NIFDA

Economic Impact Assessment

Reliance Restricted

30 April 2026

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EY Parthenon

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Ernst & Young Business Advisory Services
Harcourt Centre
Harcourt Street
Dublin
www.ey.com/ie

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Infographics

Food and drinks sector in NI, 2024

ECONOMIC IMPACT

£7.3bn
Gross Value Added (GVA)

£3,791
GVA per capita

£2.8bn
Generated directly

£4.5bn
Supported indirectly & through induced household spending

EMPLOYMENT

~109k
Full-time equivalent jobs supported

35,713
FTEs in Agriculture

23,850
FTEs in Food & Drink Manufacturing

TRADE AND MARKETS

£3.1bn
Bilateral trade with the Republic of Ireland

UK FOOD SECURITY ROLE

60–65%
UK food self-sufficiency (low by international standards)

8%
of UK indigenous food production by volume

>10%
of UK indigenous food production by value

FEED AND SUPPLY CHAIN

Domestic feed processing
retains value within the NI economy

2.86mt
tonnes of animal feed produced in NI (2024)

1. *Northern Ireland's agri-food system plays a structurally important role in supporting local economies through its deep integration of primary agriculture, food and beverage manufacturing, logistics and related services*
2. *NI does not simply add volume at the margin of the UK food system; it strengthens food security precisely where the system is most exposed*
3. *Addressing sustainability challenges across the island of Ireland calls for system-level responses that link climate mitigation, nutrient management and long-term agricultural viability across both jurisdictions*

Policy pathway

What industry is experiencing - three recurring delivery challenges

01 Fragmented delivery at policy interfaces

Environmental regulation, planning, agricultural policy and economic development intersect without clear ownership, sequencing or timelines, most visibly within the planning process.

02 Precautionary regulation slowing improvement

Risk-averse planning and approval processes delay investment that would replace higher-impact infrastructure with lower-impact alternatives, slowing system improvement.

03 Production and protection framed as competing goals

Despite many investments advancing both objectives, delivery mechanisms, particularly planning, often treat environmental protection and food production as trade-offs.

→ ***These challenges converge in practice through a labour-intensive, uncertain planning process***

What enables delivery in practice

A Stable long-term targets

Clear, durable signals on direction of travel give firms confidence to invest in long-lived, lower-impact assets.

B Flexible delivery pathways

Different technologies and approaches should be able to deliver the same outcomes, enabling innovation and site-specific solutions.

C Predictable planning processes

Timely, transparent and coordinated planning decisions that distinguish between projects that mitigate environmental pressure and those that intensify it.

D Aligned circular economy infrastructure

Coordinated treatment of projects (e.g. anaerobic digestion) across planning, environmental regulation and energy policy to make investment viable at scale.

→ ***Delivery is enabled in practice through stable objectives, flexible pathways and a predictable planning process.***

2

Executive Summary

Northern Ireland's food and drink sector is a cornerstone of economic value, food security and regional resilience

Northern Ireland's food and drink sector is one of the most economically significant and system-critical components of the regional economy. In 2024, the sector supported **£7.3bn in Gross Value Added (GVA) equating to £3,791 per capita** and approximately **109,000 full-time equivalent jobs**, extending well beyond direct production into supply chains, services and local economies across Northern Ireland. The sector's impact is highly distributed geographically, anchoring employment and economic activity in rural and semi-rural areas and supporting more balanced regional development. The economic footprint of food and drink reflects strong multiplier effects. While **£2.8bn of GVA is generated directly**, a further **£4.5bn is supported indirectly and through induced household spending**, underscoring the sector's role as an engine of wider economic activity. This breadth of impact highlights that food and drink is not only an agricultural or manufacturing sector, but a foundational system **underpinning logistics, utilities, professional services and retail across Northern Ireland.**

Figure 1: Food and Drink industry GVA contribution, (£bn)

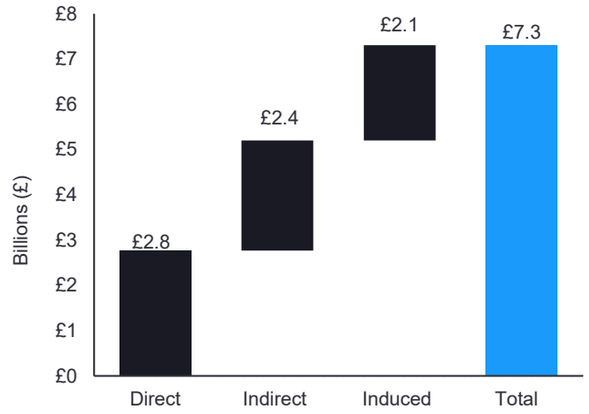
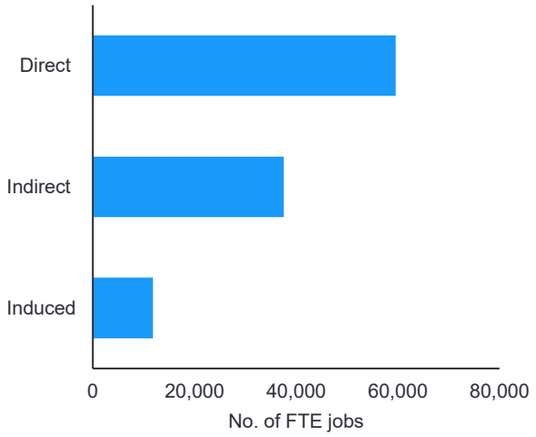


Figure 2: Food & Drink industry FTE jobs, 2024



Northern Ireland plays a disproportionate role in UK food security

Northern Ireland's importance extends well beyond the regional economy. Despite accounting for less than 3% of the UK population, Northern Ireland **produces 8% of total UK food output by volume and over 10% by value.** This contribution is concentrated in commodities that underpin food security across the UK and Ireland, including eggs, milk, beef and veal, and poultry, where Northern Ireland consistently supplies between 17% and 20% of total UK production.

Demand pressures are set to intensify. The combined population of the UK and Ireland is expected to increase by **over 2 million people by 2030**, materially raising baseline food demand. In this context, Northern Ireland's livestock- and dairy-based production capacity takes on strategic significance. While the UK remains structurally import-dependent in categories such as fruit and vegetables, domestic production continues to anchor supply, affordability and resilience in livestock and dairy. Northern Ireland output directly **reduces reliance on imports, limits exposure to global supply and price shocks, and positions the region as a central contributor** to feeding a growing population across these islands.

The Island of Ireland functions as an integrated food system

The analysis shows clearly that food production on the island of Ireland already operates as a **highly integrated system** in practice. Dairy, meat processing and beverages frequently cross the Northern Ireland–Republic of Ireland border, with shared supply chains, processing assets and long-established commercial relationships. **Cross-border trade in goods and services has grown strongly over the past decade** and has continued to expand following Brexit-related changes, with the **Republic of Ireland now representing over half of Northern Ireland's non-UK goods exports**. Northern Ireland's unique post-Brexit position, with continued access to both UK and EU markets for goods, has shifted from an initial uncertainty to a **structural economic advantage**. Export growth since the introduction of the Protocol and the Windsor Framework reinforces this position. However, the analysis also identifies persistent frictions. Differences in agricultural support regimes, VAT treatment, corporation tax and regulatory alignment create competitive asymmetries, particularly for small and medium-sized enterprises. **Without targeted adjustment, deeper integration risks uneven value capture despite strong commercial linkage.**

Figure 3: Cross border bilateral trade, 2013 - 2024

Source: NISRA

While sustainability remains a focus for the sector, further improvements are possible with the right coordination and support

Growth is increasingly shaped by productivity, not volume

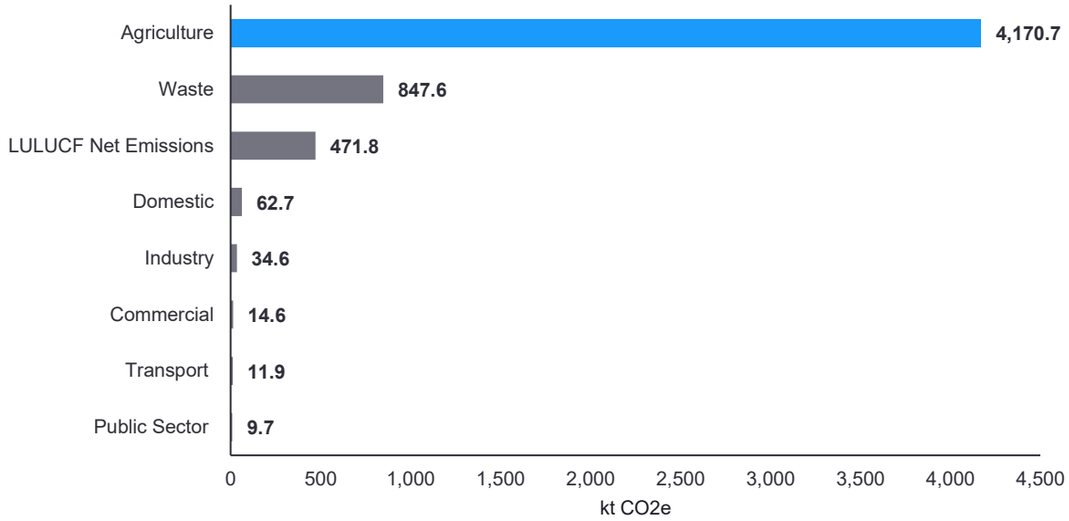
Recent production trends underline both opportunity and constraint. Livestock-based output in Northern Ireland grew strongly in 2024, driven by milk, eggs and poultry, while crop production weakened due to weather volatility, land-use shifts and profitability pressures. This divergence reinforces Northern Ireland's role as a **high-value, protein-rich producer within the UK food system.**

Looking forward, the analysis demonstrates that future economic performance could be shaped less by expansion in volumes and more by **productivity, processing capacity and cost resilience**. Scenario modelling illustrates this clearly. A productivity-led pathway, rooted in sustainability-linked innovation such as energy efficiency, waste reduction and process optimisation, delivers measurable gains in value added with limited change in employment. Conversely, **a prolonged period of cost pressure from energy, feed and labour erodes margins, weakens GVA and gradually dampens employment** and local spillovers, even if output volumes are maintained.

Sustainability pressures are system-wide, not firm-specific

Sustainability also emerges as a defining constraint and opportunity for the sector. Agriculture accounts for a disproportionately large share of Northern Ireland's greenhouse gas and ammonia emissions, reflecting the scale and structure of livestock production rather than inefficiency at individual firm level. As a result, sustainability outcomes depend on how the food system operates as a whole, particularly the interaction between feed, livestock management, nutrient handling, processing and energy use. International benchmarking shows that **high-output livestock systems can align competitiveness and environmental performance where system elements are coordinated**. Experience from Denmark and the Netherlands demonstrates the importance of feed efficiency, nutrient recycling, bioenergy integration and digital traceability. Within Northern Ireland, **improvements in feed conversion and formulation represent the most immediate lever for reducing emissions intensity while supporting productivity**. Over the medium to longer term, local processing, circular use of by-products and bioenergy solutions such as anaerobic digestion can play a system-enabling role, provided supporting infrastructure and regulatory alignment are in place.

Figure 4: Total NI methane (CH4) Emissions by Sector, 2023



Source: ONS

The policy pathway for the sector should focus on enabling better systemic outcomes by improving regulatory predictability and building alignment across government stakeholders

Food and drink manufacturing anchors local economies

Beyond national metrics, food and drink manufacturing acts as a **place-based economic anchor**. NIFDA members sit at the critical interface between agriculture and markets, converting primary output into **higher-value activity, stable employment and export earnings.** Case study evidence shows that large, integrated processors and long-established manufacturers sustain deep local supply chains, support skill development and provide alternatives to public-sector or low-productivity employment in many towns and rural communities. These local effects extend well beyond direct jobs. Through logistics, maintenance, engineering, packaging and professional services, **food and drink businesses sustain dense ecosystems of small and medium-sized enterprises**. Where investment and productivity improvements proceed, these spillovers strengthen local resilience; where margins are compressed or investment is delayed, the erosion of value is felt first in surrounding service economies before direct job losses become visible.

Delivery is the central policy challenge

The report identifies that Northern Ireland does not lack strategic ambition for food security, environmental improvement or economic growth. The **principal challenge lies in delivery across an interdependent system**. Sector engagement highlights that investment decisions cut simultaneously across planning, environmental regulation, agricultural policy and economic development. Where responsibilities overlap without clear coordination, uncertainty increases, timelines extend and investment is deferred. **Challenges in the planning process emerge as critical pressure points**. The issue is not environmental standards per se, but the predictability, sequencing and proportionality of approval processes. Where timelines are protracted, less sustainable infrastructure cannot be replaced with more sustainable solutions, **delaying investments that would lower emissions intensity and improve nutrient management.**

A policy pathway focused on enablers

The policy pathway set out in this report is consciously framed around **enablement rather than new targets or initiatives. Stable long-term objectives provide direction**, while flexibility in how outcomes are achieved enables innovation and adaptation. Predictable planning and regulatory processes allow firms to **invest with confidence and design mitigation upfront**. A credible pipeline for circular economy infrastructure, including anaerobic digestion, requires **alignment across environment, energy and planning functions**. Ultimately, progress depends on an effective partnership. Government provides clarity, coordination and certainty. Industry invests, innovates and delivers. Strengthening how these roles interact is essential to translating Northern Ireland's substantial food and drink assets into **sustained economic value, enhanced food security and improved environmental performance over the long term.**

3

Introduction

EY were commissioned to produce an evidence-based report, drawing on industry data, independent research and insights from NIFDA members

Objective of the report

EY were commissioned by the Northern Ireland Food and Drinks Association (NIFDA) to undertake a comprehensive evidence-based report and economic impact assessment (EIA) to assist policymakers with an interest in the Northern Irish Food and Drink industry. The report aims to equip government, industry and stakeholders with relevant analysis and information to aid decision-making on investment, regulation, sustainability and food security.

Having established the economic value and employment generated by the industry, the report considers how this contribution may be inhibited by current cross border trading conditions and how the introduction of an island of Ireland model to trade between Northern Ireland (NI) and the Republic of Ireland (ROI) would allow the food and drink industry on the island of Ireland to thrive.

Throughout the report, the implications of a new trading model are assessed across key areas, including local employment and production, supply chains, environmental obligations, UK food security, and the industry's requirements to survive and grow, based on international best practice.

Structure of the report

This report presents EY's methodology, findings and discussion from an assessment of the economic value and employment contribution of NI's Food and Drink industry in 2024.The report is laid out as follows:

- Section 2 introduces the objectives and context of this report. It provides an overview of the report methodology and illustrates the significance of the industry on NI's economic, social and environmental prosperity, as well as its international competitiveness.
- Section 3 presents the findings of the Economic Impact Assessment for the food and drink industry in NI. This showcases the direct, indirect and induced Gross Value Added (GVA) and employment generated by the industry in 2024.
- Section 4 assess the current economic health of NI, the prevalence of cross border trade flows, the current interdependencies between NI and ROI and the intricacies of the post Brexit trading environment for NI.
- Section 5 examines the significance held by NI to broader UK food security, with a focus on supply chain dynamics and indigenous production capabilities. The analysis highlights NI's role in underpinning both present and future food security in the UK.
- Section 6 assesses the industry's sectoral impacts and future growth areas through advanced economic modelling, providing evidence of wider economic impacts across interconnected industries. The analysis underscores the sector's importance and offers forward-looking insights on demand, areas of risk, and sustainability.
- Section 7 provides an evidence-based analysis of the role agri-food businesses play in local economies, employment, and community resilience through real-world case studies.
- Section 8 sets out the sustainability and innovation outlook of an island of Ireland model for the food and drinks industry through:
  - a comparative assessment of NI's performance relative to global leaders; and
  - analysis of the economic and environmental benefits of sustainable feed conversion and resource-efficient production, alongside mapping key opportunities to accelerate net-zero delivery.
- Section 9 sets out a policy pathway, presenting clear, evidence-based recommendations for the NI and GB governments to support sustainable growth, enhance competitiveness, and reach environmental targets.

4

Economic Impact Assessment

The framework for assessment traces how sector activity flows through the economy from direct output to wider employment and value impacts

The quantitative assessment of economic impacts in this report has been carried out using an Input-Output (IO) model. The IO model is based on the supply and demand relationships between each sector in an economy, which enable the estimation of economic "multipliers". This information allows for the calculation of multipliers for Northern Ireland's economy as a whole.

These multipliers measure how activity in one economic sector creates further activity in other economic sectors, and enables estimation of three types of impacts for the Food and Drink industry:

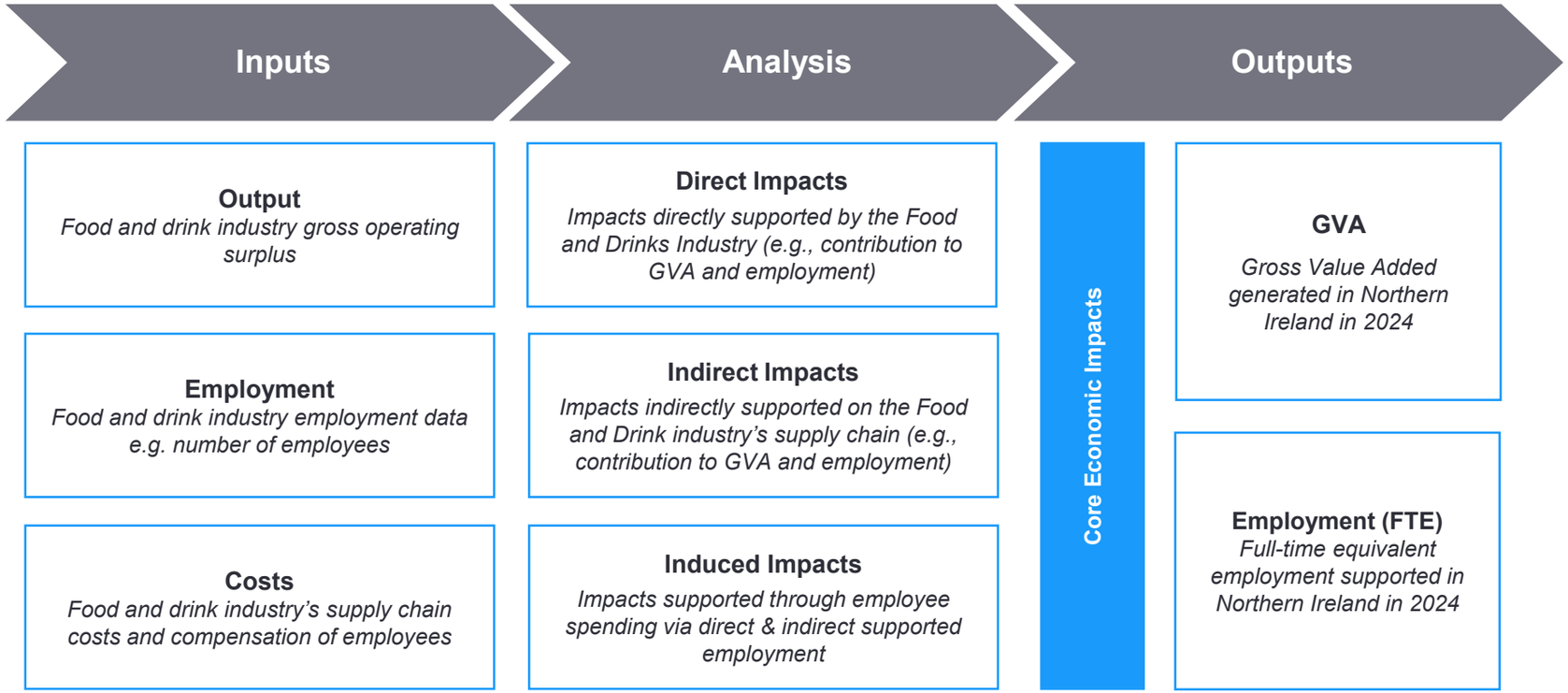
Direct impacts: the activity that the Food and Drink industry directly creates in Northern Ireland's economy as whole.

Indirect impacts: the activity that the Food and Drink industry supports through local supply chains in Northern Ireland via purchase of goods and services from local companies.

Induced impacts: the activity the Food and Drink industry supports through employee spending via directly and indirectly supported employment.

Gross Value Added (GVA) is a measure of the value of the economy from the production of goods and services and is like gross domestic product (GDP): GDP is the sum of GVA and net indirect taxes.

Below is an overview of the analytical framework underpinning the IO model, together with its outputs.



Inputs

Data item	Source
Financial data (revenues, costs, profits, taxes)	NISRA
Employment data	NISRA
Turnover data	NISRA
NI macroeconomic data	NISRA
IO multipliers	EY analysis of NISRA data

*Note: In the NISRA IO table, activity for Northern Ireland's Food and Drink industry is divided into two categories: 'manufacture of food products' and 'manufacture of beverages and tobacco products'. While beverages and tobacco are grouped together, tobacco manufacturing activity in Northern Ireland is negligible. Following the closure of the region's only major tobacco manufacturing facility, the combined sector is now overwhelmingly driven by beverages, with the tobacco industry's contribution likely close to zero.

NI's Food & Drink industry generates significant value for Northern Ireland with the benefits driving value through supply chains and spending effects

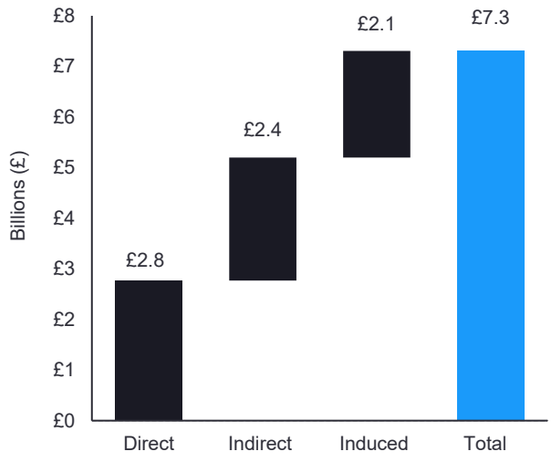
The Food and Drink industry's contribution to GVA in NI

In 2024, the Food and Drink industry generated **£7.3 billion in gross value added (GVA)** for the Northern Ireland economy, underscoring its role as a core engine of regional economic activity. When compared with NI's population of 1.93m in 2024, this equates to **£3,791 per capita**. Moreover, Of this £7.3 billion, **£2.8 billion was generated directly through the sector's own production and processing activities.**

The industry's economic footprint extends well beyond its own operations. A further £**2.4 billion of GVA was supported through indirect effects**, reflecting the sector's extensive engagement with Northern Ireland-based suppliers across areas such as agriculture, logistics, utilities and professional services. In addition, **£2.1 billion was generated through induced effects**, as wages earned within the food and drink sector and its supply chain were spent across the wider economy.

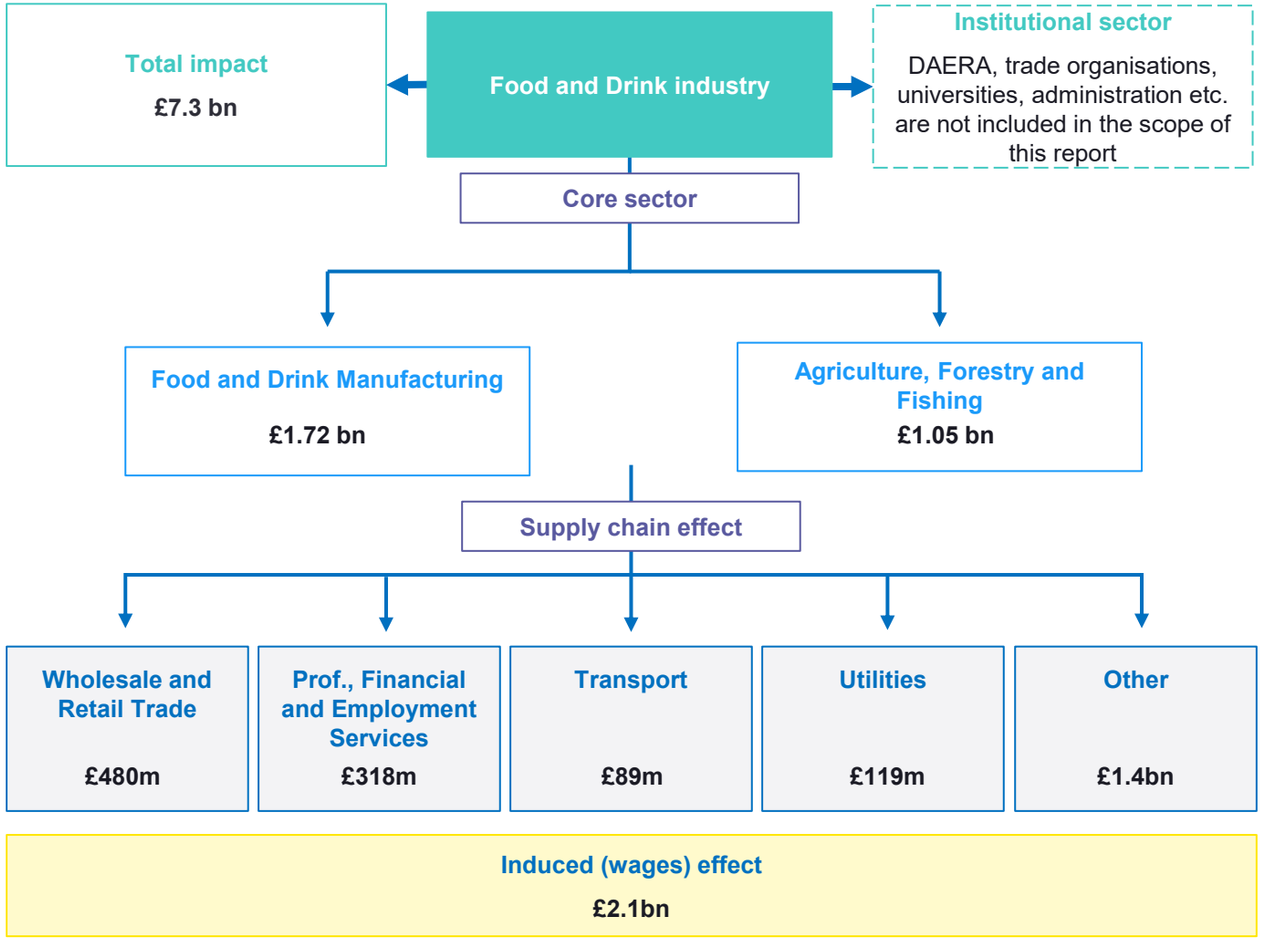
Together, these impacts illustrate how the Food and Drink industry acts not only as a significant producer in its own right, but also as a **key driver of value creation across the Northern Ireland economy.**

Figure 5: Food and Drink industry GVA contribution, (£bn)



What is GVA?
GVA measures the economic value a sector contributes to the economy after deducting the cost of goods and services it purchases from other businesses. Unlike turnover, which reflects total sales, GVA shows how much value is created and retained locally through wages, profits and production activity. It also differs from profitability, which captures returns to firms only: GVA includes both wages and profits, making it particularly important for sectors such as food and drink that operate with tight margins but high employment. For this reason, GVA is the standard metric used in economic impact assessments to reflect a sector's true contribution to jobs, incomes and regional economic resilience.

GVA of the Food and Drink industry in NI, along with four local sectors which benefit indirectly

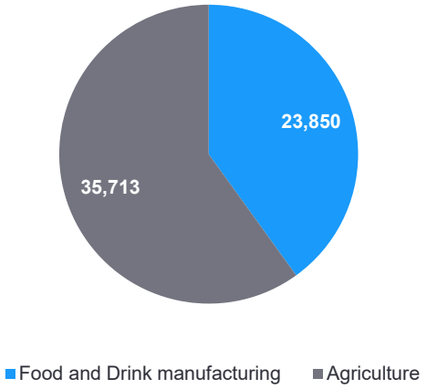


The Food and Drink industry is a major source of employment, embedded across supply chains and local economies

The Food and Drink Industry's contribution to Northern Ireland's labour market

The Food and Drink industry's contribution to the Northern Ireland economy extends well beyond the GVA it generates. In 2024, the sector supported an estimated **108,970 full-time equivalent (FTE) jobs** across the economy, reflecting its central role in sustaining employment both directly and through wider economic linkages. Of this total, **59,563 FTE jobs were supported directly by the industry itself**. These direct roles span both food and drink manufacturing and primary production, comprising **23,850 FTEs in food and drink** manufacturing and a further **35,713 FTEs in agriculture.**

Figure 6: Food and Drink industry direct FTE employment, 2024



The level of agricultural employment requires careful interpretation, as traditional Labour Force Survey (LFS) statistics do not fully capture the structure of labour participation in the sector. Agricultural work is frequently part-time or seasonal, is often undertaken alongside other employment, and includes individuals above conventional retirement age, all of which tend to be under-represented in LFS estimates. To address this, this assessment draws on the Agricultural Census compiled by DAERA and NISRA, which provides a more comprehensive reflection of labour participation in agriculture. For 2024, census data record 51,213 agricultural jobs on a headcount basis. When converted to full-time equivalent terms, EY estimates that **35,713 FTEs were directly supported by agricultural activity**, compared with approximately 21,000 roles captured by the LFS. This approach provides a more robust basis for assessing the employment footprint of the sector.

Figure 7: Food and Drink industry employment contribution, 2024

The employment impacts of the Food and Drink industry extend well beyond its own workforce. In 2024, a further **37,570 FTEs were supported indirectly** through demand along the sector's Northern Ireland-based supply chain, spanning areas such as transport, logistics, utilities and professional services. An additional **11,836 FTEs were supported through induced effects**, generated as wages earned within the industry and its supply chain were spent across the wider economy.

This pattern of employment support underlines the structural importance of the Food and Drink industry to Northern Ireland's economy. Jobs linked to the sector are distributed across rural and urban areas and across a wide range of skill levels, helping to sustain local economies and provide a stable employment base. **As such, the industry plays a critical role not only in generating jobs, but in underpinning economic resilience and supporting balanced regional development across Northern Ireland.**

5

The Island of Ireland Perspective

Northern Ireland's unique post-Brexit position has transformed cross-border trade from a policy risk into a sustainable economic advantage

Northern Ireland occupies a distinctive position in the post-Brexit trading environment, shaped by the need to balance the UK's exit from the European Union with the protection of the Good Friday Agreement and the avoidance of a hard land border on the island of Ireland. Prior to Brexit, the all-island economy enabled the free movement of goods, services, people and inputs across the Northern Ireland – Republic of Ireland border without customs or regulatory checks. The UK's withdrawal from the EU fundamentally challenged this model, raising concerns about the potential economic and political consequences of re-introducing a physical or regulatory border between the two jurisdictions.

In response, a highly tailored policy framework was developed to manage Northern Ireland's unique circumstances. The Northern Ireland Protocol was introduced to balance certain regulatory and customs checks between the land border and the NI-GB trading relationship, allowing Northern Ireland to maintain regulatory alignment with key elements of the EU Single Market for goods while remaining within the UK customs territory. The subsequent Windsor Framework refined these arrangements, aiming to reduce friction on internal UK trade while preserving Northern Ireland's open land border with the Republic of Ireland. This combination of measures has resulted in Northern Ireland holding a distinctive dual-market position, with continued access to both UK and EU markets for goods.

Within this context, cross-border trade between Northern Ireland and the Republic of Ireland has demonstrated considerable resilience and has strengthened significantly over the past decade. Trade flows have grown consistently since 2013 and have responded positively to successive policy milestones. Between the 2016 Brexit referendum and 2024, cross-border trade increased by approximately 85%. This growth was maintained following the introduction of the Northern Ireland Protocol, with trade rising by 31% from 2021 – 2024, and continued after the implementation of the Windsor Framework, with an increase of c.5% from 2023 – 2024.

These sustained increases have elevated the Republic of Ireland to a position of near parity with GB as Northern Ireland's most important trading partner, despite the UK historically dominating Northern Ireland's trading relationships. In 2024, of the £19.6 billion in goods exports from Northern Ireland to non-GB markets, the Republic of Ireland accounted for 54%. Goods exports to the Republic have risen steadily since Brexit, increasing from £2.4 billion in 2016 to £4.4 billion in 2024. As a result, the Republic of Ireland became Northern Ireland's largest single destination for goods exports in 2024, accounting for 39.9% of total goods exports.

Growth has not been limited to goods trade. Northern Ireland has also experienced a notable expansion in cross-border services exports. In 2024, services exports to the Republic of Ireland totalled £2.7 billion, representing 26% of Northern Ireland's total exports to the Republic and marking a 13.3% increase compared with 2023. This highlights the increasing breadth and maturity of cross-border economic integration, extending beyond traditional goods-based exchange.

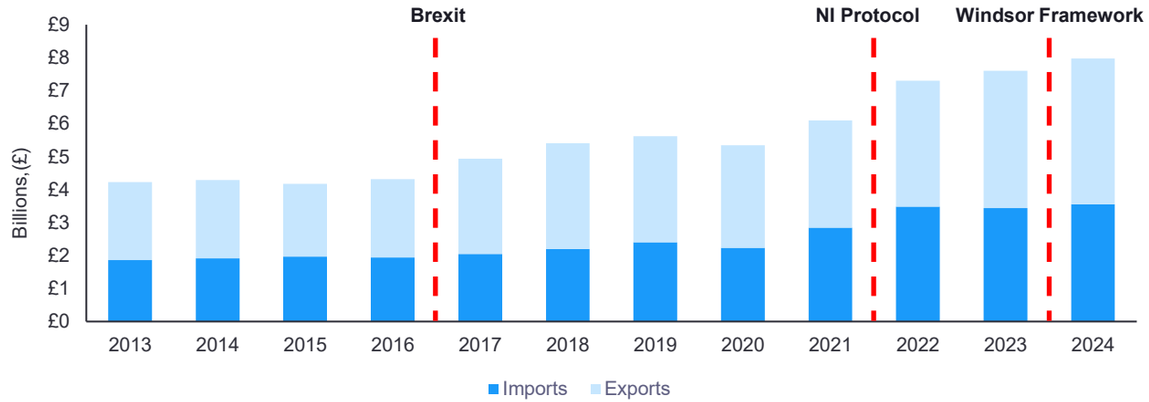
Overall, the evolution of Northern Ireland's post-Brexit trading arrangements has transformed what was initially perceived as a policy risk into a sustained economic strength. The continued growth of goods and services trade with the Republic of Ireland reflects the depth of economic interdependence across the island and is underpinned by long-established, highly integrated agri-food and food-processing supply chains. **These linkages provide the foundation for understanding how the island of Ireland increasingly operates as a connected food system in practice, rather than as two separate and disconnected markets.**

Table 1: Northern Ireland Trade Statistics, £ bn, (NIETS)

Trading Partner	Exports	2023	2024	% difference 23 -24
Ireland	Goods	£6.4	£7.8	22% ↑
	Services	£2.4	£2.7	13.3% ↑
Rest of EU	Goods	£2.1	£2.6	21.6% ↑
	Services	£0.8	£1.1	28.2% ↑
Rest of World	Goods	£3.7	£3.2	14.8% ↓
	Services	£1.7	£2.4	36.8% ↑

Source: NISRA

Figure 8: Cross border bilateral trade, 2013 - 2024



Source: NISRA

Interlinkages of food and beverage production and supply chain operations push the island of Ireland toward an integrated food system

The growth and resilience of cross-border trade outlined in the previous section reflect deeper structural interdependencies within the food and drink sector that extend well beyond bilateral trade flows. In practice, food and drink production on the island of Ireland already operates as an integrated system, with supply chains spanning primary production, processing and distribution across the Northern Ireland-Republic of Ireland border. **These interlinkages are not recent developments, but the result of long-established commercial relationships, shared infrastructure and complementary production capacities that have evolved over decades.**

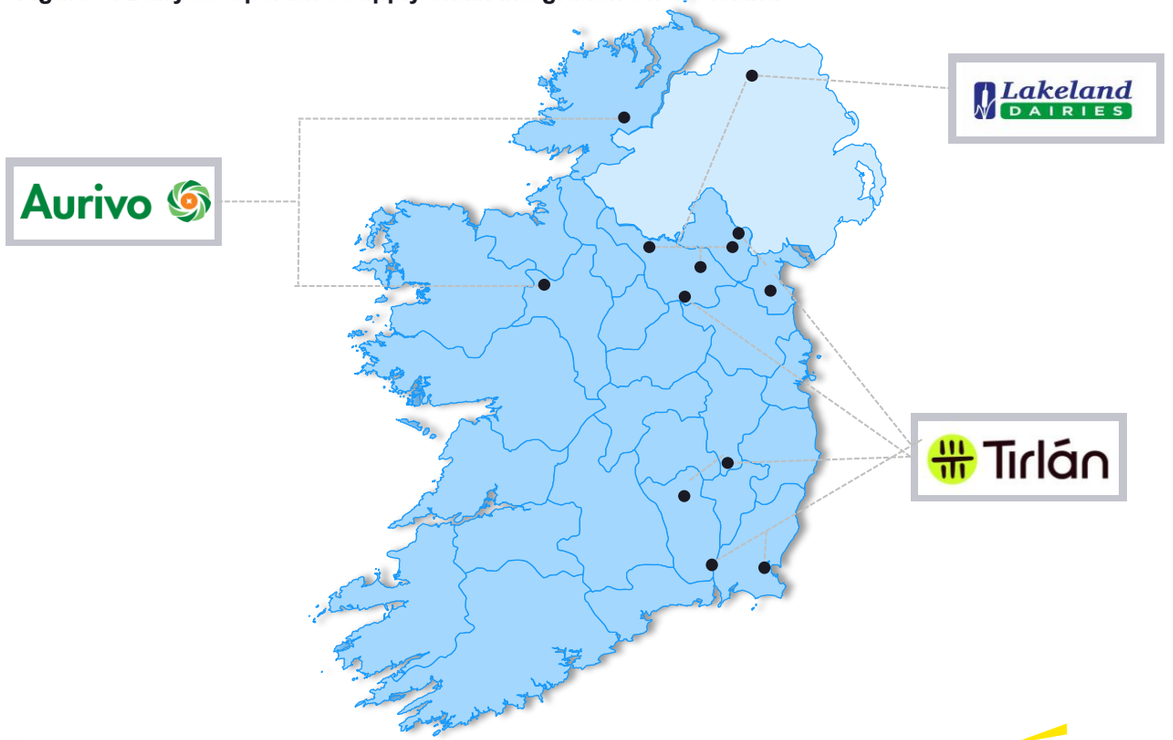
The dairy sector provides one of the clearest and most economically significant examples of this integration. Milk production and processing operate on an all-island basis, with raw milk routinely transported across the border for processing. This model is driven by the structure of the sector itself, particularly the presence of major dairy co-operatives such as Tirlán, Aurivo and Lakeland Dairies. These organisations manage milk pools within Northern Ireland while operating substantial processing capacity in the Republic of Ireland, meaning that cross-border milk movements are a core feature of efficient system operation rather than an exception. In 2024, sales of raw milk from Northern Ireland to the Republic of Ireland reached £284m, averaging £249m per year between 2019 and 2024. These flows illustrate the scale and consistency of cross-border reliance within the dairy supply chain.

The commercial logic underpinning this integration is further illustrated by the operations of Lakeland Dairies, a ROI based co-operative with a significant presence in the UK . Despite its Northern Ireland base, Lakeland's footprint spans the island, processing approximately 2 billion litres of milk annually. This configuration reflects both the geographic distribution of milk supply and the efficiencies associated with concentrating large-scale processing capacity, reinforcing the economic case for an all-island dairy system. It also reflects the differing advantages of the production systems in ROI and NI, with NI producing a very flat milk profile, while ROI produces more from a grass fed and spring calving-based system.

Integration is also evident within the beverage industry, where multinational producers operate complex, cross-jurisdictional supply chains. Diageo provides a strong example, with operational sites in both Northern Ireland and the Republic of Ireland supporting the production of global brands such as Guinness, Baileys, Smirnoff and Tanqueray. Diageo's Baileys Irish Cream production is particularly illustrative of system-wide integration. Each year, c.200m litres of Irish milk, supplied largely by family-owned farms across the island, are used in Baileys' production. This supply chain links agriculture, processing and export-oriented manufacturing across jurisdictions, demonstrating how value creation depends on island-wide networks.

The meat processing sector provides further evidence of the depth and durability of cross-border integration. Major processors such as ABP Food Group operate explicitly on an all-island basis, with cattle and sheep processing facilities located in both Northern Ireland and the Republic of Ireland. In 2021, ABP acquired a majority stake in Fane Valley Co-operative's red-meat business, including Northern Ireland-based processor Linden Foods in County Tyrone. Following this acquisition, ABP expanded its integrated island-wide network, operating processing facilities in Northern Ireland, including Counties Tyrone and Armagh, alongside sites in the Republic of Ireland such as Counties Louth, Tipperary, Kilkenny and Cork. These sectoral examples demonstrate that the island of Ireland already functions, in operational terms, as a highly interconnected food system. **Scale efficiencies, shared sourcing and integrated processing networks underpin competitiveness across dairy, beverages and meat processing, allowing firms to optimise production and respond flexibly to market demand.** While post-Brexit arrangements have introduced additional administrative and regulatory considerations, the continued performance of these integrated supply chains indicates that economic benefits derived from operating at island scale continue to outweigh the associated complexities. This existing level of integration provides a critical foundation for assessing both the opportunities and the constraints associated with a more formalised all-island food system, which are considered in subsequent analysis.

Figure 9: Dairy co-operative supply chain integration on the island



Northern Ireland's food and drink industry plays a pivotal strategic role in supporting future all-island food demand

Northern Ireland's food and drink industry recorded a strong trading performance in 2024, with bilateral trade with the Republic of Ireland totalling £3.1bn. Trade continues to be heavily concentrated in food and live animals, which accounted for an average of 88% of total industry trade between 2014 and 2024. **This sustained concentration reflects Northern Ireland's long-standing agri-food specialisation and the depth of its primary production and processing base, which together underpin the region's ability to supply both domestic and external markets on a consistent basis.**

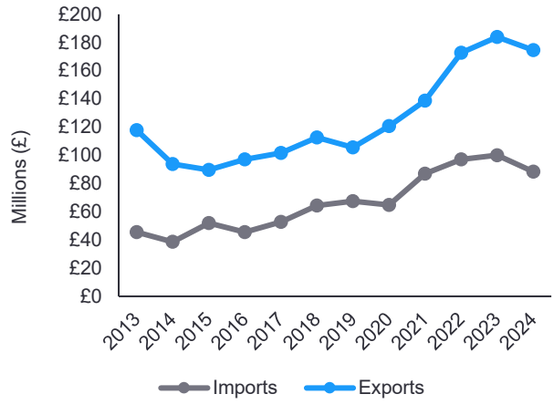
At a more granular level, this strength is evident across a number of structurally export-led sub-sectors. In particular, animal feedstuffs, dairy products, and birds' eggs have consistently recorded higher export values than imports over the past decade. **This pattern indicates that these sub-sectors are not only meeting domestic demand but are generating sustained export surpluses, supported by established supply chains and high levels of cross-border integration.** These trade profiles are consistent with the integrated all-island system described previously, in which production and processing capacity is aligned across jurisdictions rather than confined within national boundaries.

Food manufacturing also plays a central role within Northern Ireland's wider industry base in the context of exports. In 2024, food manufacturing accounted for 44% of total manufacturing exports to ROI, highlighting the sector's dominance within the region's manufacturing landscape. The manufacture of beverages accounted for a further 9%, reinforcing the importance of food and drink not only as a trading sector, but as a foundational component of Northern Ireland's industrial economy.

The strength and structure of Northern Ireland's food and drink sector have implications that extend beyond the region itself and are particularly significant in an all-island context. Despite being the smaller jurisdiction in population terms, Northern Ireland plays a strategically important role in supporting food supply to the Republic of Ireland, where both current and projected population growth will result in increased food demand. Ireland's population has grown steadily since 2010 and is projected to increase by 6.3% between 2023 and 2030, with the population forecast to reach 5.97m by 2050. Meeting this growth will require corresponding increases in food and drink production.

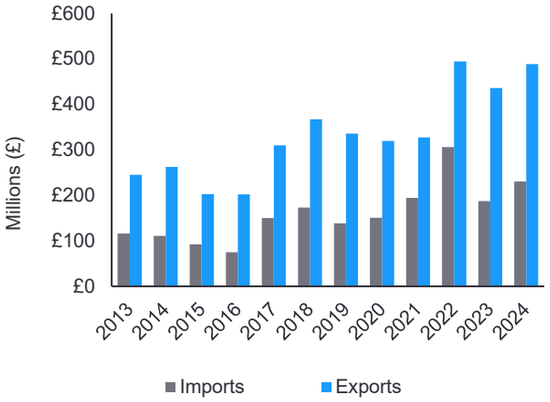
Expanding domestic production capacity in the Republic of Ireland may, however, prove increasingly challenging in light of environmental constraints and productivity pressures. Against this backdrop, Northern Ireland is well-positioned to supplement all-island supply, particularly in sectors where it already holds scale advantages. This dynamic is illustrated in the dairy sector, where Northern Ireland's domestic milk production increased by 3.8% between 2022 and 2024, while production in the Republic of Ireland declined by 4.49% over the same period. **This divergence reinforces Northern Ireland's strategic importance within all-island dairy supply chains and highlights its role in helping to absorb demand pressures as they emerge.**

Figure 10: Feedstuff trade, 2013 - 2024



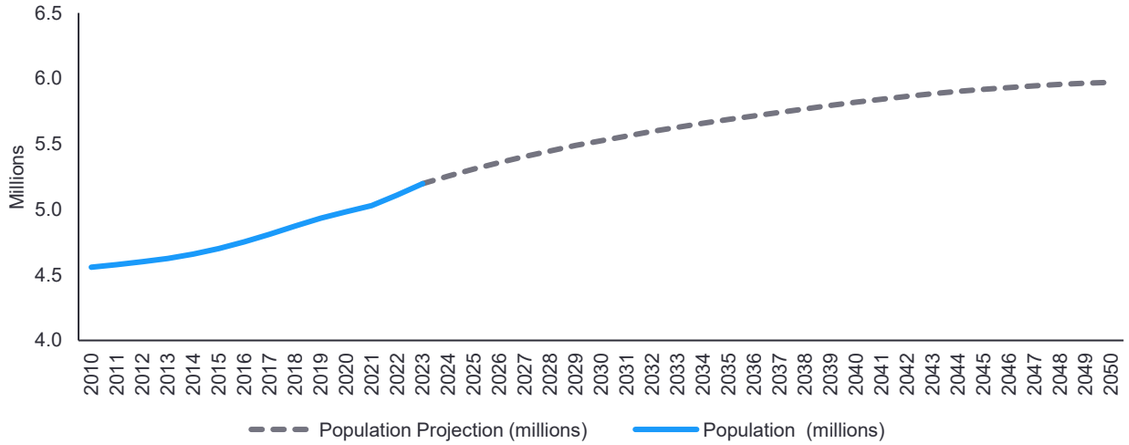
Source: NISRA

Figure 11: Dairy Products, 2013 - 2024



Source: NISRA

Figure 12: ROI population projection (2010 – 2050)



Source: Our World Data

Export trade has grown strongly since the NI protocol and Windsor Framework

NI's drinks sector has navigated the challenging trading conditions arising from Brexit. While the initial period following the UK's exit from the EU introduced uncertainty and adjustment costs, the introduction of the Northern Ireland Protocol, and subsequently the Windsor Framework, has coincided with renewed export momentum. Between 2022 and 2024, bilateral drinks trade increased by 26.8% overall, with exports alone rising by 16.5%, signalling growing confidence and market access within the post-Brexit trading environment.

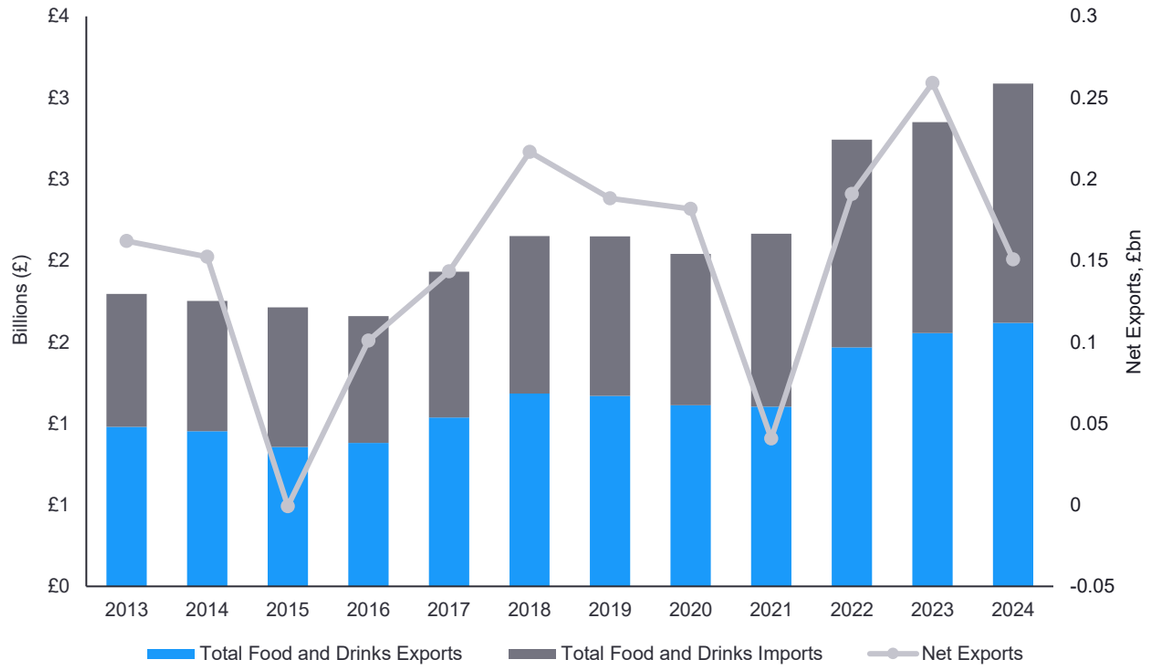
The underlying strength of NI's drinks industry is reflected in both the presence of established multinational operators and the region's ability to attract and retain exclusive distribution activity for globally recognised brands. United Wines, a Craigavon-based subsidiary of Heineken Ireland, is one of the largest drinks distributors on the island of Ireland, servicing over 1,000 vendors nationwide with a broad portfolio of beers, wines, spirits and soft drinks. In 2023, United Wines secured an exclusive Northern Ireland distribution agreement with Global Brands for their ready-to-drink products, including VK, Hooch and Shake Baby Shake.

Further evidence of the sector's importance can be seen in frontline production and employment. Coca-Cola HBC Northern Ireland Limited, headquartered in Lisburn, County Antrim, oversees the production, distribution, marketing and sale of a wide range of international brands, including Coca-Cola, Fanta, Sprite and Schweppes, alongside well-established national brands such as Deep River Rock and Fruice. The Lisburn facility employs over 550 people, with economic impacts extending beyond direct employment. Employee spending, local procurement and supply-chain linkages generate wider multiplier effects across the regional economy. As previously discussed, the induced GVA impact of the wider food & drink industry was estimated at £2.1bn in 2024, underscoring its role as a driver of local economic activity.

The importance of maintaining and strengthening trading relationships between NI and ROI is further reinforced through targeted policy support focused on small and medium-sized enterprise (SME) growth. In July 2025, InterTradeIreland launched the Trade Missions @ Home initiative, designed to facilitate direct engagement between NI businesses and key buyers, including representatives from major retailers. The programme aims to accelerate market entry, strengthen cross-border commercial relationships and build export capability among smaller firms. As part of the initiative, 19 food and drink businesses travelled to Dublin to participate in pre-arranged sales meetings tailored to fast-track commercial growth. The programme is explicitly targeted at SMEs and social enterprises generating less than £100,000 in annual turnover, with particular encouragement extended to businesses with limited or no prior cross-border trading experience. This focus reflects a policy objective to broaden participation in cross-border trade and reduce structural barriers faced by smaller producers.

Overall, these efforts point to a positive outlook for NI's drinks sector. Current investment and targeted support are helping to strengthen the SME base, with the expectation that today's smaller producers will account for a greater share of industry output over the medium to long term. **A more integrated, all-island approach to food and drink trade would further support sectoral growth, improve resilience across shared supply chains, and help safeguard long-term access to markets in both NI and ROI.**

Figure 13: Food & Drinks trade, 2013 - 2024



Source: NISRA

Despite post-Brexit barriers, the foundations of an all-island food system remain strong, with policy alignment offering a clear path forward

As highlighted throughout this report, for many firms in NI, trade with ROI is integral to day-to-day operations rather than incidental. Key sectors such as dairy, meat processing and beverages already function on a cross-border basis, with shared supply chains, processing infrastructure and markets. **However, despite this high level of integration in practice, a number of structural and policy barriers continue to limit the realisation of a fully integrated all - island food and drink system.**

Although cross - border trade between NI and ROI has increased since Brexit, regulatory divergence continues to restrict the extent to which NI businesses can fully exploit their strategic position between the UK and EU markets. The Green and Red Lane system, introduced under the Windsor Framework, was intended to streamline the movement of goods while safeguarding the integrity of the EU Single Market. **However, differences between UK and EU sanitary and phytosanitary (SPS) regulations mean that agricultural and food products failing to meet EU standards remain prohibited from placement on EU markets, including ROI.** These restrictions apply to:

- meat and meat products that do not meet EU standards;
- milk and dairy products from non-approved sources;
- live animals and germinal products without EU veterinary approval;
- certain plants and plant-based products;
- pre-packaged foods containing non-compliant animal ingredients; and
- products produced using substances banned under EU SPS legislation.

These regulatory requirements impose additional administrative burdens, compliance costs and delays on NI traders, with disproportionate impacts on SMEs. For many smaller firms, the cost of adapting products or processes to meet EU regulatory standards may outweigh the commercial benefits of cross - border trade, effectively excluding them from the ROI market. These constraints are not only a concern for NI businesses, they also limit the extent to which ROI can rely on NI to supplement domestic food supply, potentially increasing vulnerability to supply shocks elsewhere in the EU.

Beyond regulation, differences in agricultural policy and funding frameworks further complicate long-term all - island planning. NI's exit from the EU resulted in the loss of access to the Common Agricultural Policy (CAP), which provided stable, multi-annual funding for farm incomes, rural development and environmental measures. During the 2014 – 2020 CAP period, NI received a total allocation of €2.53 billion, with approximately 91% delivered through Pillar 1 direct payments. While transitional arrangements, including the continuation of the Basic Payment Scheme and the introduction of the Farm Sustainability Payment by DAERA in January 2026 to provide ongoing support, these measures do not match CAP in either scale or long-term funding certainty.

As a result, farmers in NI face a structurally less favourable support environment than their counterparts in ROI, creating competitive imbalances across the island. Without targeted intervention, such as institutional investment or compensatory policy mechanisms, these disparities undermine the feasibility of a level playing field, which would be essential for the effective functioning of an all - island food system.

Differences in tax policy between NI and ROI present an additional barrier. Under the Windsor Framework, the EU VAT scheme for small enterprises does not apply to NI. This scheme allows businesses with annual turnover below €100,000 across EU Member States to supply goods and services without accounting for VAT. While the UK and EU have agreed a list of goods exempt from EU VAT rules, NI-based SMEs remain at a competitive disadvantage relative to ROI firms that can trade VAT- free, limiting NI businesses' ability to compete on price within a shared market.

Corporate taxation further compounds these disadvantages. ROI's competitive corporation tax regime has long been a cornerstone of its investment strategy, particularly for multinational companies. Firms in ROI are subject to a standard corporation tax rate of 12.5%, with a 15% rate applied to companies with revenues above €750m under the OECD BEPS 2.0 framework. In contrast, NI aligns with the wider UK system, applying a 25% rate to firms with profits above £250,000 and 19% for those below £50,000. These differences impact business location decisions and cost competitiveness.

Regulatory divergence, funding disparities and tax differentials present obstacles to competition within an all - island food and drink system. Without alignment or appropriate mitigating measures, ROI would likely benefit disproportionately from deeper integration, while NI businesses, at both SME and multinational levels, could continue to operate at a competitive disadvantage.

In theory, enhanced access to the EU Single Market through a more integrated all - island food system strengthens the case for deeper integration by improving scale, efficiency and productivity. **Research by the Economic and Social Research Institute (ESRI) suggests that increased north – south interaction can generate mutually beneficial outcomes, including higher economic growth, rising real wages and reduced unemployment across the island.** However, despite these potential gains, the combined effects of regulatory barriers, administrative complexity, funding inequality and contrasting tax regimes remain significant impediments to the development of a fully integrated all - island food and drink system.

Key insights: The Island of Ireland perspective

Cross-border trade has strengthened despite post-Brexit complexity
Goods and services trade between Northern Ireland and the Republic of Ireland has grown consistently over the past decade and continued to expand following the introduction of the Protocol and the Windsor Framework. Rather than reversing integration, post-Brexit arrangements have coincided with deeper economic engagement across the border.

The island already operates as an integrated food system in practice
Evidence from dairy, meat processing and beverages demonstrates that production, processing and distribution frequently span jurisdictions. Long-established supply chains, shared infrastructure and cooperative models mean that scale efficiencies are already being realised on an all-island basis, even in the absence of full policy alignment.

Northern Ireland's dual-market position is a structural economic advantage
Continued access to both UK and EU goods markets differentiates Northern Ireland from other UK regions and has supported export growth to the Republic of Ireland. This position has elevated ROI to near parity with Great Britain as NI's most important trading partner and underpins the resilience of integrated agri-food supply chains.

Northern Ireland plays a strategic supply role relative to the Republic of Ireland
Diverging production trends, particularly in dairy, highlight Northern Ireland's growing importance in supporting all-island food supply. Where environmental constraints and productivity pressures limit expansion in the Republic of Ireland, Northern Ireland's production base provides an important source of stability and capacity.

Policy and structural misalignment remain binding constraints
Despite strong commercial integration, differences in agricultural support frameworks, VAT treatment, corporation tax and regulatory requirements continue to distort competition. These asymmetries risk limiting the extent to which NI firms can fully benefit from deeper integration and may lead to disproportionate value capture outside Northern Ireland.

Further integration presents opportunity, but not without adjustment
A more formalised all-island food system could enhance efficiency, competitiveness and sustainability outcomes. However, the analysis shows that realising these gains depends on addressing structural and policy frictions, rather than assuming trade growth alone will deliver balanced benefits.

6

Northern Ireland’s Contribution to UK Food Security

UK food resilience depends on how domestic production and imports interact

UK Food Production-to-Supply Ratio

The UK food production-to-supply ratio outlined on the right provides a long-run indicator of the balance between domestic food production and total food availability, including imports. Over the past seven decades, this ratio has fluctuated significantly, reflecting changes in agricultural policy, productivity, trade integration, and external economic and environmental pressures.

In the post-war period, the UK entered the 1950s with a relatively low production-to-supply ratio. In 1956, domestic production accounted for just 47% of total food supply, indicating a high level of import dependence. This reflected the structural characteristics of the UK economy at the time, including limited agricultural productivity, strong reliance on overseas trade, and the legacy effects of wartime disruption. Food security concerns during this period were closely linked to supply reliability rather than domestic production capacity.

From the late 1950s through to the mid-1980s, the ratio increased steadily, reaching a peak of 78% in 1984. This rise coincided with a period of sustained investment in agricultural productivity, improvements in farm mechanisation, yield gains, and the policy framework associated with Common Agricultural Policy (CAP) participation. During this phase, domestic production expanded faster than consumption growth, reducing the UK's reliance on imports and strengthening indigenous supply across several staple food groups. This period represents the high-water mark of UK domestic food self-reliance in volumetric terms.

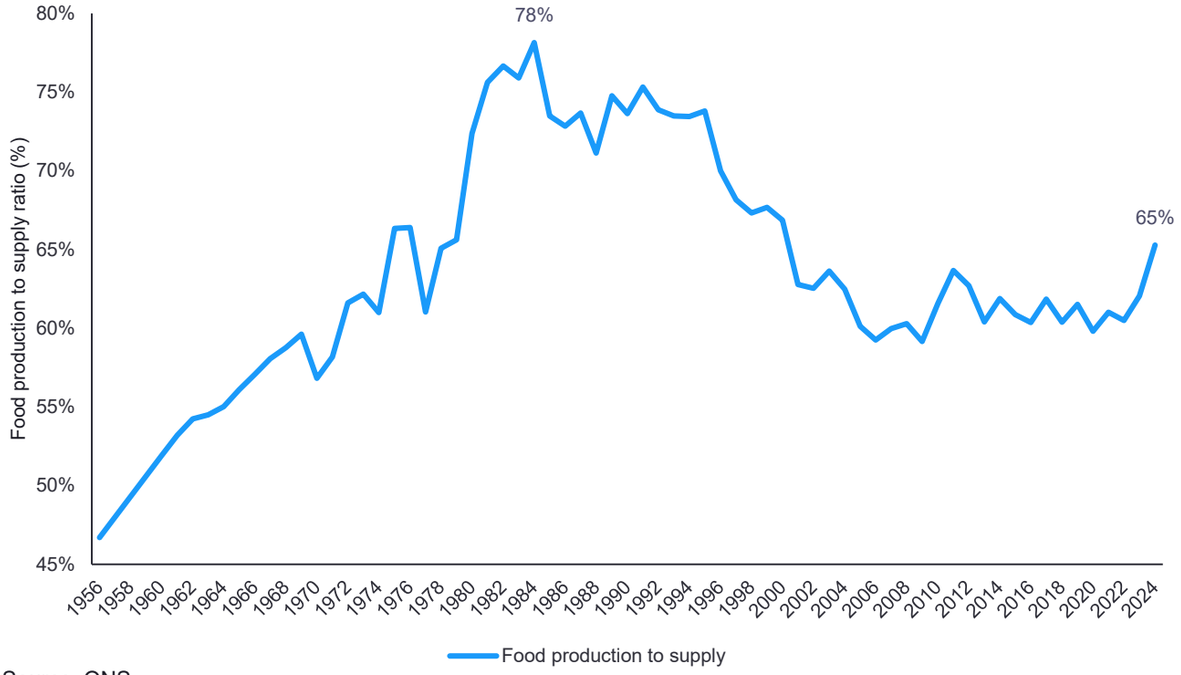
After 1984, the ratio declined progressively, falling to 59% by 2006. This decline reflected a combination of structural changes. These included shifts in land use, diversification of consumer diets towards imported products (particularly fresh fruit and out-of-season produce), increased globalisation of food supply chains, and policy reforms that prioritised environmental outcomes and market efficiency over volume expansion. At the same time, population growth and changing consumption patterns increased demand for food types where domestic production was structurally constrained.

From the mid-2000s onwards, the production-to-supply ratio stabilised at around 60%, indicating a new structural equilibrium rather than a temporary deviation. This plateau suggests that the UK food system has been operating within a relatively stable balance between domestic capability and import reliance. Domestic production has remained strong in several key categories, particularly livestock, dairy and cereals, but imports have continued to play a structural role in supplementing supply, smoothing volatility and supporting year-round availability.

In 2024, the ratio increased to approximately 65%, up from 62% in 2023. This recent uplift reflects a combination of short-term and structural factors. These include recovery in certain domestic production categories, elevated global trade uncertainty prompting supply chain re-balancing, and renewed policy attention on food security following recent global shocks. **While this increase indicates an improvement in domestic supply relative to total availability, it does not signal a return to historic levels of self-sufficiency observed in the 1980s.**

The long-run downward shift after the mid-1980s highlights that import reliance is not the result of short-term underperformance, but a reflection of consumption patterns, climatic constraints and economic trade-offs. **The recent increase in the production-to-supply ratio therefore matters less as a headline reversal, and more as an indicator of where domestic capacity can still play a role in strengthening resilience at the margin.** This context is critical for assessing food security risks. A stable but relatively low production-to-supply ratio implies that resilience depends not only on domestic output, but also on the reliability of trade, the diversity of supply sources, and the capacity of indigenous production to expand where it is most effective. It is within this structural framework that Northern Ireland's contribution to UK food security should be understood.

Figure 14: UK food production to supply ratio, 1956 - 2024



Source: ONS

Domestic production meets a significant proportion of indigenous food demand but overall self-sufficiency is shaped by structural import needs

In 2024, the UK produced just under 50m tonnes of indigenous food, reflecting the continued importance of domestic agriculture in meeting national food requirements. As outlined above, indigenous food production covers those commodities that can be produced within the UK's climate and farming system, including cereals, milk, potatoes, meat, eggs and selected vegetables. This production base forms the core of the UK food system and supplies the majority of staple and protein-rich foods consumed domestically.

Total UK indigenous food demand in 2024 reached just over 64m tonnes, indicating that domestic production met a substantial share of overall requirements but did not fully satisfy demand. On a like-for-like basis, indigenous production accounted for approximately 77% of demand for food types that can be produced domestically, with the remaining balance met through imports. This measure differs from DEFRA's commonly cited headline that the **UK produces around 60% of its total food supply**, which reflects a broader definition including foods that cannot be produced at scale in the UK, such as most fresh fruit and tropical products. When these structurally import-dependent categories are included, overall self-sufficiency appears lower, despite strong performance in indigenous food production.

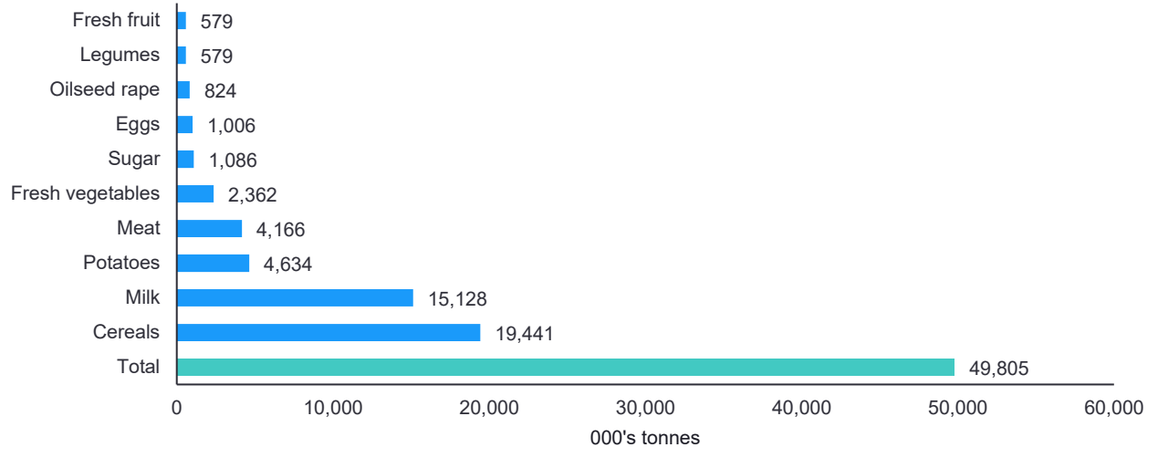
The composition of domestic production remains concentrated in a small number of key categories. Cereals, milk and potatoes were the largest contributors to indigenous output in 2024, together accounting for the majority of production volume. Cereals remain essential both for direct consumption and as an input into livestock and food manufacturing. Milk production underpins liquid consumption and a wide range of processed dairy products, while potatoes continue to play a central role as a staple food and manufacturing input.

Livestock products, including meat and eggs, further reinforce the strength of the indigenous production base. These categories are particularly important from a food security perspective given their role in diets and their potential to displace imports. However, production outcomes remain sensitive to factors beyond the farm gate, including input costs, processing capacity and environmental constraints, meaning imports continue to play a stabilising role even where domestic capability is strong.

Fresh fruit remains a clear structural exception. Domestic production met only a small proportion of total fruit demand in 2024, reflecting climatic and seasonal limits that restrict the scope for large-scale domestic expansion. This illustrates that import reliance in certain categories is not a function of under-performance, but a structural characteristic of the UK food system.

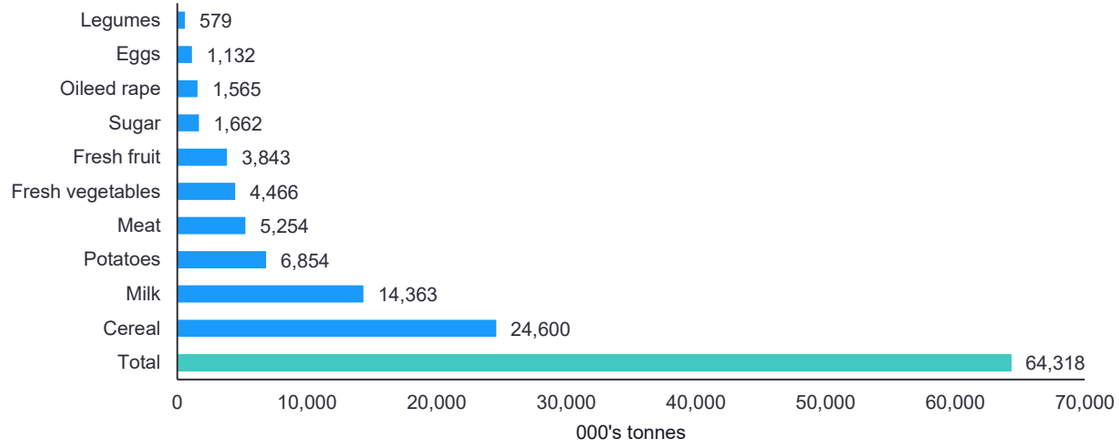
Overall, the 2024 position highlights a system in which domestic production provides a strong foundation for food availability while imports remain an essential element. The distinction between indigenous production performance and total food self-sufficiency is critical for interpreting food security: **the UK is not seeking to eliminate imports, but to maximise resilience by strengthening domestic supply where it can be scaled most effectively.** Additional detail at a commodity level can be found in the Appendix.

Figure 15: UK domestic production, (000's tonnes), 2024



Source: ONS

Figure 16: UK domestic consumption, (000's tonnes), 2024



Source: ONS

Domestic food production underpins supply but varies sharply by commodity

Domestic production remains a critical foundation of UK food security, but it is best understood as a set of distinct commodity systems rather than as a single, uniform national capability. The UK Food Security Report characterises the overall balance between domestic production and trade as broadly stable, while highlighting that production outcomes are increasingly influenced by weather volatility and longer-term environmental pressures. This matters because domestic production anchors indigenous supply across many staple and protein-rich categories, yet the reliability of that anchor differs materially by commodity, depending on production systems and sensitivity to external conditions.

Arable production illustrates this volatility most clearly. Official statistics show that total UK cereals production in 2024, including wheat, barley, oats and minor cereals, fell to just over 19.4m tonnes, a 12% decline compared with 2023. This reduction reflected a combination of reduced wheat planting area and weaker yields, driven in part by disrupted planting conditions and adverse weather. Cereals are strategically important not only for direct human consumption, but also as a key input into downstream supply chains through animal feed and food processing. Volatility in cereal output therefore affects domestic availability more broadly and increases reliance on trade to offset shortfalls in weaker years.

Livestock systems present a different production profile. Output is generally less immediately weather-driven, but more dependent on input costs, animal health conditions and processing capacity. DEFRA livestock statistics indicate that total UK meat production reached 4,166k tonnes in 2024, an increase of 2.6% on the previous year, with poultry accounting for the largest share of output. Home-fed production increased across several categories, including cattle and pigs, supported by strong market conditions and producer confidence. From a food security perspective, this points to substantial domestic capability, but one that relies on conditions beyond the farm gate, particularly feed availability, input costs and processing throughput.

Dairy production also plays a central role within the indigenous food system. DEFRA data show UK milk production reached 15,128k tonnes, alongside increased values for milk and dairy products. Performance was shaped by constrained supplies during parts of the year and associated price dynamics, reinforcing that the contribution of dairy to food security depends not only on farm-level output, but on the capacity of domestic processing to translate production into liquid consumption and manufactured products.

Horticulture highlights the most structural limits in domestic production. In 2024, home-produced vegetables increased to 2.4m tonnes, while home-produced fruit totalled 579k tonnes. Domestic production met c.51% of vegetable demand but only 15% of fruit demand. This divergence reflects climatic constraints, seasonality and the economics of protected production, meaning that even with stable or improving horticulture output, the UK remains structurally reliant on imports for fruit and a significant share of vegetables.

The UK is relatively less food self-sufficient than its peers

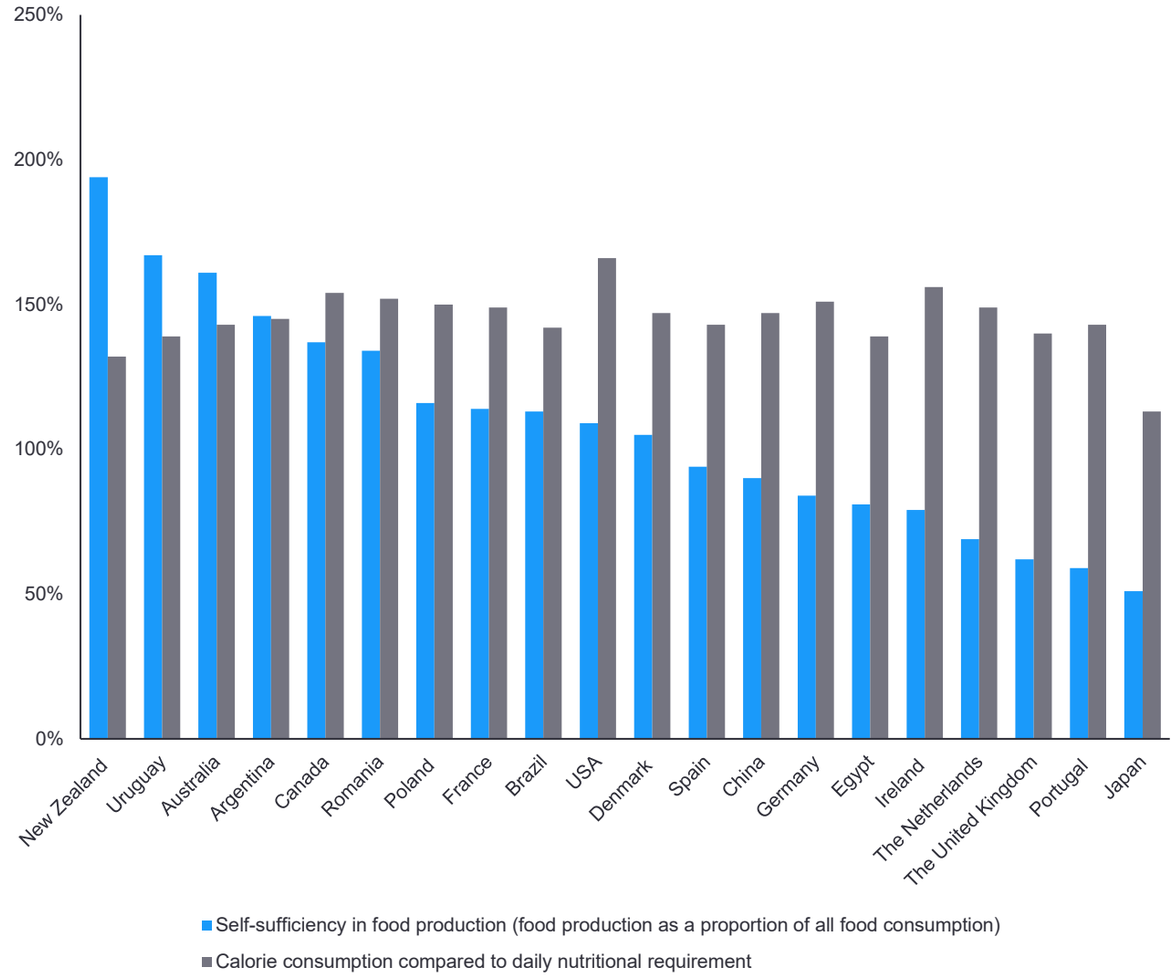
The uneven resilience of domestic food production across commodity systems becomes more significant when the UK is set in an international context. **Compared with other developed economies, the UK operates with a relatively low level of food self-sufficiency**, meaning that regions capable of sustaining and expanding indigenous production play a proportionately larger role in supporting national food security. The Savills Global Food Self-Sufficiency Tracker, which uses FAO production, trade and consumption data to estimate the proportion of national food demand met by domestic production, places the UK at around 62% self-sufficiency, making it one of the lowest-ranking countries in the comparison set. This result aligns closely with official UK statistics. DEFRA's food production-to-supply ratio, a widely used measure of self-sufficiency, shows that domestic production accounted for 62-65% of total food supply in 2022-2023, depending on the year and valuation method used. Taken on a consistent basis, both sources confirm that the UK produces only around three-fifths of the food it consumes, with the remainder supplied through imports.

When set against international peers, this places the UK at the lower end of the developed-country distribution. Savills' analysis shows that several European countries with comparable income levels and climatic conditions achieve materially higher self-sufficiency. Countries such as France, Spain and Denmark typically meet a significantly larger share of domestic food demand from national production, supported by stronger arable and livestock output and more intensive domestic supply chains. Beyond Europe, countries such as the United States, Canada and Australia operate with self-sufficiency levels well above 100%, producing substantial surpluses for export.

Importantly, this relatively low self-sufficiency does not arise because the UK lacks the capacity to produce food. Savills' accompanying analysis shows that a **high proportion of food consumed in the UK could, in principle, be produced domestically, but that actual production falls well short of this potential, leaving imports to meet a large share of baseline demand**. The gap between potential and realised production is therefore materially wider in the UK than in many peer countries, reinforcing its dependence on international supply chains. From a food security and resilience perspective, this international comparison reframes the UK position. While the UK is not food insecure and benefits from diverse, stable trading relationships, it relies more heavily on imports for everyday consumption than many comparable economies. **This increases exposure to external shocks, trade friction and global price volatility relative to peers that meet a larger share of demand domestically.**

Viewed in this context, the policy question is not whether the UK should pursue full self-sufficiency, but whether there is scope to close part of the self-sufficiency gap by expanding domestic production in scalable categories where the UK already has strengths. International evidence suggests that countries with higher actual self-sufficiency have done so by sustaining production in core staples and protein categories rather than by attempting to replace structurally import-dependent foods.

Figure 17: Simulation of the Savill global food self-sufficiency tracker



Source: Savills Global Food Self – Sufficiency Tracker

UK food demand is shaped by demography and consumption patterns, increasing pressure on the supply balance

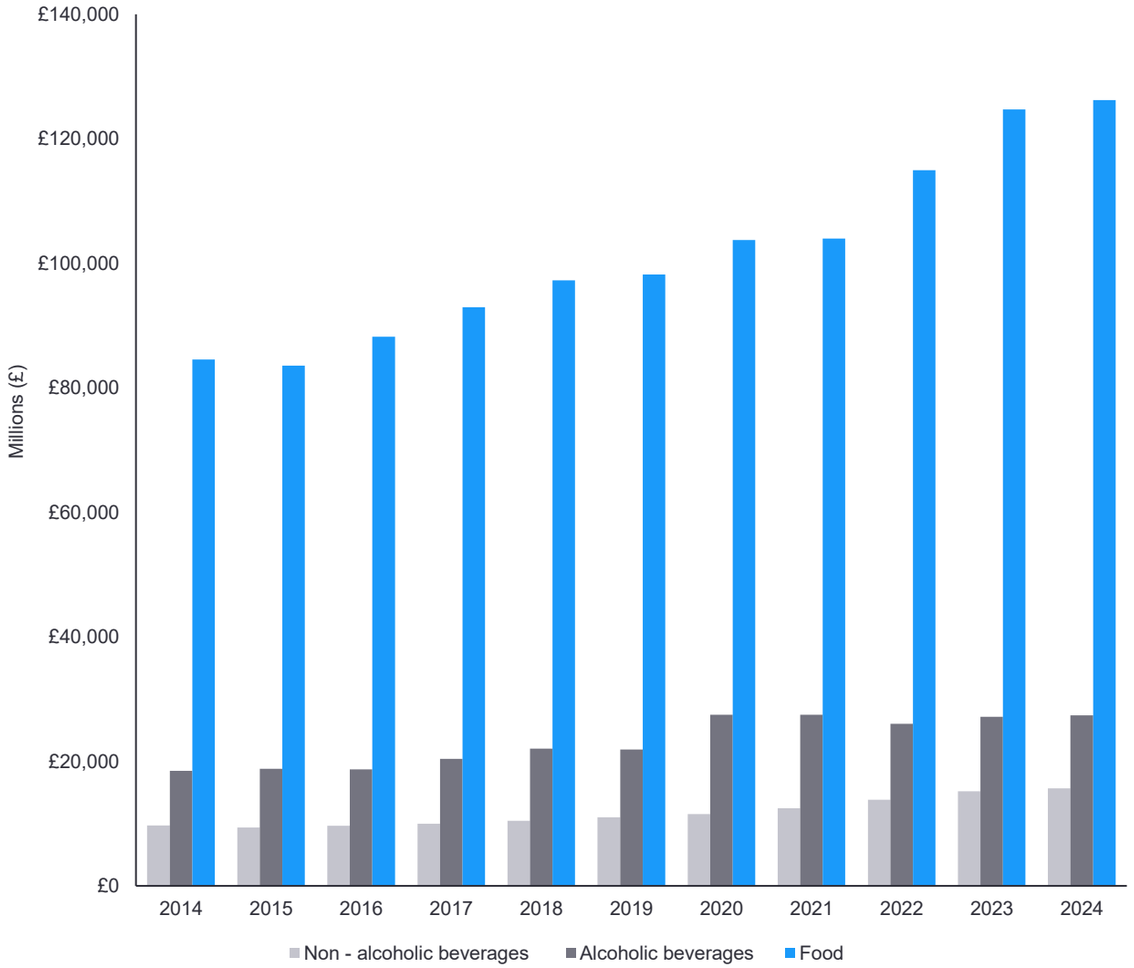
Food security is ultimately determined by whether supply can meet demand consistently and affordably. Demand pressures in the UK arise from demographic change, evolving consumption patterns and price dynamics, all of which influence the scale and composition of food required and the degree to which domestic production can satisfy that requirement. The UK Food Security Report frames Theme 2 around the sources of UK food supply, noting that maintaining a balance of consistent domestic production and robust trading relationships supports food availability and stability. Demand conditions determine the size of the "balancing item" that trade must provide when domestic supply is insufficient or misaligned with consumption needs.

A useful demand proxy is consumer expenditure on food and drink. Oxford Economics data illustrates that consumer expenditure on food and alcoholic drinks (nominal prices) was £153.63 bn in 2024, increasing 1.15% from 2023. DEFRA's food chain analysis report suggests that expenditure is split relatively evenly between food eaten out and household food consumption. This split has practical relevance to food security because it affects the configuration of demand across supply chains. Food eaten out typically relies on high levels of processing, consistent supply scheduling, and a wide variety of inputs; shifts in this pattern can amplify pressure on logistics, cold chain and manufacturing capacity even where primary production volumes are stable. Demand is also influenced by population growth. As outlined on page 30, UK population is expected to increase materially between the mid-2020s and 2050, implying a higher baseline level of food demand over time. The UK Food Security Report situates domestic supply and trade relationships within a framework that considers both slow-onset pressures and more immediate shocks, recognising that food systems must accommodate long-run demand growth while remaining resilient to disruptions in production and supply chains. **As population growth raises baseline demand, the system becomes more sensitive to constraints in domestic capacity and more exposed to disruption where import reliance is structural.**

The composition of demand interacts strongly with the UK's production profile. As previously discussed, horticulture statistics show domestic production contributes only 15% of total UK fruit supply, indicating that demand for fruit is met predominantly by imports irrespective of year-to-year domestic performance. For vegetables, the UK is closer to balance but remains import-dependent, with home production contributing around 51% of total vegetable supply in 2024. This demonstrates that the demand for fresh produce, particularly year-round availability, creates an enduring requirement for trade. In contrast, the UK has strong indigenous capability in cereals, livestock and dairy, but demand must be met against volatility in arable production and against capacity constraints in processing and logistics for livestock and dairy outputs.

Demand therefore creates two distinct pressures on UK food security. First, structural demand for categories where domestic supply is constrained (especially fruit) implies the need for resilient import channels and diversified sourcing. Second, demand for categories where domestic production can meet a large share of consumption (cereals, meat, milk and eggs) implies that resilience depends on limiting domestic volatility and ensuring that processing and supply chain capacity can translate primary production into available food.

Figure 18: UK food and drinks consumption, 2014 - 2024



Source: Oxford Economics

UK food security pressures are concentrated in a small number of high-exposure commodities and Northern Ireland plays a disproportionately important role in addressing them

The UK's food security challenge is not evenly distributed across the food system. While overall domestic production continues to meet a significant share of national demand, reliance on imports is highly concentrated in a limited number of commodity groups. These exposure points create structural vulnerabilities within UK food supply chains, particularly in the context of climate volatility, geopolitical disruption and growing population-driven demand. Understanding where these pressures are most acute is essential to identifying where NI contributes strategic value to the UK's indigenous food system.

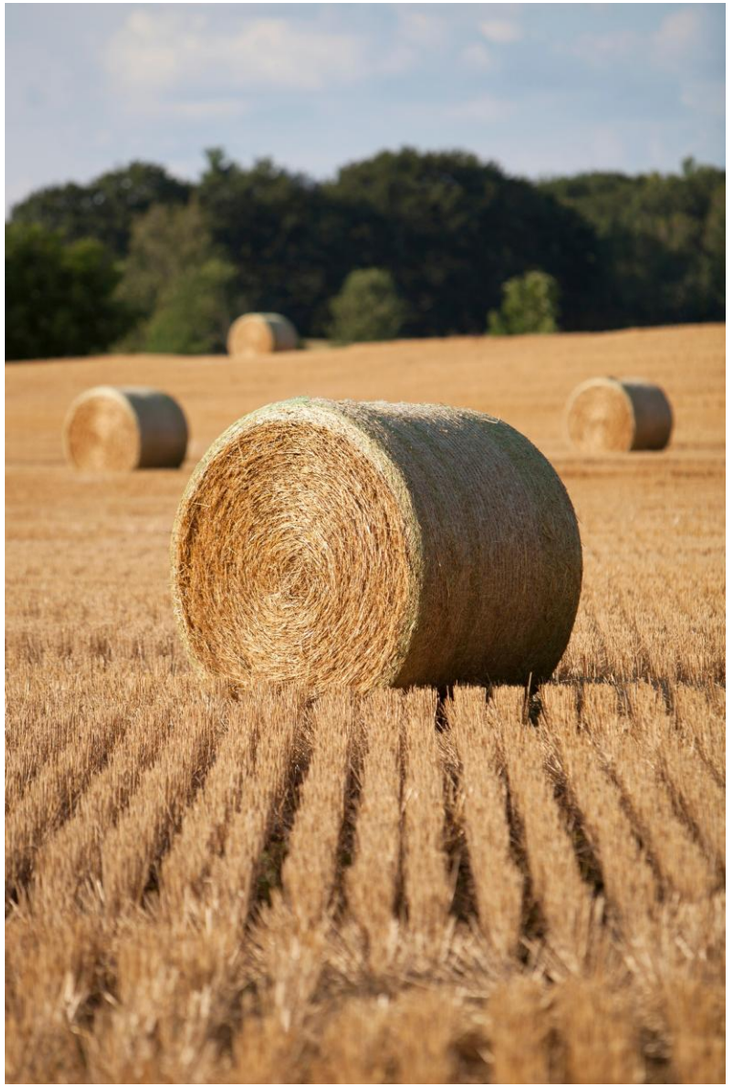
Several key exposure hotspots emerge clearly from the UK production and supply profile. Pork is one of the most import-dependent protein sources, with a substantial proportion of UK consumption met through overseas supply, predominantly from the EU. Cereals, despite being widely grown domestically, continue to require large import volumes in years of reduced yields or adverse weather, exposing the UK to global price and availability fluctuations. Fresh fruit, constrained by climatic limits, remains structurally import-reliant, underscoring the UK's dependence on external supply chains for this category. Together, these commodities represent areas where domestic supply alone provides limited insulation from international market shocks.

Against this backdrop, NI's role within the UK food system is both distinctive and strategically aligned with areas of greatest need. Although NI accounts for a relatively small share of the UK's population and overall economic output, it contributes a disproportionately large share of UK indigenous production in several critical categories. In 2024, NI produced approximately 8% of total UK domestic food output, with far higher shares in specific livestock-based commodities. NI accounts for approximately one–fifth of UK egg production, and around one–sixth of UK milk, beef and veal, and poultry output. These are precisely the categories where domestic supply is central to maintaining stability, affordability and nutritional security within the UK diet.

This alignment matters for three reasons.

- Import displacement - NI's output directly reduces the UK's exposure to imported animal proteins and dairy products, limiting reliance on international markets at times of stress.
- System resilience - NI's strong livestock production base provides diversification within the UK's food supply, lowering the risk associated with regional shocks elsewhere in Great Britain.
- Scalability and future relevance - as UK food demand grows in line with population projections, NI's production capacity, particularly in milk, eggs, poultry and beef, represents one of the most realistic domestic levers available to strengthen indigenous supply over the medium term.

The commodity-level analysis contained in the appendix examines these dynamics in detail. It first sets out the scale of UK reliance on imports across key food groups, before quantifying NI's current contribution within each category. This provides the basis for assessing where NI already underpins UK food security, where its role could expand further, and how targeted investment and policy support could amplify NI's contribution to a more stable, resilient and self-reliant UK food system.



Northern Ireland production underpins the UK's indigenous food system

UK food security pressures arise where domestic consumption consistently exceeds indigenous supply, creating a structural reliance on imports. While this supply gap varies by commodity, it is most pronounced in several protein-rich and staple food categories that are central to UK diets. NI plays a disproportionate role in narrowing this gap, not simply by producing food, but by directly offsetting the UK's need to draw on international supply chains.

At the system level, the mechanics of food security are straightforward. UK consumption demand is met by domestic production supplemented by imports, with imports acting as the residual balancing item wherever indigenous supply is insufficient. NI's output feeds directly into this domestic supply base alongside production in Great Britain. As a result, the level and stability of NI production has a one-for-one relationship with the UK's import requirement: when NI output rises, or when existing capacity is preserved during periods of pressure, the volume of food that must be sourced from international markets correspondingly falls.

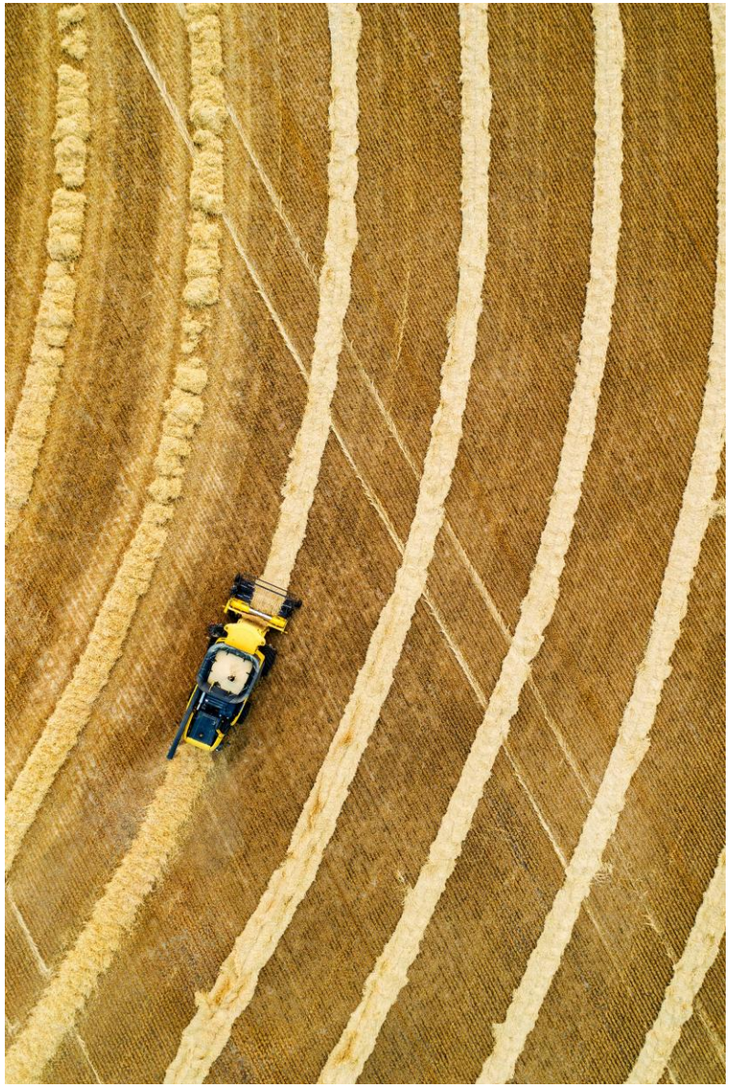
This dynamic is clearly illustrated in several commodities examined in this report. In eggs, the UK remains partially reliant on imports to meet consumption demand, yet NI accounts for almost one-fifth of total UK egg production, despite representing less than 3% of the UK population. This means that even modest changes in NI egg output translate into a measurable change in the UK's import requirement. A similar pattern is evident in milk, where NI contributes approximately 17% of UK production. UK milk consumption marginally exceeds domestic requirements in some years and relies on imports to balance regional mismatches; NI's expanding milk output therefore directly underpins national self-sufficiency and reduces exposure to external dairy markets.

The same mechanism operates in poultry and beef & veal. Poultry is the UK's largest meat category by volume and continues to rely on imports to supplement domestic supply, while beef and veal imports play a stabilising role in years of lower domestic availability. NI provides roughly one-sixth of UK production in both categories, positioning it as a structural buffer within the supply system. In these cases, NI's role is not marginal or discretionary; it is embedded within the baseline functioning of UK food supply. Each additional unit of output from NI displaces imports that would otherwise be required to satisfy consumption, strengthening indigenous supply and reducing reliance on international trade flows.

By contrast, there are commodities where UK import reliance is high but NI's production share is limited, most notably fresh fruit and, to a lesser extent, pork. In fresh fruit, climatic constraints mean that domestic production meets only a small proportion of demand, and NI's output is necessarily modest. In pork, the UK remains heavily import-dependent despite domestic production, but NI's contribution is materially smaller than in other livestock categories. These examples underline an important distinction: NI's strategic importance to UK food security is targeted rather than universal, concentrated in those commodities where it already holds a meaningful share of indigenous output.

The implication is clear. **NI does not simply add volume at the margin of the UK food system; it strengthens food security precisely where the system is most exposed.** By increasing the proportion of UK consumption met by indigenous supply, NI production reduces the scale of the domestic supply gap, improves resilience to external shocks such as global price volatility or trade disruption, and lowers dependence on long, complex international supply chains. As this report has shown, these pressures are likely to intensify as population growth increases food demand and climate variability affects production stability across the UK.

The commodity analysis that follows quantifies this relationship in detail. It shows where NI output already displaces imports at scale, where its contribution is most critical to the functioning of the UK food system, and where **targeted investment, particularly in processing capacity, productivity and supply-chain infrastructure, could further amplify NI's role in strengthening the UK's indigenous food supply.**



The UK's population is projected to grow and with this, the demand for food

The UK's population is projected to continue growing over the coming decades, placing sustained upward pressure on food demand. Data compiled by Our World in Data, drawing on the UN World Population Prospects, indicate that the UK population is projected to reach approximately 75.5 m by 2050. The population increased from 63.0m in 2010 to 69.6m by 2025, representing growth of roughly 10.4% over 15 years, and is forecast to rise by a further 8–9% between 2025 and 2050. These projections reflect a combination of net migration, improving longevity and continued (albeit slowing) population growth.

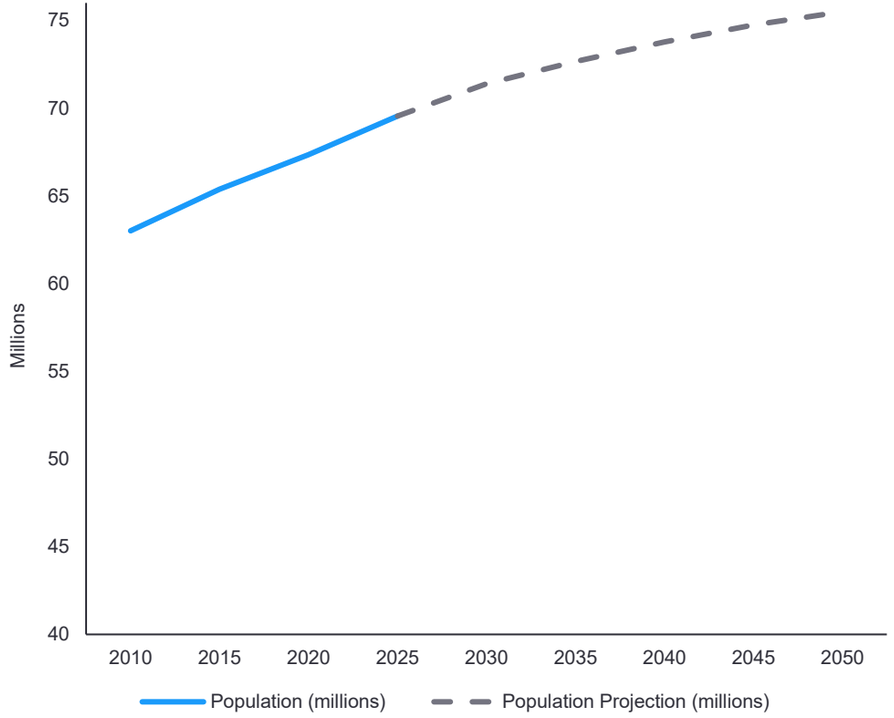
Rising population levels translate directly into increased demand for food in both volume and variety. Against this backdrop, the resilience of the UK food system depends on a balance between domestic production and imports. A previously mentioned, ONS data for 2024 shows that the UK produced just under 50m tonnes of indigenous food, while total domestic use amounted to around 64m tonnes, implying that approximately 22% of food consumed by volume was sourced from imports. While the UK's overall production-to-supply ratio has remained broadly stable in recent years, this gap highlights ongoing reliance on international supply chains to meet domestic demand.

From a food security perspective, this reliance is not inherently problematic, but it does increase exposure to global risks such as extreme weather, geopolitical disruption and trade volatility. The Food Security Report underlines that maintaining strong and consistent domestic production alongside diversified trade is central to managing these risks. **In this context, population growth amplifies the importance of safeguarding domestic productive capacity, as incremental increases in demand must be met either through higher output at home or greater import dependence.**

Northern Ireland's combination of productive agricultural land, established farming expertise and integrated agri-food supply chains means that it is structurally well placed to absorb part of the rising demand associated with population growth. As pressures on land, climate and productivity intensify elsewhere in the UK, NI's role increasingly shifts from being a regional producer to forming a core pillar within the UK's domestic food supply system. **In effect, NI production helps to narrow the gap between UK food demand and domestic supply that population growth would otherwise widen.**

Realising this potential will require coordinated and sustained investment across the food system. The Food Security Report consistently identifies productivity, infrastructure and resilience as key enablers of future food supply. **Investment in these areas would help ensure that domestic production can keep pace with demographic change while limiting additional exposure to external supply shocks. In the absence of such investment, population growth risks widening the gap between domestic supply and demand, increasing import reliance over time.**

Figure 19: UK population projection (2010 – 2050)



Source: ONS

* Our World in Data has developed its future projections based on the UN's medium-fertility scenario.

Northern Ireland's contribution to UK food security is concentrated in high-impact commodities, delivering around 8% of total UK food output by volume and just over 10% by value

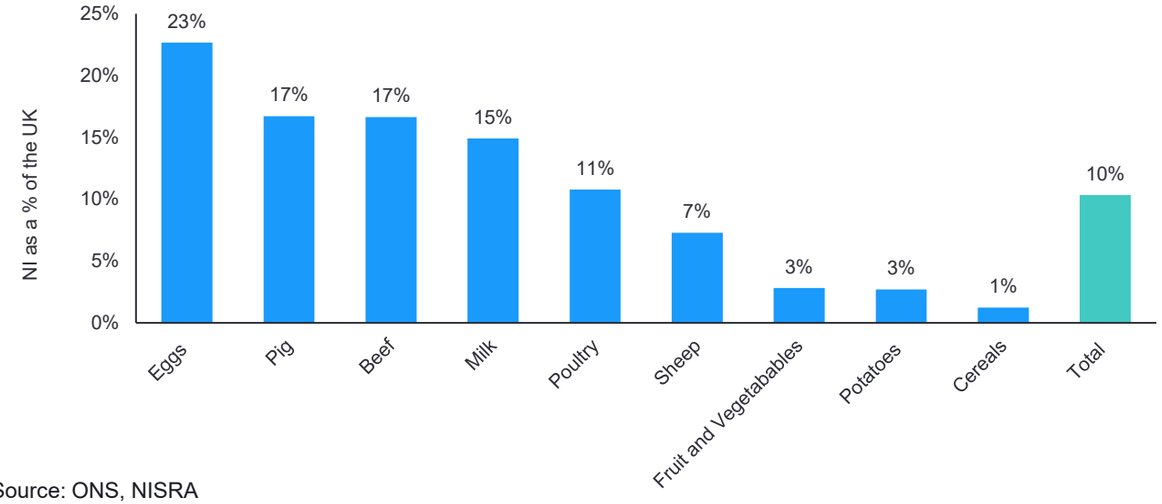
Northern Ireland accounts for approximately 8% of total UK indigenous food production by volume, despite representing less than 3% of the UK population. When measured by value, its contribution rises to just over 10% of UK domestic food production, reflecting the sector's concentration in higher-value livestock and dairy production rather than lower-value arable commodities.

This contribution is not evenly distributed across the food system. It is heavily concentrated in a small number of livestock-based commodities that are central to everyday consumption and to the resilience of domestic supply. In 2024, Northern Ireland produced around one-fifth of UK egg output and approximately one-sixth of UK milk, beef and veal, and poultry production by volume. These categories form part of the UK's core indigenous food base and are precisely those where domestic production plays the most meaningful role in limiting exposure to external supply shocks.

By contrast, Northern Ireland's share of UK production is much lower in categories where the UK is structurally import-dependent, such as fresh fruit and, to a lesser extent, arable crops. This reflects climatic and land-use constraints rather than under-performance and reinforces an important distinction: Northern Ireland's strategic importance lies not in supplying all food categories, but in underpinning those parts of the system where domestic capability already exists and matters most.

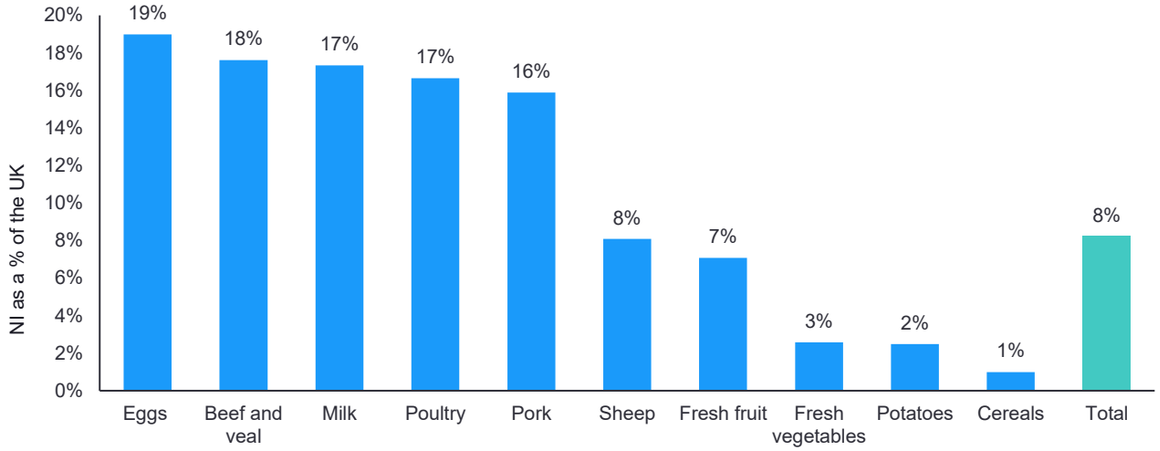
Our analysis shows that Northern Ireland's food system delivers a disproportionately high share of value relative to volume, anchoring domestic supply in high-protein and nutritionally significant commodities. As population growth and climate-related volatility increase pressure on the UK food system, this concentration strengthens resilience by supporting indigenous production where imports function as a supplement rather than the primary source of supply.

Figure 20: NI production as a % of the UK, 2023, (millions, £)



Source: ONS, NISRA

Figure 21: NI production as a % of UK, 2024 (volume)



Source: ONS, NISRA

Recent NI production trends reinforce its role in the UK domestic supply base

Northern Ireland's food production continued to expand in 2024, with overall output rising by 3% compared with 2023, driven primarily by strong growth in livestock sectors. Livestock production increased by 4% year on year, with particularly robust gains in beef and veal, eggs and milk, each of which recorded growth of between 4% and 8%. This performance indicates a sector operating close to its current productive capacity and responding well to favourable market conditions and productivity improvements. By contrast, crop production declined by 4% over the same period, with fresh vegetables, fruit and potatoes experiencing the most pronounced reductions, reflecting ongoing challenges related to land use, weather volatility and relative profitability. Together, these trends point to a sector with clear momentum but uneven capacity to scale further across commodity types.

While the underlying production base is strong, several structural constraints currently limit Northern Ireland's ability to translate this momentum into sustained, system-wide growth**. In particular, rising output in milk and poultry is placing increasing pressure on existing processing infrastructure, creating bottlenecks that risk constraining further expansion unless capacity is expanded.** Productivity improvements at farm and processor level remain uneven, with scope to increase output through wider adoption of precision agriculture, improved genetics and digital farm management tools. Skills availability also acts as a constraint, particularly in advanced processing, engineering and data-driven production roles, limiting the sector's ability to fully exploit innovation and efficiency gains. In addition, while innovation activity is present across the sector, access to coordinated research, development and scale-up support remains fragmented, slowing the diffusion of proven technologies and practices.

Targeted investment and policy support provide a clear route to unlocking this capacity. Strategic investment in processing infrastructure would allow higher volumes of domestic output to be absorbed and value-added locally, reducing the risk that farm-level gains are lost upstream. Productivity-focused support, including incentives for technology adoption and improved on-farm efficiency, would help stabilise output and make growth more resilient to external shocks. Investment in skills and workforce development would strengthen the sector's long-term competitiveness, while focused support for innovation and applied research would accelerate the uptake of new production methods across farms and processors. **Taken together, these levers demonstrate that the constraints on scaling are not structural limits to production, but investment gaps that, if addressed, would allow Northern Ireland to expand output sustainably and reinforce its strategic contribution to food security and economic growth.**

Table 2: NI production, volume

	2023	2024	YoY change (%)
Beef and veal (tonnes dcw)	153	165	8%
Pork (tonnes dcw)	144	146	1%
Mutton and lamb (tonnes dcw)	22	22	0%
Poultry ('000 tonnes lwt)	329	338	3%
Milk (m.litres)	2,527	2,620	4%
Eggs (m.doz)	177	191	8%
Livestock total production	**3,352**	**3,483**	**4%**
Cereals ('000 tonnes)	179	193	8%
Fresh fruit ('000 tonnes)	48	41	-15%
Fresh vegetables ('000 tonnes)	76	61	-19%
Potatoes ('000 tonnes)	124	116	-7%
Crop total production	**427**	**411**	**-4%**
Total production	**3,799**	**3,893**	**3%**

Source: NISRA

Northern Ireland dairy underpins UK food security through scale, resilience and sustained growth

Northern Ireland's dairy sector provides a clear, evidence-based illustration of the region's strategic importance to UK food demand and supply resilience. In 2025, Northern Ireland produced 2.8bn litres of milk, up from 2.6bn litres in 2024, representing year-on-year growth of approximately 8%. This rate of growth outpaced that observed across Great Britain during the same period and reflects sustained expansion in NI output through both seasonal and structural drivers.

DAERA milk production statistics indicate that this output accounted for 17–18% of total UK milk production, despite Northern Ireland comprising less than 3% of the UK population. This positions NI as a material contributor to the UK's domestic dairy base, both in absolute volumes and in proportional terms, underscoring its systemic relevance within UK food supply chains.

This performance is particularly significant in the context of broader UK dairy trends. Across Great Britain, the milking herd has continued to contract, with AHDB reporting that the GB herd fell to its lowest level on record in 2025, alongside a sustained reduction in the number of active dairy farms. While GB milk volumes have been maintained in recent years through higher yields per cow, this has occurred against a backdrop of structural pressure, including farmer exits, ageing herds and tighter environmental regulation. In contrast, Northern Ireland has not only offset these headwinds but has expanded output in absolute terms, increasing its relative contribution to the UK milk pool.

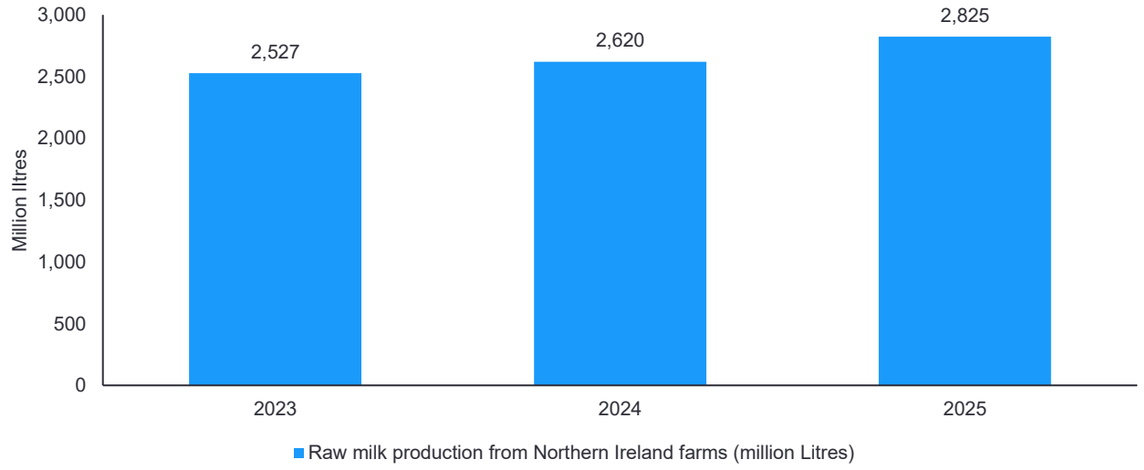
Northern Ireland's ability to grow production in this environment reflects productivity-led expansion rather than herd expansion alone. Evidence from DAERA and AHDB points to sustained improvements in milk yields per cow, driven by advances in genetics, herd management, feeding systems and on-farm efficiency. Over the past decade, average yields in NI have risen materially, allowing farmers to increase milk output while moderating growth in cow numbers and optimising the use of land and inputs. This productivity-based growth model has enabled NI dairy to strengthen supply without proportionately increasing environmental or resource pressures, improving both economic and emissions intensity performance relative to historical norms.

From a food security perspective, this matters for two reasons. First, milk and dairy products sit within the UK's indigenous food categories, where domestic production materially reduces reliance on imports. DEFRA data show that the UK is broadly self-sufficient in milk on a volume basis, with a production-to-supply ratio of 105%, but this performance depends on the continued availability of reliable domestic supply. Second, as production constraints emerge elsewhere in the UK, through herd contraction, environmental limits or labour pressures, Northern Ireland's expanding dairy output increasingly functions as a stabilising component of the national supply system, reducing exposure to volatility in global dairy markets and supporting downstream processors.

However, the pace of growth has begun to expose constraints within dairy processing infrastructure. AHDB, UFU and industry commentary consistently highlight that rapid increases in milk volumes have placed pressure on existing processing capacity in NI, with some facilities operating close to throughput limits during peak production periods. Where capacity is constrained, excess milk must either be diverted, moved longer distances, or absorbed at lower margins, reducing the economic return to producers and dampening the wider food security benefits of increased farm-level output.

Sustaining and maximising the contribution of NI dairy therefore requires strategic investment in processing and value-adding capacity, alongside continued support for productivity at farm level. Targeted investment would allow higher milk volumes to be absorbed efficiently, converted into higher-value products, and integrated more fully into UK and export supply chains. In the absence of such investment, there is a risk that processing bottlenecks, rather than farm capability, become the limiting factor on growth. Overall, NI dairy illustrates how regional production strength can translate directly into national food system resilience, but only where upstream production and downstream processing remain aligned. Ensuring that alignment is maintained will be critical to securing NI's role as a long-term pillar of the UK food supply and to maximising the economic and food security returns from the sector's continued growth.

Figure 22: NI Milk Output, 2023 - 2025



Source: NISRA

In contrast, reductions in cropped area and yield are weakening crop output in Northern Ireland

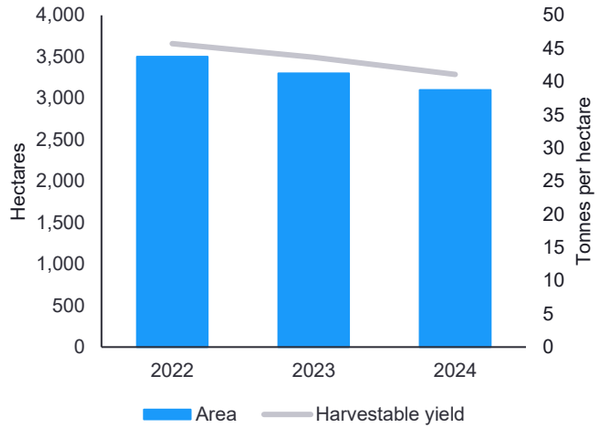
In contrast to the strong performance of livestock sectors in 2024, crop production in Northern Ireland weakened, reflecting a combination of reduced planted area and pressure on yields. Official DAERA statistics confirm that the total agricultural area cropped in NI continued its downward trend in 2024, falling by 2.1% year on year from 2023, with the contraction most evident in potatoes and cereals. This divergence reinforces the structural tilt of NI agriculture towards livestock-based production systems.

Potato production provides the clearest illustration of these challenges. DAERA crop statistics show that total saleable potato output in Northern Ireland fell from approximately 139,500 tonnes in 2022 to 115,500 tonnes in 2024, a reduction of around 17.2% over two years. This decline was driven by both a contraction in the planted area and weaker yields per hectare. In 2022, potatoes were grown on roughly 3,500 hectares, delivering average yields of around 46 tonnes per hectare. By 2024, the planted area had declined to approximately 3,100 hectares, while average yields fell to 41 tonnes per hectare. This equates to an 11% reduction in planting area and a 10% decline in yield per hectare, compounding to produce a materially lower total harvest. DAERA attributes these outcomes primarily to a mix of reduced grower participation and adverse growing conditions affecting crop performance. Given that potatoes represent one of the most significant field-scale horticultural crops in Northern Ireland, this contraction has wider implications for domestic supply and farm income diversification. Reduced output increases reliance on external sourcing and limits the scope for crop rotations that support soil health within predominantly livestock-based systems.

A similar pattern is evident across the cereal sector. According to the 2024 Agricultural Census, the total cereal area grown in Northern Ireland declined by 4.6% between 2023 and 2024, continuing a longer-term trend of land moving out of tillage and into grass or forage. Wheat production faced compounded pressures. The area under wheat declined from approximately 8,600 hectares in 2022 to around 8,000 hectares in 2024, while yields weakened from around 8 tonnes per hectare to 7 tonnes per hectare. DAERA and DEFRA both note that poor establishment conditions and excess rainfall during critical growing periods affected winter cereal performance across the UK, including Northern Ireland.

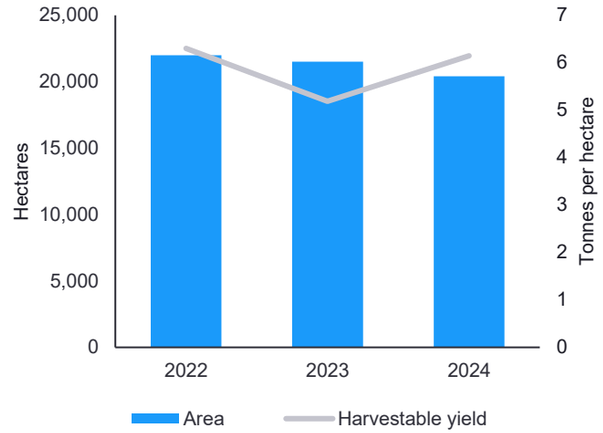
The combined decline in cropped area and output highlights a structural weakening of tillage within Northern Ireland's agricultural system. This has implications beyond farm-level profitability, including reduced domestic supply of starchy carbohydrates and feed grains, greater import reliance, and fewer rotational benefits for soil and environmental management. DAERA and DEFRA analysis of 2024 cropping outcomes consistently points to wet weather, rising input costs and relative returns as key drivers of reduced planting, particularly when set against the stronger performance of livestock sectors. In this context, targeted policy intervention is likely to be required to stabilise crop production capacity.

Figure 23: Potato production and yield, 2022 - 2024



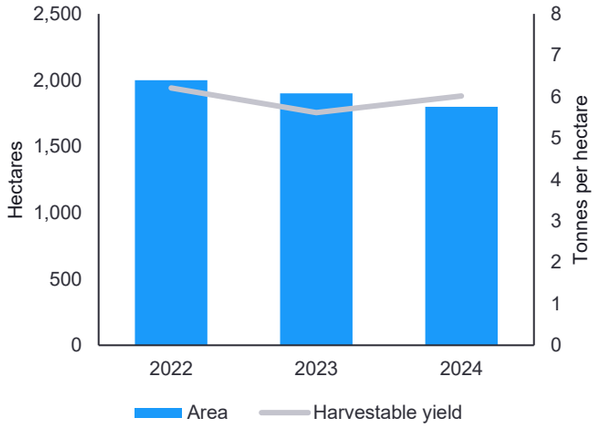
Source: NISRA

Figure 24: Barley production and yield, 2022 - 2024



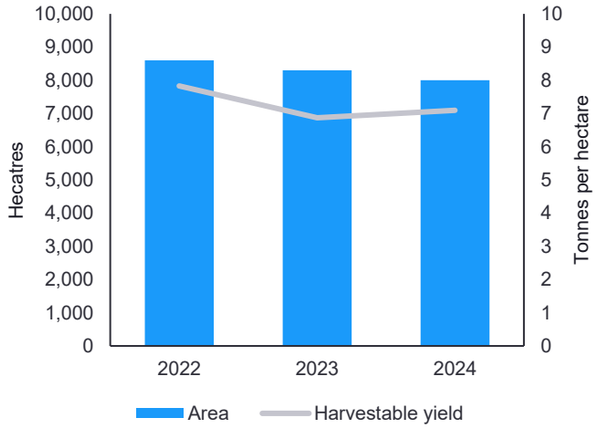
Source: NISRA

Figure 25: Oat production and yield, 2022 - 2024



Source: NISRA

Figure 26: Wheat production and yield, 2022 - 2024



Source: NISRA

Key insights: UK food security and Northern Ireland's strategic role

UK food security reflects structural reliance on trade rather than short-term under-performance
The UK consistently produces a significant share of indigenous food but remains structurally import-dependent, particularly for fruit, vegetables and some proteins. The production-to-supply ratio has stabilised around 60–65%, indicating a long-run equilibrium shaped by consumption patterns, climate and economic trade-offs rather than cyclical weakness.

Import dependence is concentrated in a small number of food groups
Structural reliance on imports is most pronounced in fresh fruit and, to a lesser extent, vegetables and pork. In contrast, cereals, milk, eggs and several meat categories retain strong domestic production bases, with imports acting primarily as a buffer against volatility rather than the main source of supply.

Northern Ireland contributes disproportionately in commodities critical to UK resilience
Northern Ireland produces a materially higher share of UK output in eggs, milk, poultry, and beef and veal than its population share would suggest. These are categories where domestic production is central to everyday consumption and where retaining indigenous supply capacity has the greatest food security value.

NI's contribution moderates UK exposure at the margin rather than eliminating import reliance
The analysis shows that Northern Ireland does not offset UK import dependence across all food categories. Its strategic importance lies in narrowing the domestic supply gap in products where UK production already plays a stabilising role, rather than in structurally import-dependent sectors such as fruit.

Population growth increases the strategic value of existing domestic capacity
Projected growth in the UK population raises baseline food demand over the long term. In this context, regions capable of sustaining and scaling indigenous production in core commodities carry increasing system importance, as incremental demand must otherwise be met through higher imports.

Recent production trends reinforce both opportunity and constraint
Livestock-based output in Northern Ireland expanded in 2024, driven by dairy, eggs and poultry, while crop production weakened due to weather, land-use shifts and profitability pressures. This divergence highlights the sector's strengths in protein-rich foods alongside emerging bottlenecks in processing capacity and input systems.

Food security risks are shaped by volatility and capacity
Weather disruption, input cost volatility and processing constraints increasingly shape food security outcomes. Northern Ireland's role is most significant where its production base supports consistency and resilience in domestic supply chains, rather than maximising overall self-sufficiency.

7

Sectorial Impacts and Future Growth

Sustainability-driven innovation creates scope to raise productivity and strengthen resilience while price volatility remain key constraints on this transition in the short to medium term

Northern Ireland's food and drink manufacturing and agriculture sectors are currently operating against a backdrop of broadly supportive demand fundamentals, but within an increasingly complex operating environment. **Population growth across the UK and ROI is expected to sustain demand for food over the medium term, reinforcing the strategic importance of domestic production and processing.** However, the extent to which this demand translates into sustainable economic value depends less on volumes alone and more on how effectively the sector manages costs, adapts to environmental constraints, and captures productivity gains over time. The ability to deliver these gains is also influenced by the efficiency of planning processes, which shape whether productivity-enhancing and emissions-reducing investments can be implemented at pace. It is within this context that the scenarios set out in the following slides are framed.

A central opportunity facing the sector lies in innovation-led productivity improvement, particularly where this aligns with sustainability objectives. Across food and drink manufacturing, energy use and process heat remain fundamental operational requirements, and many facilities continue to rely on gas-based systems. Advances in energy efficiency, heat recovery, electrification and alternative low-carbon fuels therefore represent a significant opportunity to improve emissions performance while also strengthening long-term competitiveness. These investments can reduce exposure to volatile wholesale energy markets and improve cost control at site level. However, their economic and environmental impact depends on timely delivery. **Where planning processes are efficient and predictable, sustainability-focused innovation functions not only as a regulatory or environmental response, but as a practical driver of productivity and value creation.**

In primary agriculture, the opportunity set is similarly centred on improving efficiency rather than expanding output volumes. Innovation in nutrient management, precision application, genetics, feed conversion and manure handling can reduce emissions intensity per unit of output while stabilising input use and operating costs. These changes are particularly relevant given the growing emphasis placed by processors and retailers on environmental performance throughout the supply chain. Sustainability is progressively becoming a condition of market access (as opposed to attracting premium pricing), with buyers embedding carbon and environmental metrics into procurement frameworks. For NI producers and processors, **demonstrating credible progress is therefore closely linked to maintaining competitiveness in both domestic and export markets.**

A number of material risks shape the downside case explored later. Energy price volatility remains a persistent source of uncertainty for food and drink manufacturing, reflecting wider geopolitical developments, supply constraints and market dynamics. Even as prices have eased from recent years peaks, energy costs remain elevated by historical standards and subject to rapid change. For a sector characterised by relatively tight margins, sustained energy price uncertainty can weaken the business case for investment, particularly where decarbonisation and efficiency upgrades require upfront capital and offer paybacks over longer horizons.

Input cost volatility is a further structural risk. Fertiliser prices are closely linked to natural gas markets and are heavily influenced by geopolitical developments, trade policy, export restrictions and sanctions in global markets. As a result, fertiliser costs can remain elevated and unpredictable, complicating farm budgeting and planning. Where commodity market structures limit the ability to pass increased costs through to prices, sustained input cost inflation can erode margins even when output levels are maintained. This dynamic is a core feature of the downside scenario and helps explain why value added can deteriorate without an accompanying fall in production volumes.

Environmental constraints add an additional layer of pressure. Agriculture remains the single largest source of greenhouse gas emissions in Northern Ireland, and statutory emissions-reduction targets provide a clear long-term signal on the direction of travel for the sector. These targets create both incentive and imperative for change. Under an innovation-led pathway, productivity improvements and emissions reductions can reinforce one another, supporting higher value creation and more resilient supply chains. Under a cost-pressure pathway, however, investment may be deferred. **Where delays arise, including through lengthy or uncertain planning processes, this can amplify downside risk by prolonging reliance on higher-impact practices,** increasing exposure to future regulatory, buyer and compliance pressures, and raising the likelihood that adjustment is more abrupt and disruptive at a later stage.

The implications of these dynamics are strongly spatial and community-based. Food and drink manufacturing and agriculture are deeply embedded in rural and semi-rural economies across Northern Ireland, with processing facilities, logistics operations and primary production often co-located. Where productivity-led innovation is realised, the benefits extend beyond individual firms, strengthening upstream linkages, supporting local service sectors and reinforcing employment stability even without large increases in headcount. Conversely, sustained margin compression driven by energy and input costs weakens these local spillovers, dampening household incomes and service demand and gradually eroding economic resilience in towns and communities that are highly dependent on the food system.

These risks and opportunities underline why future performance cannot be assessed through a single forecast. Instead, this analysis utilises an upside and downside scenario to explore, in a simplified and illustrative way, how alternative operating conditions could affect the economic contribution, spillover effects and resilience of Northern Ireland's food and drink manufacturing and agricultural sectors. Innovation and sustainability-linked investment represent a plausible pathway towards improved productivity and value capture, while sustained cost pressures and geopolitical uncertainty pose a credible risk to margins and wider spillovers. The scenarios that follow are framed as stylised "what-if" tests rather than predictions, designed to illustrate the direction of travel and relative sensitivity of outcomes within the existing economic structure.

The scenarios explore how changes in key parameters could affect outcomes and indicate direction of impact rather than detailed, evidence-weighted projections

The scenarios, upside and downside, explore how changes in operating conditions could affect the economic contribution, spillover effects and resilience of Northern Ireland's food and drink manufacturing and agricultural sectors. The scenarios are designed to provide context and directional insight, rather than forecasts, and are intended to support interpretation of future risks and opportunities rather than predict specific outcomes.

The assumptions applied are not intended to represent firm predictions, consensus projections or outcomes derived from a detailed review of empirical literature. Instead, they are deliberately simplified and stylised, designed to test how the economic system responds when key parameters move in one direction or another. As such, the scenarios should be interpreted as showing the direction of travel and relative sensitivity of impacts, rather than precise magnitudes under tightly defined real-world conditions.

Each scenario is modelled as a steady-state representation, reflecting how the economy might look once the assumed conditions have fully worked through the system. Transitional pathways, adjustment dynamics and year-by-year changes are not modelled. The results therefore illustrate alternative equilibrium outcomes relative to a common baseline year, enabling consistent comparison of impacts on GVA, employment and wider spillovers.

The scenarios are parameter-based, with changes applied only to a limited set of high-level inputs. Specifically, the scenarios allow for changes in revenues and output, cost structures and profitability, and labour cost intensity. In the upside case, these adjustments reflect productivity-led improvements and enhanced value capture. In the downside case, they reflect sustained cost pressures and margin compression. Detailed firm-level behaviour is not modelled, nor are technology adoption pathways or sector-specific transformation dynamics.

Both scenarios are anchored to the same input-output (IO) structure as the baseline. The underlying sectoral relationships and inter-industry dependencies that govern how activity flows through the economy are held constant. This ensures that differences between the baseline and scenario results are driven solely by the assumed parameter shifts, rather than changes to the structural composition of the economy.

A number of parameters are explicitly held constant across all scenarios. Economic multipliers are unchanged, sectoral IO relationships are fixed, and the balance between Northern Ireland and non-Northern Ireland sourcing and leakages remains the same. The scenarios therefore do not assume structural reshoring, localisation of supply chains, changes in trade regimes, or behavioural responses beyond those captured through the high-level parameter adjustments.

The scenarios should be interpreted as stress tests of value creation and resilience within the existing economic structure, rather than projections of structural transformation or detailed policy impacts. Their purpose is to illustrate how upside and downside conditions could propagate through the current system, providing a consistent and transparent framework for interpreting future risks, opportunities and sensitivities in the analysis that follows.

Upside scenario: productivity-led growth through sustainability-linked innovation

Context

Across food and drink manufacturing, sustainability-linked innovation is most often associated with improvements in productivity rather than expansion in workforce or capacity. Investments in energy efficiency, process optimisation, digital monitoring, automation and waste reduction reduce unit costs, improve asset utilisation and strengthen operational resilience. Evidence from industry case studies and sector reviews indicates that these improvements primarily raise value added per unit of output, rather than driving large increases in production volumes or employment.

Scenario description

The productivity-led upside scenario assumes NI's food and drink manufacturing sector progressively embeds sustainability-driven operational improvements across processing and manufacturing activities. These improvements translate into modest increases in effective output and stronger profitability, reflecting reduced energy and input intensity and improved utilisation of existing assets. The scenario does not assume structural change to the sector, incremental capacity, or significant additional labour input.

Assumptions (uplifts relative to baseline)

- **Revenues/output**: a 3% increase, reflecting higher effective output through improved uptime, reduced waste and better yield rather than volume expansion.
- **Operating margins**: a 2 percentage point improvement, driven by lower unit energy and input costs and more efficient production processes.
- **Direct employment**: held constant, consistent with evidence that productivity gains in food manufacturing typically reduce labour intensity per unit of output rather than increasing headcount.
- We have kept wage costs and supply chain costs exogenous in the model and have reflected the impacts of this through operating margins to avoid misinterpretation of nominal outcomes.

Results

Upside scenario	
Direct GVA	1.1%
Direct employment	0.0%

In interpreting the scenario results, it is important to note the impact assessment focuses on changes in direct GVA and direct employment only, rather than reporting full economy-wide multipliers for the scenario cases. This is a deliberate methodological choice reflecting the use of a nominal Input–Output (IO) framework. In IO models, changes to wages, margins or intermediate input costs mechanically feed through to indirect and induced effects via price and income channels, even where there is no corresponding change in real activity or supply-chain structure. As a result, scenario-driven cost or efficiency adjustments can artificially dampen or amplify downstream GVA and employment estimates, purely as a function of accounting relationships rather than genuine changes in economic linkages. In the upside scenario, for example, efficiency-driven reductions in unit costs would reduce measured supply-chain expenditure and household income, mechanically lowering indirect and induced effects despite an improvement in real productivity.

Analysis of results

The upside scenario illustrates how sustainability-linked innovation can deliver measurable economic benefits for Northern Ireland's food and drink manufacturing sector, even when applied conservatively and without assuming structural change or workforce expansion. The scenario is intentionally framed around modest, operationally realistic uplifts, including an increase in effective output and an improvement in operating margins, while holding direct employment constant. This reflects the established characteristics of food manufacturing, where innovation most often manifests through efficiency gains, reduced waste, improved process control and higher asset utilisation rather than increases in headcount.

Under these assumptions, the modelling indicates a 1.1% increase in direct GVA, with no change in direct employment. The scale and composition of this result are instructive and demonstrate that the economic upside associated with productivity-led transformation is primarily realised through higher value added per unit of output rather than through increased labour demand. In effect, the scenario captures a shift in the quality of economic contribution, with stronger productivity and margin performance enhancing value creation within the existing employment base.

Importantly, the significance of the upside scenario extends beyond what is captured through direct GVA and employment metrics. **Many of the most consequential benefits of sustainability-linked innovation are structural and strategic in nature and sit outside a static economic impact framework.** Improvements in energy efficiency, process optimisation and waste reduction lower emissions intensity per unit of output, supporting environmental objectives while easing regulatory pressure. These changes also reduce exposure to energy price volatility and operational disruption, strengthening resilience in a sector characterised by tight margins. In addition, sustainability-linked investment builds longer-term innovation capability. Enhanced monitoring, digitalisation and management practices support continuous improvement, quicker diffusion of best practice and greater readiness to adopt future technologies. These capabilities reinforce long-term competitiveness, help protect market access as sustainability requirements tighten, and improve the sector's attractiveness to investment. As such, the upside scenario should be read as a conservative lower bound on the benefits of productivity-led, sustainability-aligned transformation, with the quantified GVA uplift accompanied by broader, unmodelled gains that enhance the long-term resilience and strategic positioning of Northern Ireland's food and drink manufacturing sector. Further details can be found in the appendix.

Downside scenario: cost pressure and margin compression

Context

Across food and drink manufacturing and agriculture, operating margins are structurally tight and have been under sustained pressure in recent years from energy volatility, feed and fertiliser inflation, and rising labour and regulatory costs. At the same time, retail price sensitivity and competitive market conditions have limited firms' ability to pass these cost increases fully through to customers. Evidence from recent periods of cost shock suggests that, when such pressures persist, businesses initially absorb impacts through reduced profitability, with labour adjustments emerging gradually where margins remain compressed.

Scenario description

The cost-pressure downside scenario assumes Northern Ireland's food and drink manufacturing and agricultural sectors maintain broadly stable output volumes, but experience sustained input cost inflation that cannot be fully passed through. Rising energy, feed and other operating costs compress margins and reduce value added per unit of output. As cost pressures persist, firms respond through a combination of efficiency measures, reduced discretionary spending and limited labour adjustment. The scenario does not assume a collapse in demand or production but reflects a prolonged period of margin pressure within the existing economic structure.

Assumptions (uplifts relative to baseline)

- **Revenues/output**: held broadly flat, reflecting stable production volumes despite adverse cost conditions.
- **Operating margins**: -2pp reflecting higher unit energy, feed and input costs and limited pricing flexibility.
- **Direct employment**: modestly reduced by 1.5%, reflecting incremental workforce adjustments as firms respond to sustained margin pressure, building on cost pressures already experienced across the sector in recent years rather than a sharp contraction or restructuring.
- We have kept wage costs and supply chain costs exogenous in the model and have reflected the impacts of this through operating margins to avoid misinterpretation of nominal outcomes.

Results

Downside scenario	
Direct GVA	-1.1%
Direct employment	-1.5%

Analysis of the downside scenario results

The downside scenario illustrates how sustained cost pressure can translate into a material weakening in the economic contribution of Northern Ireland's food and drink manufacturing sector, even in the absence of a significant reduction in output volumes. Under the scenario assumptions, the modelling indicates a 1.1% decline in direct GVA, alongside a 1.5% reduction in direct employment. These results capture the combined effects of margin compression and gradual labour adjustment in a sector characterised by low operating margins and limited flexibility to absorb prolonged increases in input costs.

The reduction in direct GVA reflects a deterioration in value added per unit of output, rather than a contraction in production itself. Persistent pressure from energy, labour and other operating costs erodes profitability where the ability to pass costs through is constrained. In this context, the GVA impact highlights the sensitivity of the sector's economic contribution to sustained cost inflation, particularly when efficiency-enhancing or value-adding investment is delayed or foregone.

The employment effect, while modest in scale, is economically meaningful. A 1.5% decline in direct employment is consistent with observed adjustment mechanisms in food manufacturing, where firms respond to prolonged margin pressure through incremental actions such as reduced overtime, delayed recruitment, consolidation of roles and selective redundancies rather than abrupt workforce reductions. The lagged and cumulative nature of this adjustment is important, as it indicates that employment impacts emerge gradually as cost pressures persist, rather than as an immediate response to short-term shocks.

The downside scenario does not imply a collapse in activity but instead illustrates how sustained pressure can weaken the sector's economic footprint over time through lower value creation and modest but persistent job losses. This matters from a strategic perspective, as even relatively small percentage declines in GVA and employment can have disproportionate effects in a sector that is deeply embedded in local economies and supply chains. Beyond the quantified impacts, the downside scenario signals wider risks that are not fully captured in conventional economic metrics. Continued margin compression reduces firms' capacity and willingness to invest in productivity, sustainability and skills, increasing vulnerability to future shocks and raising the likelihood of more abrupt adjustment at a later stage. Further details can be found in the appendix.

Future demand, environmental trade offs and community impacts

Over the medium term, projected population growth across the UK and the Republic of Ireland is expected to sustain and gradually increase underlying demand for food and drink products. This trend is particularly relevant for Northern Ireland given its existing strengths in livestock-based production, dairy processing, and integrated cross-border supply chains. Over a five-to-ten year horizon, rising demand is likely to place continued pressure on food volumes, processing capacity and logistics systems, reinforcing the strategic importance of reliable, scalable and efficient domestic production. However, population-driven demand growth alone does not determine the scale or quality of economic contribution; instead, it interacts with productivity performance, cost structures and value retention across supply chains.

Under the productivity-led upside scenario, future demand growth provides a platform against which investment in sustainability, innovation and process efficiency can translate into higher output and value added without proportional increases in employment. Improvements in energy efficiency, automation, waste reduction and input optimisation allow firms to meet growing demand while stabilising labour requirements and improving margins. From a system perspective, this implies a shift towards higher value creation per unit of output, with processing and manufacturing activity becoming more capital- and knowledge-intensive while maintaining strong linkages to primary production and logistics. **Where planning processes and frameworks function efficiently and predictably, these investments can be brought forward in a timely way, enabling continuous capacity renewal and reinforcing both economic performance and environmental outcomes.**

In contrast, the cost-pressure downside scenario illustrates a different interaction with future demand. Even where population growth supports stable output volumes, sustained input cost inflation and limited pricing flexibility constrain firms' ability to invest and capture value. Where investment is deferred, including as a result of lengthy or uncertain planning processes, downside risks are amplified. **Delays can prolong reliance on higher-impact infrastructure and operating practices, weakening the transmission of demand growth into higher GVA as profitability deteriorates and spillover effects are dampened.** In this context, demand growth mitigates more severe contraction but does not offset the erosion of economic value, highlighting the distinction between volume resilience and value resilience.

Environmental considerations are closely intertwined with these dynamics. The productivity-led upside scenario is broadly aligned with environmental objectives, as efficiency gains reduce emissions intensity per unit of output and support shorter, more integrated supply chains. Increased domestic processing and local sourcing reduce transport intensity and reliance on imported inputs, reinforcing both environmental performance and local economic multipliers. **Over time, this pathway supports a gradual decoupling of growth in economic contribution from growth in resource use, consistent with the sector's wider sustainability ambitions.**

By contrast, under prolonged cost pressure, firms may respond by altering sourcing patterns, deferring sustainability-related investment, or relying more heavily on externally sourced inputs where these offer short-term cost relief. Where planning delays constrain investment in lower-impact alternatives, such responses risk becoming embedded rather than transitional. **While such responses can help stabilise production, they risk increasing transport-related emissions, weakening traceability and reducing local value retention.** Although these environmental impacts are not explicitly quantified within the economic model, the scenarios illustrate qualitatively how sourcing and cost decisions shape both economic and environmental outcomes.

The community and regional implications of these scenarios are uneven and highly place-specific. Baseline analysis shows that the food and drink sector's spillovers are deeply embedded in rural and semi-rural economies through farming, processing, haulage, storage and a wide range of support services. In the productivity-led upside scenario, these areas benefit disproportionately from strengthened indirect and induced effects, even in the absence of significant direct employment growth. **Higher value activity sustains demand for local services, reinforces logistics and processing clusters, and contributes to employment stability across a broader set of sectors.**

Under the downside scenario, however, margin compression and weakened spillovers are felt more acutely in these same communities. While direct employment may initially be maintained, reduced profitability and constrained wage growth dampen indirect and induced effects, **leading to a gradual erosion of economic resilience in towns and communities that are closely tied to food and drink supply chains.** These impacts emerge through service sectors and consumption effects rather than immediate job losses, making them less visible but economically significant over time.

Overall, the scenarios, while illustrative, demonstrate that future demand growth creates both opportunity and exposure for Northern Ireland's food and drink sector. The extent to which this demand translates into sustained economic, environmental and community benefits depends on productivity outcomes, cost resilience and the ability to retain value locally. **Rather than prescribing a single outcome, the analysis highlights trade-offs and interaction effects that shape the sector's future trajectory, providing a structured foundation for the policy pathway, strategic choices and sustainability positioning explored in the next section.**

Key insights: Risks, opportunities and trends

Future performance is shaped more by productivity and cost resilience than by demand alone.

Underlying food demand is expected to remain supportive due to population growth across the UK and Ireland. However, volume resilience does not automatically translate into economic value. Outcomes diverge sharply depending on whether firms can raise productivity and retain value, or whether rising costs continue to erode margins.

Sustainability-linked innovation acts as a productivity lever, not a growth-in-headcount strategy

In food and drink manufacturing, sustainability investments are most plausibly expressed through improved efficiency, reduced waste and lower unit energy and input costs. The upside scenario illustrates that meaningful economic gains can be achieved through higher value added per unit of output, even where employment and capacity remain broadly stable.

Cost pressure represents a credible downside risk even without a fall in output

The downside scenario demonstrates that sustained energy and input cost inflation, combined with limited pricing power, can reduce GVA and employment despite stable production volumes. Margin compression, rather than demand collapse, is the primary transmission channel through which economic contribution weakens.

Environmental constraints increasingly shape economic outcomes

Emissions obligations, ammonia pressures and tighter regulatory requirements mean that future competitiveness is increasingly conditional on improvements in emissions intensity. Under a productivity-led pathway, environmental and economic objectives reinforce one another; under prolonged cost pressure, deferred investment heightens exposure to future compliance and adjustment risk.

Economic and community impacts extend beyond direct jobs

The food and drink system is deeply embedded in rural and semi-rural economies. Productivity-led outcomes strengthen indirect and induced effects across logistics, services and local supply chains, even without large employment growth. Conversely, margin erosion dampens these spillovers over time, weakening local economic resilience before significant job losses become visible.

Scenario results should be read as directional signals, not forecasts

The upside and downside scenarios are deliberately stylised tests of sensitivity within the current economic structure. They illustrate the direction and relative scale of impacts rather than predicting outcomes, helping frame the strategic choices and trade-offs that will influence the sector's trajectory.

8

Strategic System View

The agri-food system is an anchor of local economies, with NIFDA and its members at its core

Northern Ireland's agri-food system plays a structurally important role in supporting local economies through its deep integration of primary agriculture, food and beverage manufacturing, logistics and related services. At the centre of this system sit NIFDA and its member companies, which collectively translate agricultural production into higher-value economic activity, stable employment and wide-reaching local supply chains. Through their geographic spread, scale and integration in communities, NIFDA members act as the operational backbone of a production system that underpins economic life across many towns and rural areas, particularly outside the Belfast metropolitan area.

Agriculture provides the land-based foundation of the system, shaping rural settlement patterns, labour markets and land use. Northern Ireland's farming base is extensive and widely dispersed, supporting a large number of farm businesses and workers embedded in local communities. However, the economic significance of this activity is realised most fully through its connection to food and beverage manufacturing. NIFDA members occupy this critical interface between farm and market, transforming primary outputs into processed food and drink products for consumers in Northern Ireland, Great Britain, Ireland and international markets. This processing capacity anchors demand for agricultural produce while extending value creation beyond the farm gate.

Food and beverage manufacturing plays a decisive role in amplifying the local economic impact of agriculture. Firstly, it supports job quality and progression, with processing and manufacturing roles typically offering more structured contracts, clearer skills pathways and opportunities for advancement over time. Secondly, it generates strong local spillovers by sustaining demand for transport, engineering, packaging, maintenance, professional services and utilities, much of which is sourced from surrounding areas. NIFDA members are therefore not only large employers in their own right, but also key customers for a dense ecosystem of small and medium-sized enterprises that rely on agri-food activity.

This system-level role aligns closely with the Executive's ambition to promote more "good jobs" outside Belfast. Economic policy in Northern Ireland increasingly emphasises both the quality and the location of employment, recognising that long-term prosperity depends on secure, productive and resilient jobs being available across the region. **In many non-metropolitan areas, NIFDA members represent some of the most significant sources of private-sector employment, offering alternatives to public-sector-led or low-productivity service employment.** Their presence supports labour market participation, skills retention and income generation in places where employment options can otherwise be constrained.

Spatially, the importance of NIFDA and its membership is closely linked to patterns of regional balance. Food and beverage manufacturing is one of the most regionally embedded parts of Northern Ireland's industrial base, with a substantial proportion of processing capacity located in council areas such as Mid Ulster, Armagh City, Banbridge & Craigavon, Derry City & Strabane and the Causeway Coast.

In these locations, NIFDA member companies often function as cornerstone employers, providing scale, stability and long-term investment that underpin wider local economic resilience. Their operations support both direct employment and a network of upstream and downstream activities that help maintain critical economic mass in towns and rural communities.

Recent policy direction reinforces the relevance of this place-based role. The Programme for Government and the Sub-Regional Economic Plan emphasise locally led economic development and improved regional balance, while Invest NI's strategy signals a shift towards increasing investment outside the Belfast Metropolitan Area. The Northern Ireland Food Strategy Framework further positions food production and processing as part of an integrated system delivering economic, environmental and social outcomes. Within this context, NIFDA members represent established regional assets through which productivity, sustainability and job quality objectives can be pursued concurrently, rather than sequentially or in isolation.

As the representative body for food and drink manufacturers, NIFDA therefore occupies a pivotal strategic position within Northern Ireland's agri-food system. Its members connect farm output to markets, anchor employment across regions, and sustain the supply chains that make local economies function on a day-to-day basis. Understanding the role of the agri-food system in supporting local economies is inseparable from understanding the role of NIFDA and its membership in delivering that impact.

The industry spotlights that follow show how this happens locally, illustrating how NIFDA members anchor employment, sustain supply chains and support economic resilience in specific towns and communities across Northern Ireland.

Industry Spotlight 1: NIFDA members anchor agri-food manufacturing in Armagh City, Banbridge and Craigavon, translating agriculture into resilient jobs and exports locally

Armagh City, Banbridge and Craigavon (ABC) Borough provides a clear illustration of how Northern Ireland's agri-food system operates as a place-based economic system, anchored by established food and beverage manufacturers that convert agricultural production into stable employment, value creation and export-led growth. Within this system, NIFDA and its member companies play a pivotal coordinating and delivery role, connecting primary producers, processors, supply chains and markets across the borough and beyond. ABC is one of the most agriculturally significant council areas in Northern Ireland, accounting for 3,452 farms, around 13% of the NI total, and supporting a farm labour force of approximately 7,173 people. The borough has a particularly strong and diverse production base, leading Northern Ireland in horticulture enterprise concentration, while also hosting large shares of cereal, lowland cattle and sheep, poultry and mixed farming systems. This diversity supports processing demand across multiple product categories and provides resilience against market volatility.

The economic importance of this agricultural base is realised most fully through a dense cluster of food and beverage manufacturing activity, much of it represented through NIFDA membership. According to Invest NI-supported business data, agri-food manufacturing generates approximately £1.85 billion of turnover in ABC, accounting for around 44% of all manufacturing turnover in the borough, and supports over 8,100 jobs, equivalent to more than 40% of total manufacturing employment. This concentration far exceeds the sector's average share of employment nationally and reflects the borough's role as a processing and distribution hub within the wider Northern Ireland agri-food system.

NIFDA's role in this context extends beyond representation. By supporting its members on market access, regulatory engagement, workforce issues and long-term competitiveness, NIFDA helps sustain a critical mass of regionally embedded manufacturers whose operations underpin local economies. In ABC, NIFDA members translate agricultural output into higher-value products, maintain long-term demand for local raw materials and sustain extensive upstream and downstream supply chains spanning logistics, engineering, packaging, maintenance and professional services.

Irwin's Bakery, headquartered in Portadown, illustrates this role at a firm level. Founded in 1912, Irwin's is Northern Ireland's largest independent plant bakery, remaining family-owned and operating from its production facility at Diviny Drive, Portadown, within the ABC borough council. The company supplies a wide range of traditional bread products to retailers across Northern Ireland, Great Britain and the Republic of Ireland, with a quarter of production sold in Great Britain and a further share exported to Ireland and other international markets. This export orientation reflects the role that ABC-based food manufacturers play in generating external income for the local economy.

Irwin's Bakery employ several hundred staff across production, distribution and support functions, making it one of the borough's significant private-sector employers. Its operations support a broad local supply chain, including agricultural input suppliers, logistics providers and service firms, while its continuous production model provides year-round employment in contrast to more seasonal agricultural work.

The company has also invested in product development and processing capability to meet the requirements of large retailers and export customers, including the ability to maintain freshness over extended supply chains, reinforcing the competitiveness of locally produced food from ABC. From an employment and economic development perspective, the presence of firms such as Irwin's Bakery helps deliver outcomes aligned with Northern Ireland's policy objective of increasing the availability of higher-quality employment outside the Belfast metropolitan area. Food and beverage manufacturing roles in ABC offer relatively stable contracts, skills development opportunities and progression pathways, supporting labour market participation and retention within the borough. In aggregate, this strengthens the resilience of the local economy by diversifying employment away from public-sector and consumer-facing services alone.

Local institutions are increasingly seeking to build on this existing strength. ABC Council's Agriculture Strategy recognises agri-food as a cornerstone of the borough economy, while the proposed Agri-Bio Innovation Centre (ABC) aims to reinforce innovation, skills and collaboration across agriculture, food manufacturing and agri-tech. Such initiatives are most effective where they align with an established industrial base, in this case, NIFDA members that already operate at scale, invest locally and compete in external markets.

Overall, this ABC spotlight demonstrates how NIFDA and its members anchor the agri-food system at local level. Primary production provides scale and diversity, while food and beverage manufacturers such as Irwin's Bakery convert this base into sustained employment, export earnings and supply-chain activity. The concentration of this activity in ABC illustrates the wider role of the agri-food sector in supporting regional balance, economic resilience and better-quality employment across Northern Ireland outside Belfast.

Industry Spotlight 2: Dale Farm — cooperative scale, sustainability-led innovation and economic impact across Northern Ireland

Dale Farm provides a clear illustration of how large-scale food and beverage manufacturing, when embedded in primary production and structured through a cooperative model, delivers significant economic impact while acting as a platform for sustainability-led innovation across Northern Ireland. As a farmer-owned cooperative with extensive processing, logistics and export activity, Dale Farm operates as a system-level anchor connecting rural producers to domestic and international markets. Dale Farm is owned by approximately 1,300 farmer members across Northern Ireland, with a milk pool in excess of one billion litres annually. The cooperative employs c.1,200 people across eight operational sites, with a head office in Belfast. Its activities span the full dairy supply chain, including farm support, milk collection, feed manufacture and distribution, processing and the manufacture of a wide range of dairy products for retail, foodservice and ingredients markets. Operations are organised across seven core categories: beverages, cheese and whey, butter and spreads, creams and custards, ice cream, feeds, and agri-services.

From an economic perspective, Dale Farm's scale enables it to function as one of Northern Ireland's most significant food and drink manufacturers. Its processing footprint sustains large numbers of direct jobs while supporting extensive upstream and downstream activity across farming, logistics, engineering, energy, packaging and professional services. As a major exporter, Dale Farm distributes products to more than 40 international markets, spanning Great Britain, Europe and the Middle East and North Africa (MENA) region. This export orientation brings external income into Northern Ireland and reinforces the strategic importance of agri-food manufacturing as a contributor to regional economic resilience.

The cooperative structure is central to Dale Farm's local economic role. By pooling production from a large base of farm members, Dale Farm provides market access, price stability and long-term demand for milk suppliers operating predominantly in rural areas. In doing so, it supports farm viability, employment and land-based economic activity well beyond the processing sites themselves. This dynamic illustrates how large processors can anchor local economies through stable supply-chain relationships rather than through isolated site-level impacts.

Sustainability forms a core component of Dale Farm's operating model and provides a clear example of how environmental action and innovation can reinforce economic outcomes. As a dairy processor, Dale Farm recognises that the majority of its greenhouse gas emissions arise upstream inside the farmgate. To address this, the cooperative produces a comprehensive carbon inventory aligned with the science-based targets initiative, providing a structured framework for tracking emissions and measuring progress. In 2023, Dale Farm introduced Future Strong, a farm sustainability programme designed to deliver practical environmental improvements while supporting farm profitability and aligning with the policy direction of DAERA's emerging sustainability schemes. The programme was built around three principles: delivering measurable change, improving farm business outcomes, and complementing public-sector initiatives rather than duplicating them. To date, over £8m has been paid to participating farmers through the base milk price in recognition of actions taken under the programme, directly linking sustainability participation to farm incomes. Future Strong operates on an annual cycle, allowing agility in response to regulatory change, technological development and evolving environmental pressures. A key component is the development of farm-specific nutrient management plans, building on DAERA's Soil Nutrient Health Scheme. These plans help farmers reduce excess nutrient application, improving soil health, reducing input costs and lowering risks to water quality. This approach positions soil management as the foundation for wider regenerative practices. The programme also incorporates an annual farm sustainability survey, through which suppliers report verified actions and key sustainability metrics across land and nutrient management, feed and herd management, and knowledge transfer. This information enables Dale Farm to calculate a supply-chain-wide carbon footprint and identify areas for targeted improvement. In 2026, a further module focused on farm business resilience is being introduced to support adaptation to climate-related risks already evident across Northern Ireland.

Alongside farm-level initiatives, Dale Farm has made substantial investments in decarbonising its processing operations. Since 2019, emissions from its factories have been reduced by 20%, despite a significant increase in production volumes over the same period. This has been achieved through a structured energy decarbonisation programme encompassing efficiency measures, thermal transformation and renewable electricity generation. Notably, a 5MW private-wire solar farm at the Dunmanbridge facility delivers an annual saving of approximately 2,400 tonnes of carbon dioxide, while a newly installed heat-pump system is expected to reduce gas usage by around 25% at that site. These investments illustrate how large agri-food manufacturers can act as innovation testbeds, accelerating the adoption of low-carbon technologies that generate learning and supply-chain benefits beyond the firm itself. Agreements with renewable energy contractors to offer discounted on-farm renewable installations further extend this impact, enabling farmers to invest in solar, battery storage and wind generation at reduced cost.

Overall, Dale Farm exemplifies the role of NIFDA member companies as system-shaping actors within Northern Ireland's agri-food economy. Through cooperative scale, export reach and sustained investment in sustainability-linked innovation, Dale Farm supports employment, farm viability and environmental improvement simultaneously. Its activities demonstrate how agri-food manufacturing can deliver economic resilience while acting as a catalyst for innovation and sustainability across both local areas and the wider Northern Ireland agri-food system.

dale farm
YOUR DAIRY COOPERATIVE

Industry Spotlight 3: Pilgrim's Europe — anchoring Northern Ireland's poultry supply chain through scale, regional employment and system-wide integration

Pilgrim's Europe provides a clear illustration of how large-scale, integrated food manufacturing operates as an anchor within Northern Ireland's agri-food system, translating primary agricultural activity into sustained employment, regional value creation and export-oriented supply. As Northern Ireland's largest food company, Pilgrim's Europe occupies a central position at the interface between family-run farms, processing infrastructure and downstream retail and foodservice markets, with impacts that extend well beyond its factory gates.

In 2024, Pilgrim's Europe economic footprint includes over 6,000 jobs directly associated with its operations, complemented by extensive supply-chain and consumption-related employment effects. The company's presence underpins a complex ecosystem spanning hatcheries, feed manufacturing, processing facilities, logistics providers and professional services, reinforcing the role of poultry as a cornerstone of Northern Ireland's agri-food economy.

A defining feature of Pilgrim's Europe's operating model is its deep integration with family-run farms across rural Northern Ireland. The company partners with more than 450 poultry farms, many of which are modest in scale and embedded within local communities. These relationships provide long-term market access and income stability for farmers while supporting regional employment and supply-chain continuity. The scale of this network means that changes in processing capacity or investment decisions have material implications for rural livelihoods, inward investment and local resilience. Pilgrim's Europe's regional footprint is deliberately distributed outside the Belfast metropolitan area, aligning with wider objectives around balanced regional development. All of its Northern Ireland employment is located in rural or semi-rural areas, with major centres in Craigavon, Dungannon and Ballymena. This spatial profile reinforces the sector's role in sustaining employment in locations where alternative private-sector opportunities are more limited, and where agri-food processing functions as a cornerstone activity within local economies.

The company's experience also illustrates the system-level dependencies that shape agri-food performance. Recent changes in welfare standards and environmental requirements have increased housing space per bird, reducing processing throughput unless offset by further investment. To restore poultry processing volumes to earlier levels, Pilgrim's Europe has identified the need for additional poultry housing capacity, implying substantial capital expenditure and strong local supply-chain stimulus. The assessment indicates that a £120m investment programme could support over 2,000 jobs, spanning construction, farming, processing and related services.

From a system perspective, Pilgrim's Europe's operations highlight how food security, rural employment and environmental performance intersect. Northern Ireland plays a critical role within UK poultry supply, and sustained domestic processing capacity reduces reliance on imports while supporting higher welfare standards. At the same time, constraints linked to planning and ammonia regulation demonstrate how policy alignment and system coordination influence the sector's ability to maintain scale, productivity and regional value capture.

Overall, Pilgrim's Europe exemplifies the role of large, integrated processors in anchoring Northern Ireland's agri-food system. Its operations show how value is created not only through direct production, but through long-term farm partnerships, dispersed regional employment, and investment-led spillovers across construction, logistics, professional services and the rural economy. The case reinforces the importance of viewing agri-food manufacturing as a system asset, where investment conditions, regulatory frameworks and supply-chain integration collectively shape economic and social outcomes.

9

Sustainability and Innovation Outlook

Assessing sustainability in Northern Ireland's food system through international best practice

Northern Ireland's food and drink sector is central to both economic performance and long-term sustainability outcomes. As a major producer of livestock-based food, the sector underpins employment, exports and food security, while operating within a set of environmental and regulatory constraints that are becoming increasingly binding. Understanding sustainability in this context therefore requires more than headline emissions or efficiency metrics. It requires an assessment of how the food system operates, and how production, inputs, energy use, land management and regulation interact over time.

This section examines sustainability in Northern Ireland's food and drink sector through a comparative, system-level lens. Benchmarking NI against international best practice helps distinguish which pressures are intrinsic to geography and production structure, and which are shaped by policy choices, infrastructure maturity and innovation intensity. This distinction is particularly important for Northern Ireland, where the policy challenge is not whether the sector should continue to produce at scale, but how it can remain competitive and resilient under tightening environmental constraints.

Two international comparators are used to frame this assessment, each illustrating a different sustainability pathway. Denmark represents a livestock-dense system that has embedded circular bioenergy, nutrient recycling and emissions mitigation into the core functioning of its agri-food system. The Netherlands provides an example of a high-productivity, technology-intensive agri-food economy, where land scarcity has driven innovation in resource efficiency, logistics and circular agriculture. From a climate perspective, Northern Ireland's starting position is distinctive. Agriculture accounts for 30.8% of total territorial greenhouse gas emissions, the highest share of any sector. This is not unusual among international livestock-intensive systems, but it has important implications for decarbonisation. In Northern Ireland, emissions outcomes are far more sensitive to on-farm practices, feed efficiency and nutrient management than to downstream food manufacturing alone. In this respect, NI's emissions profile more closely resembles Denmark than the Netherlands, where emissions are distributed more evenly across industry, transport and energy.

Air quality considerations further distinguish Northern Ireland's operating environment. **The scale and spatial distribution of ammonia-sensitive protected sites create a uniquely binding constraint on agricultural activity.** This level of regulatory sensitivity is not present in many peer systems and means that productivity-led growth in Northern Ireland is increasingly conditional on reductions in emissions intensity, particularly ammonia. As a result, feed formulation, manure handling and integrated nutrient management function as system enablers rather than incremental efficiency measures.

Energy systems form a second axis of comparison. Renewable electricity generation accounts for 47% of gross final electricity consumption in Northern Ireland, broadly in line with the EU average, but insufficient to fully decarbonise electricity-intensive food processing through electrification alone. Denmark illustrates a more integrated approach, where biomethane, largely produced from livestock waste and organic residues, now supplies close to 40% of the national gas system and 18% of electricity. This integration allows emissions reduction, renewable energy generation and nutrient recycling to be addressed through a single system rather than separate policy domains.

Resource efficiency and circularity form a third dimension of benchmarking. The Netherlands provides a strong reference point, achieving high output per hectare despite severe land constraints through controlled-environment production, advanced logistics and a clear national commitment to circular agriculture. Importantly, residual and side-stream valorisation is embedded in governance and innovation frameworks, rather than treated as peripheral to primary production. While Northern Ireland cannot replicate this model wholesale, the institutional lesson is relevant.

Innovation and digitalisation further contextualise Northern Ireland's position. Initiatives such as TRACE demonstrate active investment in digital traceability, supply-chain transparency and data-enabled waste reduction, particularly in products of animal origin. This aligns NI with international leaders in recognising digital infrastructure as critical for regulatory compliance and efficiency gains. At the same time, the concentration of activity at pilot level highlights a gap between demonstrated capability and system-wide adoption.

Overall, this benchmarking exercise shows that Northern Ireland's sustainability challenge does not arise from weak production capacity or a lack of sectoral importance. Instead, it reflects the need to continue producing food at scale within tighter environmental and regulatory constraints than many peer systems. International experience demonstrates that successful responses to this challenge are rarely driven by single, standalone interventions. They depend on how core elements of food systems, energy use, nutrient flows, input efficiency and data infrastructure, are aligned and managed together. Within this context, the upstream interface between livestock production, feed formulation and nutrient management becomes particularly significant. How feed is sourced, processed and utilised directly influences emissions intensity, ammonia pressure, resource efficiency and resilience across the wider agri-food system. **This provides the rationale for focusing next on domestic feed conversion, not as an isolated activity, but as a potential system-level lever through which Northern Ireland can support productivity, environmental performance and long-term sustainability simultaneously.**

An all-island food system is a sustainability and resilience opportunity

As previously noted, agriculture remains a cornerstone of Northern Ireland's economy and landscape, accounting for 77% of total land use in 2024, a proportion that has remained broadly stable since 1984. This long-standing land-use pattern underpins Northern Ireland's strong agricultural output and reinforces the sector's structural importance to both domestic production and export markets.

Live animal exports (not including sales to the rest of UK) from Northern Ireland to the Republic of Ireland remain particularly strong, underlining the depth of cross-border integration within the agri-food system. In 2024, ROI accounted for 94% of all live animal exports from Northern Ireland. At a species level, 92.2% of live cattle exports, 98.1% of live sheep, 100% of live pigs, and 76.3% of live poultry and hatching eggs were destined for ROI. Sustaining this export relationship is dependent on the continued growth and resilience of Northern Ireland's domestic livestock production base. **As such, the persistence and scale of agricultural food production within NI is both economically rational and strategically necessary.**

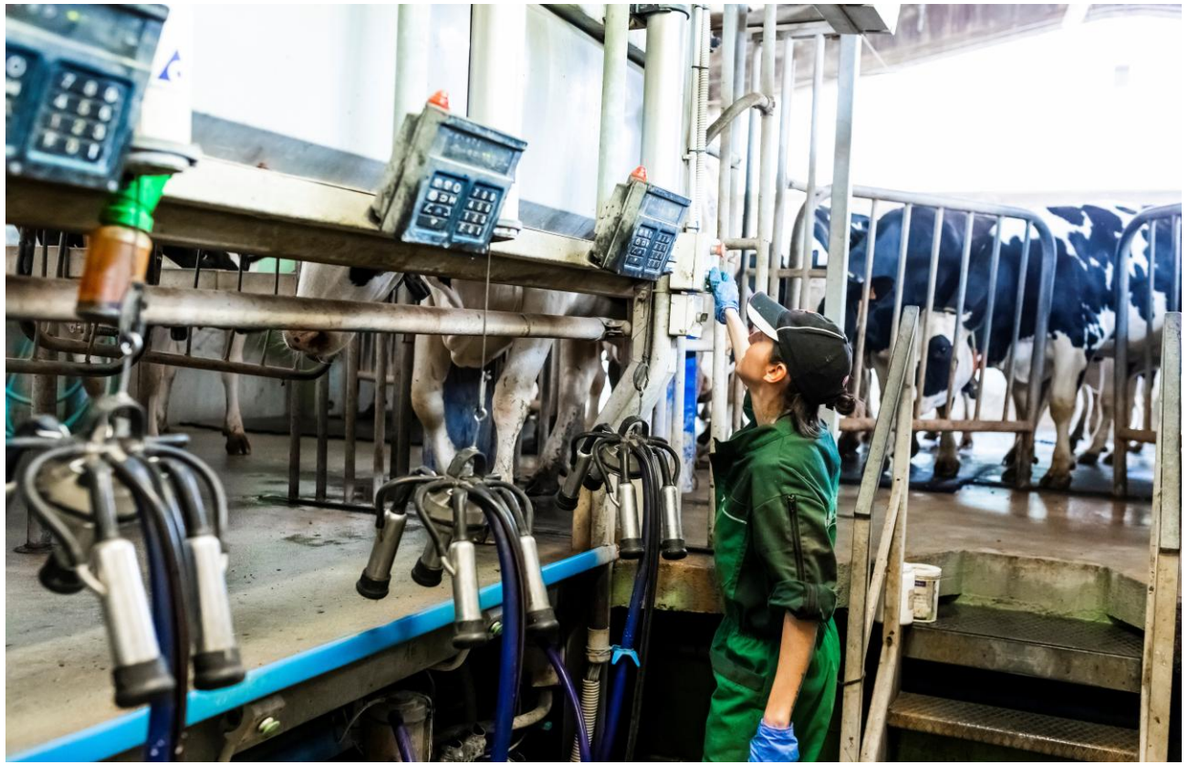
A key factor underpinning this production capacity is Northern Ireland's animal feed industry - feed manufacturing businesses within the region - dominated by John Thompsons and Sons and Fane Valley - collectively supply a wide range of feeds for cattle, sheep, pigs, poultry and equine enterprises. Northern Ireland maintains a strong input base for feed production itself. In 2024, approximately 2.86m tonnes of raw materials were used in animal feed manufacturing. Maize accounted for the largest share of raw material usage at 23%, followed by wheat (20%) and soya meal (13%). While these inputs continued to dominate feed formulations, each recorded a slight reduction in usage moving into 2025, reflecting a broader constriction in production conditions. Nevertheless, the scale of feed manufacturing remains substantial and central to the stability of NI's livestock sector.

Beyond volume, institutional and firm-level research within the feed industry has generated practical insights that support productivity and resilience at farm level. Areas such as the use of lower crude protein diets, the formulation of lower phosphorous diets across NI livestock and soil and silage analysis allow farmers to make more informed decisions about animal nutrition, land management and efficiency. The availability and uptake of this applied research strengthens the sector by enabling targeted improvements in performance while reducing waste and environmental impact.

The structure of animal feeding systems further distinguishes Northern Ireland from agricultural production models in ROI. Although grass remains the primary feed source, NI livestock systems, particularly for cattle and calves routinely incorporate supplementary feedstuffs, such as compound feeds and coarse mixes. This mixed feeding approach contrasts with the predominantly spring-grass-based system common in ROI. While grass-led production has become an internationally recognised hallmark of Irish meat and dairy products, its heavy reliance on seasonal grazing leaves production vulnerable to adverse weather conditions. This vulnerability was highlighted in March 2026, when reports indicated that 50% of dairy farms in ROI had less than 10% of their land grazed due to prolonged periods of heavy rainfall in early spring.

Such conditions have knock-on effects for milk output and livestock performance throughout the year. In contrast, Northern Ireland's greater reliance on supplementary feeding and domestically produced feedstuffs provides a degree of insulation against weather-related shocks.

Northern Ireland's strong domestic livestock production base, integrated feed manufacturing sector, and more diversified feeding systems position the region well to respond when agricultural production elsewhere on the island is constrained. This resilience supports continuity of supply during periods of weather disruption and reinforces Northern Ireland's capacity to stabilise all-island food production. **In doing so, NI not only sustains its own agricultural output but also plays an increasingly strategic role within the wider island-of-Ireland agri-food system.**



Domestic feed conversion underpins the resilience of Northern Ireland's livestock-based food system

As the preceding analysis demonstrates, the resilience of Northern Ireland's livestock sector is inseparable from the structure and scale of the supporting input systems that underpin production. The extensive use of NI land for agriculture, strong cross-border flows of live animals to the Republic of Ireland, and sustained domestic livestock output are all underpinned by the reliability, efficiency and integration of upstream supply chains. Within this system, the availability and performance of domestic feed supply plays a critical role in determining how effectively livestock production can respond to market volatility, weather disruption and environmental constraint.

It is within this context that feed manufacturing emerges as a strategic component of Northern Ireland's agri-food system. Feed production sits at the interface between global commodity markets and local livestock production, shaping both the economic resilience and environmental performance of the sector. Examining domestic feed conversion therefore provides insight into how value is retained locally, how risks are managed across supply chains, and how environmental pressures, particularly emissions intensity and nutrient loading, can be mitigated within a system that is structurally reliant on livestock agriculture.

Feed manufacturing sits at a strategic junction in Northern Ireland's agri-food system, linking global commodity markets with local livestock production and downstream processing. Domestic feed conversion therefore matters not only as an industrial activity in its own right, but as a mechanism through which value is retained locally, risks are managed, and environmental pressures are mediated. NI animal feed statistics indicate that NI manufacturers delivered approximately 2.86m tonnes of compound and other processed animal feedstuffs in 2024 and 2.77m in 2025, underlining the scale at which this junction operates.

From an economic standpoint, the primary significance of domestic feed conversion lies in the retention of processing value within the NI economy. While feed raw materials are often imported, the activities of formulation, milling, pelleting, quality assurance, storage, and distribution generate local gross value added and sustain skilled employment. In the counterfactual scenario where a greater share of feed demand is met through imported processed feed, much of this value would accrue outside NI. The relevant question, therefore, is not whether feeds rely on imported inputs, but where the processing margin and associated services are captured.

Import substitution provides a second economic lens. Meeting NI feed demand through domestic processing reduces reliance on external suppliers for finished feed products and shortens supply chains. This has implications for resilience as well as value retention. Periods of volatility in global feed markets, driven by commodity price shocks or logistics disruption, are transmitted rapidly into farm margins. **Where domestic processors operate at scale, they can act as buffers, smoothing supply, blending inputs, and mitigating exposure to short-term shocks, even if they cannot eliminate underlying price movements.**

Employment effects, though more difficult to quantify precisely, are also material. Feed manufacturing supports direct jobs in processing and indirect jobs in transport, engineering, testing, maintenance, and professional services. These roles tend to be regionally distributed and embedded in rural economies, reinforcing the strategic role of feed conversion in sustaining agri-food employment beyond the farm gate. While these impacts are best expressed as ranges rather than point estimates, their direction is clear: reducing domestic conversion activity would disproportionately affect local service economies.

Environmental implications arise through two principal channels. The first is transport-related emissions. Producing feed domestically reduces the need to move large volumes of finished feed into Northern Ireland, substituting shorter internal distribution movements for longer external supply chains. While transport represents only one component of feed's total carbon footprint, it is one of the few directly influenced by the location of processing activity.

The second environmental channel is more conditional but potentially more significant: nutrient and ammonia management. Feed formulation directly affects nutrient uptake and excretion in livestock systems.

Improvements in protein balance and feed efficiency can reduce nitrogen losses per unit of output, easing pressure on ammonia-sensitive environments. In Northern Ireland's regulatory context, where ammonia is a binding constraint on agricultural development, this link elevates feed efficiency from a cost-saving measure to a system enabler. Importantly, such benefits depend on uptake and integration at farm level; they are not automatic consequences of local feed processing.

Overall, domestic feed conversion acts as a stabilising and value-retaining element of NI's agri-food system. Its contribution is best understood not as a single quantified impact, but as a set of reinforcing economic and environmental effects that become increasingly important under conditions of tighter regulation, higher volatility, and greater scrutiny of emissions intensity.

An all–island food system as the key to improving sustainability efforts

As outlined previous, upstream systems, particularly livestock production and domestic feed conversion, shape resilience, value retention and environmental pressures within Northern Ireland's agri-food economy. These dynamics do not operate in isolation. **Given the scale of livestock agriculture on both sides of the border and the depth of cross-border integration in production and trade, the environmental consequences of how food is produced and processed increasingly manifest at an all-island scale**. This creates a direct link between system-level choices within Northern Ireland's food and drink sector and wider sustainability outcomes across the island of Ireland.

As a result, considerations of feed efficiency, emissions intensity and land management extend beyond firm-level or regional impacts and become relevant to broader questions of shared environmental risk and opportunity. The discussion therefore now widens from the mechanics of domestic feed conversion to the implications of a more integrated all-island food system, particularly in the context of greenhouse gas emissions, ammonia pressures and the role of coordinated approaches in supporting a more sustainable agricultural transition.

As outlined throughout this report, the potential benefits of an all-island food system are significant, with positive implications at both sectoral and national levels for NI and ROI. Greater integration across the island would build on already strong trading relationships, reinforce existing supply-chain linkages and position NI to play a more strategic role in supporting ROI's future population-driven food demand. Beyond economic benefits, deeper collaboration would also create opportunities for both regions to accelerate progress towards shared sustainability objectives.

Agriculture remains a major contributor to greenhouse gas (GHG) emissions in both jurisdictions, exceeding emissions from all other sectors. **In NI, agricultural processes generated methane emissions in 2023 that were approximately 80% higher than those of the next largest emitting sector, waste management.** A similar pattern exists in ROI, where agriculture continues to dominate national emissions, accounting for just under 38% of total GHG output in 2023. These emissions profiles reflect the structure of livestock-intensive agricultural systems and underscore the scale of the sustainability challenge faced across the island.

The environmental impacts associated with these emissions extend beyond climate considerations. Elevated levels of agricultural GHGs and ammonia directly affect public health, land quality and biodiversity. In 2024, the Office for Environmental Protection reported that nature in NI is under unsustainable pressure, with rising atmospheric ammonia contributing to the decline of woodland fungi that play a vital role in soil health and carbon sequestration. The loss of these fungi reduces the soil's capacity to retain carbon, accelerating its release into the atmosphere and reinforcing negative feedback loops within the wider ecosystem.

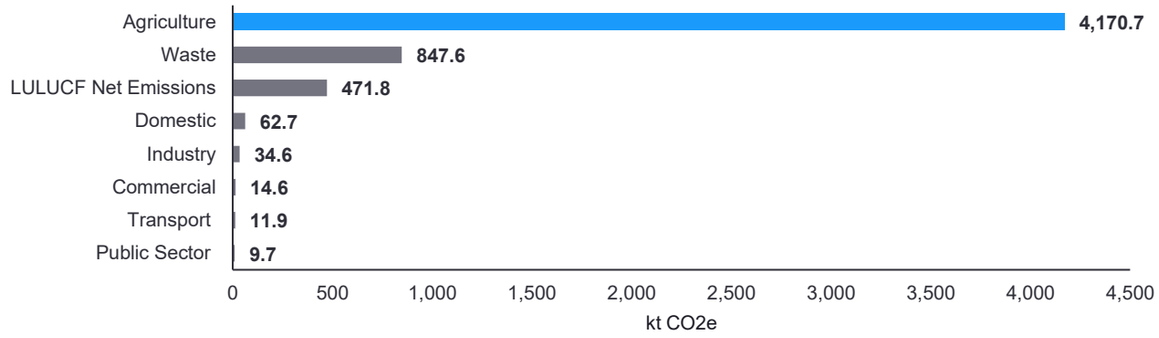
Despite these challenges, the development of an all-island food and drink system presents a meaningful opportunity for NI and ROI to work collaboratively to support a more sustainable agricultural transition. Greater coordination would allow both regions to prioritise long-term sectoral resilience, aligning productivity growth with environmental protection and reducing the ecological intensity of agricultural outputs. A shared approach could also support more consistent adoption of best practice and innovation across farm and processing systems.

International research reinforces the relevance of this direction. In 2025, the Food and Agriculture Organization of the United Nations published *Promoting Bioeconomy through Agricultural Practices in Eastern Europe and Central Asia*, which examined how agricultural systems can contribute to a more sustainable and circular bioeconomy. Two approaches highlighted, permaculture and bioenergy, have particular relevance to the island of Ireland.

Permaculture refers to a holistic approach to land-use and agricultural design based on whole-system thinking and the simulation of natural ecosystems. It aims to balance productivity with regeneration by improving soil structure, water retention and biodiversity. If NI is to expand agricultural output to support ROI's food system over the long term, permaculture principles could help safeguard land quality by preventing the negative consequences associated with over- or under-grazing.

Overgrazing, in particular, can lead to soil compaction and erosion, resulting in siltation within river systems. This process deposits fine soil or clay along riverbeds, restricting water flow and introducing pollutants into waterways. The adoption of regenerative approaches such as permaculture could mitigate these risks while maintaining production capacity, aligning environmental protection with food supply objectives.

Figure 27: Total NI methane (CH4) Emissions by Sector, 2023



Source: ONS

Northern Ireland's agricultural profile places biomethane at the centre of emissions and energy dynamics

Sustainability challenges across the island of Ireland are driven by livestock-intensive production systems that generate greenhouse gas and ammonia emissions alongside large volumes of organic residues requiring careful management. **Addressing these pressures calls for system-level responses that link climate mitigation, nutrient management and long-term agricultural viability across both jurisdictions.** Within this context, bioenergy, and biomethane in particular, has emerged in international and national assessments as one mechanism capable of addressing multiple challenges simultaneously, by targeting how manures, slurries and other organic residues are managed within the agri-food system rather than treating emissions, waste and energy supply as separate policy issues.

Bioenergy, and biomethane in particular, is increasingly referenced in international and national assessments as a mechanism for reducing greenhouse gas emissions while supporting circular use of biological resources. The Food and Agriculture Organization of the United Nations (FAO) identifies anaerobic digestion (AD) as a core bioeconomy practice, enabling agricultural and organic residues to be converted into renewable energy and recycled nutrients. The FAO analysis highlights livestock-based regions as particularly well aligned with this model due to the availability of manures and slurries as feedstocks, a characteristic that applies across both NI and ROI.

Biomethane is produced by upgrading biogas generated through anaerobic digestion of organic materials such as animal manure, food waste, and sewage sludge. Typical biogas composition is approximately 60% methane and 40% carbon dioxide, with trace gases. Through purification, biomethane achieves a methane content of around 97%, making it suitable for injection into the natural gas grid or use as a transport fuel. This process also yields digestate, a nutrient-rich organic fertiliser that can partially substitute for mineral fertilisers.

Gas Networks Ireland (GNI) and the Department of Agriculture, Food and the Marine (DAFM) have identified biomethane as a critical element in Ireland's decarbonisation strategy. GNI's roadmap projects that up to 20% of Ireland's gas demand could be met by renewable energy by 2030, with significant emissions reduction potential coming from biomethane gas adoption. EPA Ireland confirms that agriculture is the largest source of methane and nitrous oxide emissions nationally, and that AD can mitigate these by capturing methane from manure and reducing the need for synthetic fertilisers.

In Northern Ireland, the structural rationale for biomethane is similar, although the policy and market context is less developed. Official greenhouse gas statistics show that agriculture accounted for 30.8% of total NI emissions in 2023, making it the largest emitting sector. Methane from livestock is the dominant contributor, with agriculture generating substantially higher methane emissions than any other sector in the NI economy. Alongside climate impacts, NI faces acute environmental pressures linked to livestock waste management. The Office for Environmental Protection (OEP) reported in 2024 that ammonia emissions, around 97% of which arise from agriculture, are placing sustained pressure on protected habitats, with widespread exceedance of critical nitrogen loads. These findings highlight the role of manure and slurry management practices in shaping environmental outcomes beyond greenhouse gases, including impacts on soil processes and biodiversity. Within this context, biomethane production via AD is relevant not as a standalone energy solution but as part of a broader waste and nutrient management system. By diverting slurries and organic residues into controlled digestion, biomethane systems alter how and when methane is emitted, while also producing digestate with more predictable nutrient properties than raw slurry. EPA Ireland and FAO publications both note that such systems can contribute to improved nutrient management, although digestate remains subject to existing nitrogen application limits.

Unlike ROI, which has a national biomethane injection framework, Northern Ireland's gas and agricultural infrastructure presents more fragmented conditions. While gas distribution networks are present, large-scale biomethane grid injection and centralised AD deployment remain at an earlier stage. DAERA and NISRA data indicate that investment in slurry storage and management infrastructure has not kept pace with livestock sector scale, a factor also identified in wider UK evidence reviewed by DEFRA. This gap shapes how agricultural waste is currently handled and contributes to both emissions and environmental pressures.

As a result, the relevance of biomethane in NI is closely tied to the interaction between agriculture, waste handling and environmental regulation, rather than energy supply alone. The OEP's findings on ammonia illustrate how manure management practices affect protected habitats at a system level, reinforcing the link between emissions, land use and long-term agricultural viability.

Across both NI and ROI, interest in domestic bioenergy is shaped by exposure to external energy shocks. Disruption to gas markets following Russia's invasion of Ukraine and the current conflict in the Middle East have led to price volatility across Europe and the UK, illustrating the sensitivity of gas-dependent economies to geopolitical risk. While the scale of exposure differs between the two jurisdictions, both systems remain reliant on imported fossil gas, providing context for continued examination of domestically sourced alternatives such as biomethane.

Biomethane production in Ireland is technically feasible, environmentally beneficial, and aligned with national and EU policy objectives. Its successful deployment depends on investment, regulatory alignment, and coordinated stakeholder action. While AD and biomethane can reduce GHG emissions and improve nutrient management, they complement, rather than replace, existing environmental regulations and agricultural practices.

Publicly available evidence shows that biomethane occupies different stages of development in ROI and NI but is underpinned by similar structural drivers: livestock-dominated emissions profiles, large volumes of organic residues, and environmental pressures linked to manure and nutrient management. In ROI, biomethane is embedded within energy system planning, while in NI its relevance is more closely connected to emissions control and environmental compliance within the agricultural system. In both cases, biomethane is best understood as one component within a wider, integrated agri-environmental system rather than as a single transformative intervention.

Nordic countries continue to outperform the EU on sustainable energy, with bioenergy playing a central role in Denmark's energy system

The evidence above establishes biomethane and bioenergy as system-level responses to the emissions and nutrient-management challenges facing livestock-intensive food systems, rather than as energy solutions in isolation. To understand what effective deployment looks like in practice, it is helpful to examine jurisdictions that have already moved beyond pilot activity and embedded bioenergy within their agricultural and energy infrastructures. International benchmarking provides a reference point for assessing how policy alignment, infrastructure investment and system integration can translate technical feasibility into sustained delivery and offers a basis for comparing Northern Ireland's current position with established best practice.

The Nordic countries provide one of the clearest European examples of how long-term sustainability objectives in agriculture can be supported by integrated energy and resource systems. Over the past two decades, the region has consistently outperformed the European Union in the deployment of renewable energy, reflecting early policy alignment between climate targets, agricultural systems and energy infrastructure. By 2004, the Nordic region already had a substantially higher share of renewable energy in gross final energy consumption than the EU average, and this gap has widened steadily since then.

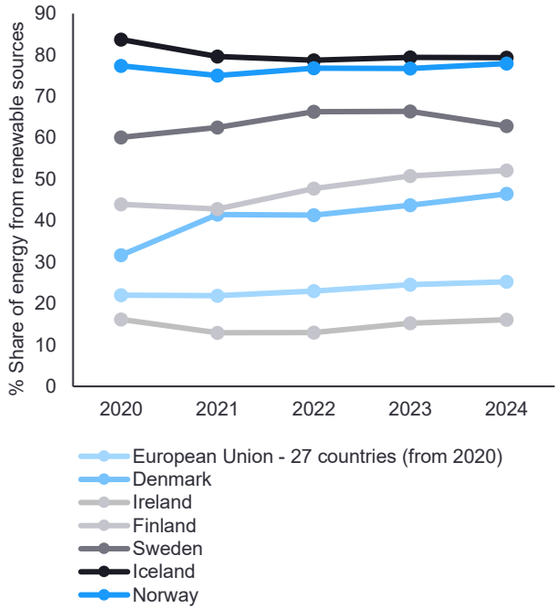
By 2023, all five large Nordic countries had reached or exceeded the EU's 2030 renewable energy target of 42.5%, seven years ahead of schedule. In 2024, shares of energy from renewables sources ranged from 46.4% in Denmark to nearly 80% in Iceland, compared with an EU-wide average of 25%. When combined, the Nordic region achieved an overall renewable share of 63.7%, more than double the EU level at the start of the period and significantly ahead of current EU performance.

This performance reflects not only favourable natural endowments but also systematic integration of energy policy with land-based sectors, including agriculture. Iceland and Greenland generate virtually all domestic energy from renewable sources, relying primarily on geothermal and hydropower. In contrast, Denmark, Sweden and Finland rely more heavily on bioenergy and renewable waste streams, which are closely linked to agricultural and forest residues. Norway remains dominated by hydropower, but bioenergy still plays a supporting role in rural and agricultural regions.

Among the Nordic countries, Denmark provides the most relevant example for agricultural sustainability, given its limited hydropower resources, high livestock density and strong reliance on bioenergy. Denmark has successfully combined intensive agriculture with declining net emissions by embedding bioenergy into both farming systems and national energy infrastructure.

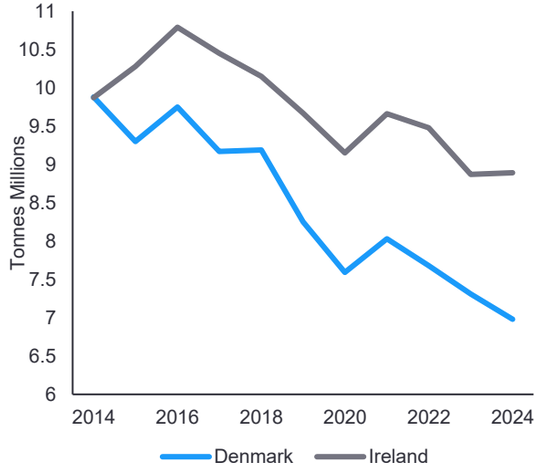
Bioenergy accounts for more than two-thirds of Denmark's renewable energy supply, making it the largest renewable source in the Danish energy mix. According to Bioenergy Europe and IEA Bioenergy analysis, bioenergy represents approximately 61% of total renewable energy, with particularly strong penetration in heating, cooling and gas systems. This is highly unusual in an EU context, where renewables are typically dominated by electricity-focused wind and solar.

Figure 28: Renewable energy use, 2020 - 2024



Source: Eurostat

Figure 29: Carbon emissions comparison 2014 – 2024



Source: Nordic Statistic Database

A defining feature of the Danish model is the integration of agricultural residues into scalable bioenergy systems, particularly through biogas and biomethane production. Denmark currently operates over 150 large-scale biogas plants, with livestock waste constituting approximately 75% of feedstock. This design explicitly links manure management, methane capture and energy production, reducing emissions from slurry storage while supplying renewable gas to the national grid.

By 2023, biomethane accounted for almost 40% of total gas consumption in Denmark, with government-backed scenarios indicating that the gas system could reach 100% green gas by 2030. The Biogas Outlook 2025 report shows that this transition is achievable using existing agricultural residues and waste streams, without reliance on purpose-grown energy crops, which are heavily restricted by regulation.

Sustainable outcomes emerge from how production, energy and resources are aligned

Another key element of Danish best practice is district heating, which plays a central role in how agricultural bioenergy supports wider sustainability outcomes. Around two-thirds of Danish households are connected to district heating networks, and over 70% of district heating energy is generated using biomass, predominantly in high-efficiency combined heat and power (CHP) plants. These systems are designed to maximise energy efficiency while minimising fuel inputs and emissions.

From an agricultural perspective, the district heating model allows bioenergy derived from manure, straw and organic waste to be used efficiently at scale, while digested residues are returned to farmland as fertiliser. Denmark has placed strong regulatory emphasis on nutrient recycling, particularly phosphorus, a finite resource. The Biogas Outlook 2025 analysis highlights how widespread biogas deployment improves nutrient recovery, reduces losses to water systems and supports compliance with nitrogen emission limits, reinforcing environmental sustainability without reducing agricultural output.

Denmark's approach has also produced structural changes in energy security. Despite historically producing fossil fuels, Denmark is now considered independent from natural gas imports, with a gas import dependency of -17%, meaning it is a net exporter. Bioenergy and biomethane have been central to this shift, particularly as domestic fossil gas production has declined over the past decade.

At the EU level, this approach aligns closely with the European Commission's REPowerEU roadmap, which explicitly identifies biomethane expansion as a key pathway for phasing out Russian gas imports while supporting climate and agricultural objectives. In May 2025, the Commission confirmed that increased domestic biogas and biomethane production would form part of Europe's strategy to improve resilience, reduce import dependence and support emissions reduction in land-based sectors.

Taken together, evidence from the Nordic region, and Denmark in particular, illustrates that best practice in sustainable agriculture does not depend on reducing production, but rather on restructuring how agricultural by-products, energy systems and environmental controls interact. Key characteristics of this approach include:

- Integration of manure and residues into energy systems rather than treating them solely as waste
- Large-scale, regulated bioenergy infrastructure linked directly to farms
- Strong emphasis on nutrient recycling and resource efficiency
- Alignment between agricultural policy, climate targets and energy security objectives

These features provide a clear reference point for regions seeking to align food production with long-term sustainability requirements without undermining sectoral resilience.

Pathways to net-zero depend on coordinated system change, not a single intervention

Achieving net-zero outcomes in Northern Ireland's food and drink system requires a portfolio of mechanisms operating over different time horizons rather than reliance on a single transformational intervention. The relevant opportunities can be organised around how physical processes change, the direction in which impacts move, and the dependencies that determine feasibility. Feed efficiency and formulation represent one of the shortest-horizon levers. Incremental improvements in conversion efficiency reduce emissions intensity and input costs simultaneously, particularly in livestock systems where feed dominates variable costs. In NI's context, the significance of this lever is amplified by ammonia constraints, as improved nutrient efficiency directly affects regulatory headroom. Realising these gains depends on advisory capacity, data feedback loops, and alignment between commercial incentives and environmental outcomes.

Local processing and supply-chain integration operate over a medium horizon. Retaining feed conversion within NI strengthens value capture and can reduce certain transport emissions, but it does not automatically decarbonise production. The net-zero relevance of local processing therefore hinges on parallel progress in energy efficiency, electricity decarbonisation, and, where applicable, heat substitution. Capital availability and grid constraints become decisive dependencies at this stage.

Bioenergy and anaerobic digestion illustrate a longer-horizon pathway with system-wide implications. International experience shows that integrating livestock waste into biogas and biomethane systems can simultaneously address methane emissions, renewable energy supply, and nutrient recycling. Outcomes, however, are highly sensitive to design choices, planning processes, and market access. This pathway is capital intensive and institutionally complex, requiring coordination across farms, processors, energy systems, and regulators.

Digitalisation and traceability cut across all horizons. Investments in data infrastructure, sensing, and verification enable more precise management of resources, reduce waste, and lower the cost of compliance. In export-exposed sectors and regulated environments, these capabilities increasingly determine market access rather than merely delivering efficiency gains. Their impact scales with adoption and interoperability rather than individual pilots.

Finally, circular use of by-products and residual streams represents a cross-cutting opportunity. Valorising residues reduces waste, displaces primary inputs, and can create new revenue streams, but the climate benefits are context-specific and depend on displacement effects. Regulatory clarity, secondary markets, and innovation partnerships are critical dependencies.

In combination, these levers reinforce a central conclusion: **NI's route to net zero in food and drink is not primarily about reducing production, but about reshaping how production systems operate under constraint.** Evidence from international leaders shows that competitiveness and sustainability can be aligned where policy, infrastructure, and innovation progress together.

Key insights: Sustainability pathways and system-level levers

Sustainability pressures in agri-food are system-wide and livestock-driven
Across the island of Ireland, agriculture accounts for a disproportionate share of greenhouse gas and ammonia emissions, reflecting the scale of livestock production rather than firm-level inefficiency. As a result, sustainability outcomes are shaped primarily by how livestock systems, feed, manure management and processing interact, not by isolated interventions.

An all-island food system presents a material sustainability opportunity
Given the depth of cross-border integration in livestock production and trade, environmental pressures and mitigation opportunities increasingly operate at an all-island scale. Greater alignment across jurisdictions offers scope to improve emissions intensity, nutrient management and resilience while sustaining food production capacity.

Bioenergy and biomethane function as system-enablers, not standalone solutions
Evidence from NI, ROI and international benchmarks shows that anaerobic digestion and biomethane are most effective when embedded within wider manure, nutrient and waste management systems. Their contribution lies in altering how and when emissions arise, improving nutrient control and supporting circular resource use, rather than in energy supply alone.

Northern Ireland's agricultural profile makes system integration particularly relevant
NI's high livestock density, reliance on imported fossil gas, and acute ammonia constraints heighten the relevance of integrated bioenergy and nutrient management pathways. However, compared with ROI, supporting infrastructure, policy frameworks and grid integration remain less developed, limiting near-term deployment at scale.

International best practice shows that production and sustainability can be aligned
Nordic experience, particularly Denmark, demonstrates that high-output livestock systems can coexist with falling emissions where bioenergy, nutrient recycling and energy infrastructure are aligned with agricultural policy. These systems treat manure and residues as strategic assets rather than waste streams.

A portfolio of levers is required to support transition
Net-zero and environmental objectives cannot be delivered through a single intervention. Short-term gains are most plausibly achieved through feed efficiency and nutrient management; medium-term gains through processing efficiency and energy decarbonisation; and longer-term gains through coordinated bioenergy, digitalisation and circular use of by-products.

The central challenge is reshaping how production operates under constraint
The analysis indicates that Northern Ireland's sustainability challenge is not whether food should continue to be produced at scale, but how production systems evolve within tightening environmental, regulatory and resource constraints. This framing underpins the need for coordinated policy, investment and system-level action, rather than firm-by-firm responses.

10

Policy Pathway

Strong policy ambition, constrained delivery: where system coordination breaks down in practice

Northern Ireland's food and agri-food system operates within a policy environment characterised by strong and well-articulated ambition across economic growth, environmental improvement, rural resilience and food security. Strategic objectives in each of these areas are clearly established and are broadly understood across government, industry and stakeholders. Findings from industry consultation indicate that the principal challenge facing the sector is not the absence of policy direction or clarity of intent, but the manner in which these objectives are translated into delivery within a complex, highly interdependent system. The issues identified relate primarily to implementation, sequencing and coordination, rather than to disagreement with policy goals themselves.

Industry consultation emphasise that investment decisions in the agri-food system are inherently multi-dimensional. Projects that aim to improve productivity or expand capacity typically also affect emissions intensity, nutrient management, energy use, animal welfare and employment outcomes simultaneously. As a result, delivery outcomes are shaped less by individual policy silos and more by how those policy frameworks interact in practice.

Industry consultation highlights three recurring delivery challenges:

1. Fragmented delivery where policy domains intersect

Businesses consistently report that delivery challenges emerge most strongly at the intersections of environmental regulation, planning, agricultural policy and economic development. While objectives within each domain are generally coherent and aligned in principle, responsibilities at the interfaces are distributed across multiple functions, agencies and approval processes. For firms seeking to invest, this can create unclear ownership of system-wide outcomes and uncertainty over how different considerations will be assessed and prioritised.

From an operational perspective, this fragmentation manifests in longer decision timelines, duplicated evidence requirements and uncertainty over sequencing, even where the underlying policy direction is supportive. Because agri-food investments often cut across productivity, emissions reduction, nutrient control, energy infrastructure and workforce considerations at the same time, the absence of clearly integrated delivery pathways makes risk harder to price and investment decisions more difficult to advance. Importantly, this is not presented by industry as a conflict between policies, but as a lack of coordination at the delivery level.

2. Tension between precautionary regulation and practical system improvement

There is widespread recognition across industry of the environmental constraints under which the food system operates, including statutory greenhouse gas targets and acute ammonia pressures. Industry consultation does not question the legitimacy of these constraints. However, concern is frequently expressed that highly precautionary approaches to delivery can inhibit progress on investments that would deliver credible, incremental improvement.

From a delivery perspective, strict or protracted processes can delay the replacement of existing infrastructure with lower-impact alternatives. Where this occurs, higher-impact assets remain in operation for longer, compliance pressure builds and opportunities to reduce emissions intensity or improve nutrient management are deferred. Industry consultation suggests that this dynamic can slow the overall pace of system improvement rather than reducing environmental risk at a system level. The outcome is often greater rigidity, reduced investment appetite and a higher likelihood that adjustment occurs later and more abruptly.

3. Environmental protection and food production framed as competing objectives

Industry consultation also highlights a tendency, in some delivery contexts, for environmental protection and food production objectives to be framed as trade-offs. This framing persists despite evidence that many investments advance both goals concurrently. Improvements in nutrient management can reduce ammonia impacts while improving soil performance; energy efficiency measures lower emissions while strengthening cost resilience; and circular use of by-products can reduce waste while supporting system efficiency.

However, current delivery mechanisms are perceived as limiting the deployment of such investments at scale, particularly where decisions are assessed narrowly or without reference to system-wide outcomes. This can reinforce a binary framing in which production and protection are seen as opposing forces, rather than as objectives that can be jointly advanced through well-designed investment and coordinated delivery. Industry feedback indicates that this constrains innovation and reduces the system's capacity to adapt within existing environmental limits.

The pathway forward is enabling delivery through clearer, faster and more coordinated planning

Industry consultation consistently identifies delivery conditions, rather than policy ambition, as the decisive factor shaping whether investment in lower-impact production proceeds at pace. Across the agri-food system, firms are responding to clear long-term signals around emissions reduction, nutrient management and environmental performance. However, the ability to translate these signals into action depends on whether the approval and implementation environment enables replacement of existing infrastructure with lower-impact alternatives.

Planning and regulatory processes emerge as a critical constraint on system modernisation. The issue raised through industry consultation is not opposition to environmental standards or outcomes. Instead, concern centres on extended timelines, evolving requirements and uncertain decision pathways that delay or deter investment in projects designed to reduce emissions intensity, improve nutrient control and enhance productivity. From a system perspective, this has the practical effect of locking in higher-impact infrastructure for longer, slowing progress against policy objectives.

Where decision processes are highly precautionary or fragmented, delivery risk increases rather than decreases. Investments that would replace existing assets, often positively from an environmental perspective, are delayed while compliance pressure on the existing asset base accumulates. Industry feedback indicates that this dynamic widens the gap between policy intent and real-world outcomes over time, increasing the likelihood of sharper and more disruptive adjustment later rather than steady system improvement.

From a delivery standpoint, planning functions not only as a control mechanism but as a determinant of system adaptability. Where approval pathways are predictable, transparent and capable of differentiating between projects that intensify environmental pressure and those that mitigate it, firms are better able to invest early, integrate mitigation into project design and deliver measurable improvement. Conversely, where uncertainty persists, capital-intensive investments are deferred even when aligned with stated policy goals.

Circular economy infrastructure illustrates these dynamics clearly. Anaerobic digestion is widely recognised across industry consultation as a solution capable of addressing multiple pressures simultaneously, including emissions reduction, nutrient management and energy resilience. Despite clear policy support in principle, deployment has remained limited. Delivery barriers—particularly misalignment across planning, environmental regulation, energy policy and market frameworks—are frequently cited as preventing projects from progressing to scale. The result is that recognised system benefits remain unrealised, while the underlying emissions and nutrient challenges persist.

These issues extend beyond a single technology or project type. Similar delivery challenges are reported for investments in animal housing upgrades, precision nutrient infrastructure, on-site energy efficiency, waste and by-product valorisation, and processing capacity modernisation. In each case, investment would support both environmental improvement and economic performance, yet delivery uncertainty constrains uptake.

Effective delivery therefore depends on four reinforcing enablers:

1) **Stable long-term targets are essential**. Industry consultation consistently emphasises the importance of durable signals on direction of travel, particularly where assets are long-lived and capital-intensive. Stability reduces the risk of stranded investment and allows firms to sequence capital plans in line with regulatory expectations. Importantly, stability does not require rigidity in how outcomes are achieved.
2) **Flexible delivery pathways materially improve outcomes.** Allowing a range of technologies and practices, tailored to site-specific conditions, supports innovation and avoids locking the system into narrow compliance routes. Flexibility must be accompanied by credible measurement, verification and transparency so that different pathways deliver comparable outcomes. Where this balance is achieved, industry feedback indicates higher-quality investment decisions and faster uptake of lower-impact solutions.
3) **Predictable planning and regulatory processes are the mechanism that translates ambition into delivery.** Clear pre-application guidance, consistent methodologies, proportionate evidence requirements and defined timelines reduce uncertainty and encourage earlier engagement. Predictability enables firms to embed mitigation into design rather than retrofitting compliance late in the process, improving both delivery speed and environmental performance.
4) **For circular economy infrastructure in particular, predictability must be matched by coordination across policy domains**. Projects that sit at the intersection of environment, energy and planning require aligned treatment if they are to become investable at scale. Without this alignment, ambition risks remaining aspirational rather than operational.

The implications for policy design are therefore practical rather than transformational. Industry consultation does not point to the need for wholesale policy change or new targets. Instead, it highlights the importance of strengthening delivery conditions within the existing framework. Planning and regulation are most effective when treated as enablers of system improvement, not solely as mechanisms to manage risk at individual decision points.

In effect, the challenge is one of pacing and sequencing. Where delivery mechanisms allow progress to be demonstrated and recognised over time, the system adapts incrementally and predictably. Where they do not, delay compounds pressure, narrowing future options and increasing adjustment costs.

In summary, accelerating investment in lower-impact production depends on creating delivery pathways that are predictable, flexible and coordinated. Stable targets provide confidence. Flexible routes enable innovation. Predictable and aligned approval processes allow capital to flow. Strengthening these conditions would materially improve the pace, quality and reliability of delivery—translating existing policy ambition into measurable environmental improvement, economic resilience and food security across the agri-food system.

Strengthening planning predictability and cross-system coordination would accelerate investment, reduce environmental pressure over time, and reinforce the agri-food sector's contribution to economic security

What industry is experiencing - three recurring delivery challenges

Fragmented delivery at policy interfaces

- Environmental regulation, planning, agricultural policy and economic development intersect without clear ownership, sequencing or timelines, most visibly within the planning process.

Precautionary regulation slowing improvement

- Risk-averse planning and approval processes delay investment that would replace higher-impact infrastructure with lower-impact alternatives, slowing system improvement.

Production and protection framed as competing goals

- Despite many investments advancing both objectives, delivery mechanisms, particularly planning, often treat environmental protection and food production as trade-offs.

These challenges converge in practice through a labour-intensive, uncertain planning process

What enables delivery in practice

Stable long-term targets

- Clear, durable signals on direction of travel give firms confidence to invest in long-lived, lower-impact assets.

Flexible delivery pathways

- Different technologies and approaches should be able to deliver the same outcomes, enabling innovation and site-specific solutions.

Predictable planning processes

- Timely, transparent and coordinated planning decisions that distinguish between projects that mitigate environmental pressure and those that intensify it.

Aligned circular economy infrastructure

- Coordinated treatment of projects (e.g. anaerobic digestion) across planning, environmental regulation and energy policy to make investment viable at scale.

Delivery is enabled in practice through stable objectives, flexible pathways and a predictable planning process.

11

Appendix

We have reviewed the evidence base for the productivity-led upside scenario assumptions

This page outlines how the productivity-led upside scenario was informed by existing evidence and why the assumptions are framed as conservative, illustrative parameter shifts rather than precise forecasts. Consistent with the wider scenario framework, the upside is designed as a steady-state "what-if" test intended to show direction of travel and sensitivity within the existing economic structure, rather than to predict a specific outcome.

Across food and drink manufacturing, sustainability-linked innovation is most frequently associated with improvements in operational efficiency, rather than with immediate expansion in capacity or workforce. Sector decarbonisation work consistently highlights process heat, refrigeration and energy management as central features of food manufacturing operations, and therefore central to both emissions reduction and cost control. The practical pathway set out in industry roadmaps focuses on reducing heat and energy demand through efficiency and process integration, electrifying where feasible, and improving monitoring and control. These interventions typically raise productivity by reducing waste, losses and downtime, thereby increasing value added per unit of output rather than driving large increases in production volumes or employment.

Global public sector evidence reinforces this interpretation. The U.S. Department of Energy's bandwidth analysis for food and beverage manufacturing frames performance in terms of a gap between "current typical" practice and more efficient "state-of-the-art" operation, indicating that material efficiency improvements are feasible through adoption of existing best-available technologies. Similarly, the U.S. Energy Information Administration emphasises the presence of an "energy efficiency gap" in food processing and models gradual improvements through retrofitting and equipment replacement. Together, these sources support the proposition that meaningful efficiency gains are achievable, while also underlining that outcomes vary by site and baseline performance and should not be treated as uniform sector-wide averages.

Case evidence is therefore used to demonstrate plausibility rather than provide benchmarks. For example, a published food manufacturing improvement case study reports elimination of raw material waste and a 4-5 point improvement in efficiency, contributing to improved profitability through better process control and management systems. This supports the upside logic that productivity gains often arise from improved visibility, standardisation and operating discipline, all of which overlap strongly with how sustainability investments are implemented in practice. At the same time, it is a single example and is not treated as representative of typical performance across the sector. Peer-reviewed audit evidence provides additional reassurance on the scale of potential impacts. A factory-scale energy audit case study in food production reports that applying identified measures could reduce energy use by up to 18% at that facility. This demonstrates that double-digit reductions in energy use can be achieved in practice under certain conditions, without implying that such outcomes would be typical across all firms. The relevance for the scenario is to justify framing the upside primarily through improved cost efficiency and value capture, rather than through volume expansion.

Sector context also informs how these mechanisms translate into modelling assumptions. Food and drink manufacturing is widely recognised as operating with relatively tight margins, and industry reporting highlights persistent cost pressures alongside limited scope for passing increases fully through to prices. In this context, productivity-led improvements affect not only operating margins but also the cost base embedded within supply chains. Improvements in energy efficiency, waste reduction, input optimisation and process reliability can translate into modest but material reductions in intermediate consumption requirements, including utilities, contracted services and purchased inputs. Reflecting this evidence, the upside scenario incorporates a 1% reduction in supply-chain (intermediate) costs, representing incremental efficiency gains passed through procurement, production and logistics activities rather than structural reconfiguration of supply chains.

Against this evidence base, the upside scenario assumptions are selected conservatively. The operating margin uplift of 1-2 percentage points is chosen because the dominant effect of sustainability-linked innovation is improved efficiency, reduced energy and input intensity and greater operational reliability. The accompanying 1ppt reduction in supply-chain costs reflects these same mechanisms operating through intermediate purchases, rather than a separate or additive intervention. Neither assumption is presented as a literature-derived average; both are intended as prudent, illustrative magnitudes consistent with the scale of value capture observed in practice.

The revenue or output uplift is treated as secondary and deliberately modest. Improved monitoring, maintenance and process control can reduce downtime and waste, increasing effective saleable output from existing assets without major new capacity. However, absent structural change or large capital expansion, the most defensible expectation is that such gains are in the low single-digit range. The model therefore applies a 3% central uplift, with 5% as an upper sensitivity, reflecting partial and uneven uptake of improvements across the sector rather than a uniform transformation.

Finally, direct employment is held constant in the upside scenario. Productivity-led pathways in manufacturing typically aim to reduce labour intensity per unit of output or stabilise output with the same workforce, rather than expand headcount. This assumption ensures internal consistency: the upside is GVA-led rather than job-led, with wider benefits arising through higher profitability and spillover effects rather than through direct employment growth.

There is an evidence base for the cost pressure downside scenario

This page sets out the evidence base underpinning the downside scenario and explains why the assumptions are framed as persistent margin pressure rather than a sharp contraction in output. As with the wider scenario framework, the downside case is constructed as a steady-state "what-if" test. Its purpose is not to forecast a downturn, but to demonstrate how sustained cost inflation propagates through Northern Ireland's food and drink manufacturing and agricultural sectors within their existing economic structure.

Across recent years, both food manufacturing and primary agriculture have operated under conditions of heightened and prolonged input cost volatility. Industry reporting consistently shows that these sectors are characterised by structurally tight margins, limiting the capacity of firms to absorb external shocks without erosion of profitability. Energy, feed, fertiliser, labour and regulatory compliance costs represent a large share of the operating cost base and are only partially discretionary in the short to medium term. While headline inflation has moderated since the peaks observed in 2022, multiple sources confirm that costs remain elevated relative to pre-pandemic levels and continue to respond sharply to developments in energy markets, geopolitics and environmental regulation.

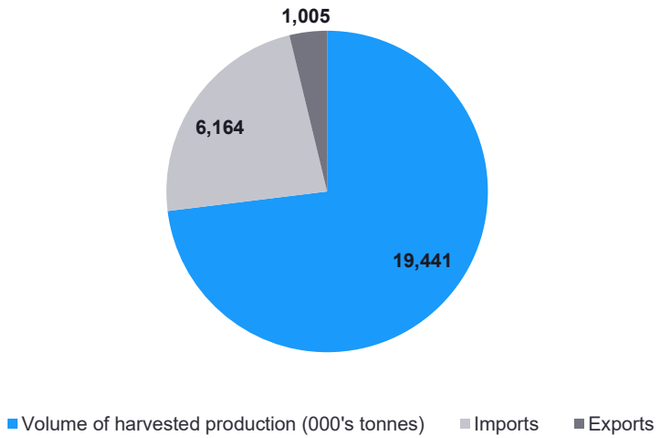
Observed firm behaviour during recent inflationary episodes provides important context for the downside assumptions. Evidence from the UK food manufacturing sector suggests that output volumes are typically maintained where possible, reflecting both the essential nature of food demand and strong retailer pressure for continuity of supply. Rather than reducing production, firms initially absorb higher costs through margin compression, particularly where competitive conditions and consumer price sensitivity limit the ability to fully pass cost increases downstream. This supports the modelling choice to hold revenues and output broadly flat while applying a reduction in operating margins. Intermediate input costs form a central transmission channel in the downside scenario. Food manufacturing is highly exposed to externally purchased inputs including energy, packaging, transport and raw materials. Even relatively modest percentage increases in these inputs have disproportionate effects on value added due to low baseline margins. In agriculture, feed and fertiliser costs remain especially important, with livestock systems exhibiting continued exposure to global commodity and energy price volatility. Although some input prices eased during parts of 2024, evidence points to renewed downside risk and ongoing uncertainty rather than a return to long-run stability.

Labour market responses under cost pressure tend to be gradual and asymmetric. Empirical studies and sector surveys indicate that firms typically prioritise non-labour adjustments first, including efficiency measures, reduced overtime, delayed recruitment and natural attrition. Where employment reductions occur, they are generally incremental and lagged, reflecting both operational constraints and the costs associated with workforce adjustment. This justifies the assumption of a small decline in direct employment rather than rapid or large-scale job losses. At the same time, labour cost intensity continues to rise due to minimum wage increases, skills shortages and higher employer contributions, further reinforcing margin pressure even as headcount adjusts only modestly.

Overall, this evidence supports a downside scenario characterised by stable output, compressed margins and gradual labour adjustment. The assumptions are intentionally conservative and stylised, capturing well-documented mechanisms observed during recent cost-pressure periods rather than extreme outcomes. As with the upside case, the scenario should be interpreted as a directional stress test, showing how sustained cost inflation can erode economic contribution primarily through reduced value creation, even when production volumes are maintained.

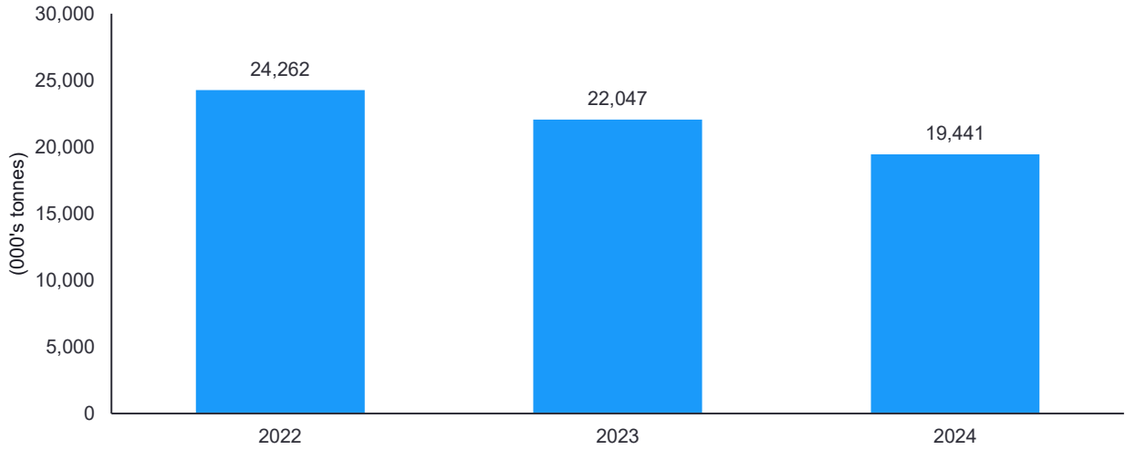
The total cereal supply in the UK reached 24.6 m tonnes in 2024

Figure 30: UK cereal supply, 2024 (000's tonnes)



Source: ONS

Figure 31: UK cereal production, 2022 – 2024



Source: ONS

Total cereal production in the UK, 2024

In 2024, the UK's total cereal production, which mainly includes wheat, barley, oats, and a few minor cereal crops, amounted to just over 19.4m tonnes. This represents a 12% drop compared to 2023 (22m tonnes). The decline was largely due to smaller areas planted with wheat and lower yields, as well as reduced barley yields. These decreases were only partly offset by a slight increase in barley planted area and higher oat production in both area and yield.

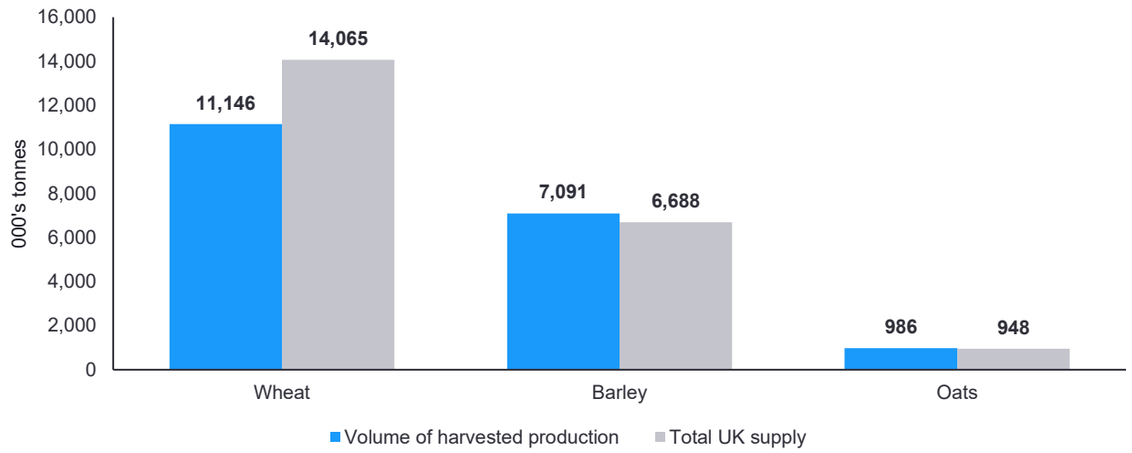
Yields for wheat and barley in 2024 were below those seen in 2023 and generally fell short of the five-year average. The winter planting season was particularly challenging, with heavy rain and flooding causing problems in areas such as the East Midlands, Yorkshire and the Humber. Winter wheat planting was severely disrupted, and poor spring weather also delayed the sowing of spring wheat varieties. Crops grown on well-drained soils tended to perform better than those on heavier, waterlogged clay soils.

Harvesting began in late July and August, with dry, settled conditions benefiting the winter barley crop. However, the wheat harvest faced delays and difficulties as September brought increased rainfall and humid weather. The oat harvest was extended, influenced by both weather conditions and a longer sowing period for the spring crop.

On the trade front, the UK exported just over 1m tonnes of cereal products in 2024 but imported 6.2m tonnes, with 4.4m tonnes coming from the European Union. This meant the total cereal supply in the UK, including domestic production and net imports, reached 24.6m tonnes.

Wheat dominated UK cereal Imports, despite strong domestic production

Figure 32: UK wheat, barley and oats production and supply, 2024



Source: ONS

Total wheat, barley, and oats production, 2024

Wheat, barley, and oats constitute the majority of the UK's cereal production, collectively accounting for approximately 19.2m tonnes, which represents 99% of the total cereal output. Among these, wheat production is the most significant, followed by barley and then oats. In 2024, wheat production reached 11.1m tonnes, barley production was 7.1m tonnes, and oats production stood at 986,000 tonnes.

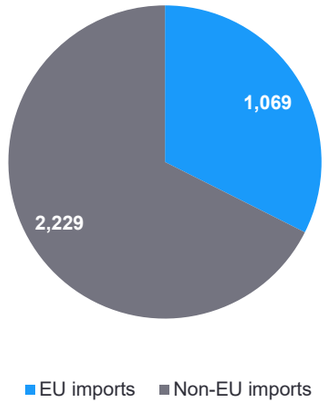
The combined total supply of wheat, barley, and oats in the UK accounted for 21.7m tonnes. The supply of wheat was 14.1m tonnes, barley supply was 6.7m tonnes, and oats supply was 948,000 tonnes.

Trade data indicate that the UK imported 3.3m tonnes of these three key cereals in 2024, with wheat constituting the largest portion of imports. The majority of these imports were sourced from the EU, underscoring the continued economic and food security interdependence between the UK and EU. EU exports of wheat, barley, and oats from the UK totalled 826,000 tonnes, including 623,000 tonnes of barley. Notably, only 226,000 tonnes of barley was imported, which contributed to a reduction in the UK's overall barley supply.

These figures highlight the UK's ongoing reliance on the EU for cereal trade, reflecting integral supply chain linkages that remain vital to the nation's agricultural economy and food security framework.

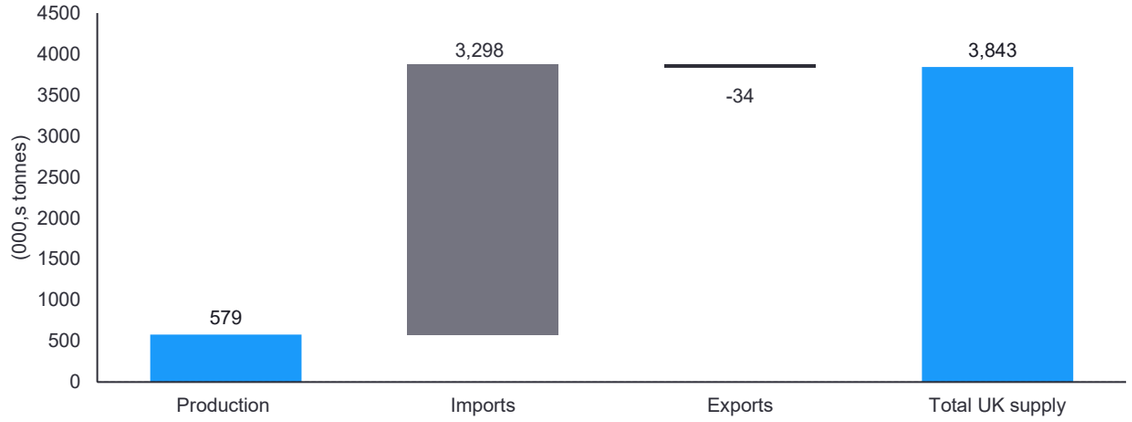
The UK heavily relies on imports for their fresh fruit supply

Figure 33: UK fresh fruit imports, 2024 (000's tonnes)



Source: ONS

Figure 34: UK fresh fruit supply, 2024



Source: ONS

Fresh fruit production and supply in the UK, 2024

In 2024, the UK's fresh fruit production continues to be quite limited, mainly due to the challenges posed by the country's temperate climate. Domestic output is estimated at around 579,000 tonnes, making it a relatively small part of the overall food production landscape. The main fruits grown are dessert apples, culinary apples, pears, raspberries, and strawberries.

The fruit-growing industry faced significant weather difficulties early in the year. January brought severe storms and heavy rain, causing flooding and waterlogged soil, which delayed important farming tasks. February was the wettest and warmest on record, further disrupting planting schedules and the building of protective structures. While the absence of frost allowed pruning to proceed, the poor soil conditions continued into late winter and spring, complicating the planting of key crops like strawberries, raspberries, and new orchards.

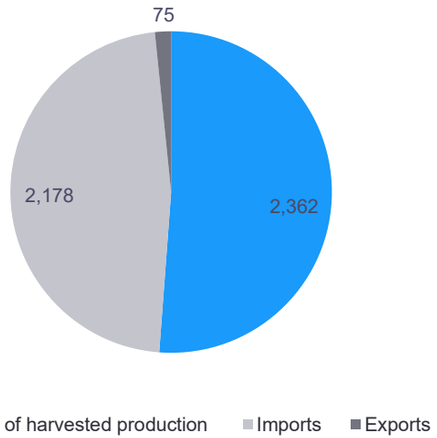
During the critical flowering period in May, cold and unpredictable weather reduced yields for many domestic fruits. Market factors also influenced orchard management. Falling consumer demand for Cox apples, alongside lower yields and rising production costs, sped up efforts to replace Cox trees with more popular and higher-yielding varieties such as Gala, Braeburn, and Jazz.

The total fresh fruit supply in the UK for 2024 is estimated at 3.8m tonnes. The domestic market remains heavily reliant on imports, with 3.3m tonnes brought in or 86% of the total supply. Just under half, or 2.2m tonnes, of these imports come from outside the EU, highlighting the UK's strong dependence on global trade for fruit. This sets the fresh fruit sector apart as one of the few key food areas relying heavily on international suppliers beyond Europe.

Although the UK grows some fresh fruit, domestic production only meets around 15% of the country's overall supply. This significant reliance on imports underscores an important aspect of the UK's approach to food security: ensuring a steady, year-round supply of fresh fruit largely depends on international connections.

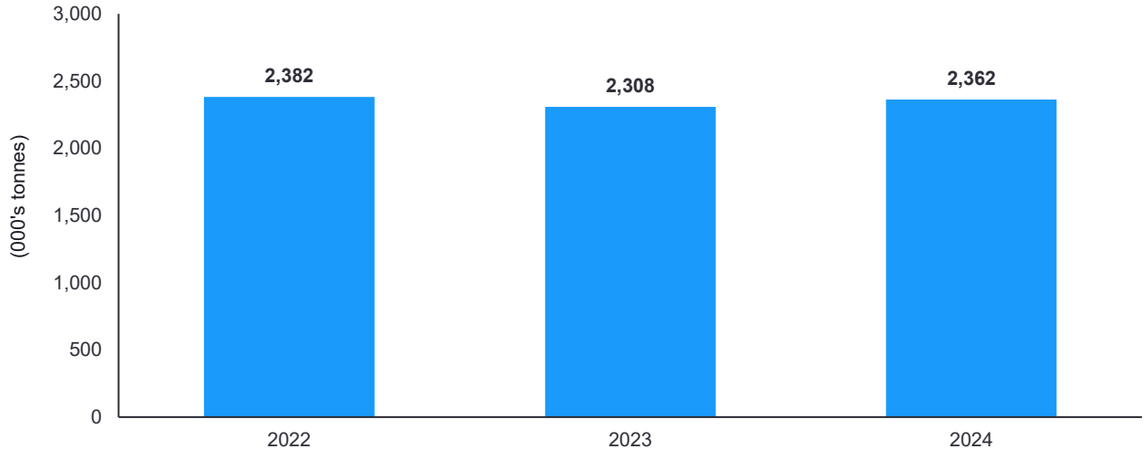
Domestic production accounted for 53% of the total supply, reflecting a slight decrease of one percentage point compared to 2023

Figure 35: UK fresh vegetable supply, 2024 (000's tonnes)



Source: ONS

Figure 36: UK fresh vegetable production, 2022 – 2024



Source: ONS

Fresh vegetables production in the UK, 2024

The production of fresh vegetables in the UK is made up of a diverse range of crops including cabbages, carrots, cauliflowers, calabrese, lettuce, mushrooms, onions, and tomatoes. The UK's temperate climate is particularly well-suited to the cultivation of various root vegetables, enabling consistent domestic production throughout the year. In 2024, the total fresh vegetable harvest in the UK reached approximately 2.4m tonnes, a 2.3% increase from 2023.

Due to the year beginning with an unusually wet spring season, excessive moisture conditions resulted in considerable delays to crop planting schedules, subsequently causing yield reductions and disruptions to planned harvesting activities.

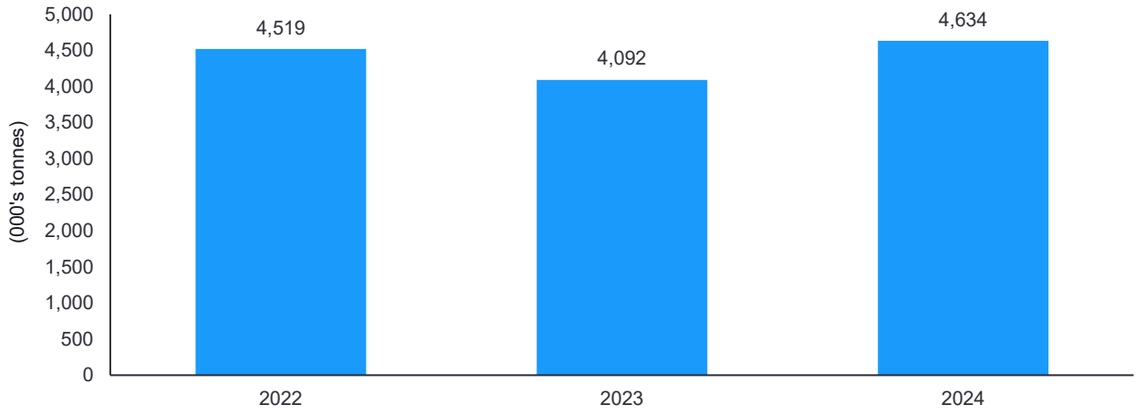
Despite these early challenges, weather conditions improved significantly from mid-July through mid-September. A period of relatively dry and stable weather fostered robust crop development, allowing growers to recuperate from earlier delays. Additionally, a warmer-than-average autumn contributed positively to crop maturation, enabling many producers to catch up with their production timelines. Nevertheless, occasional wet spells during this period continued to pose some operational difficulties for growers.

Of the total 2.4m tonnes of fresh vegetables harvested, approximately 75,000 tonnes were exported, with 72,000 tonnes sent to the EU market. This highlights the importance of the EU as a key trading partner for UK vegetable exports.

Despite strong domestic production, the UK remains reliant on imports to satisfy consumer demand for a wider variety of fresh vegetables, particularly those that cannot be grown domestically due to climatic or seasonal limitations. In 2024, imports amounted to around 2.2m tonnes, contributing to a total UK fresh vegetable supply of approximately 4.6m tonnes. Domestic production accounted for 51% of the total supply.

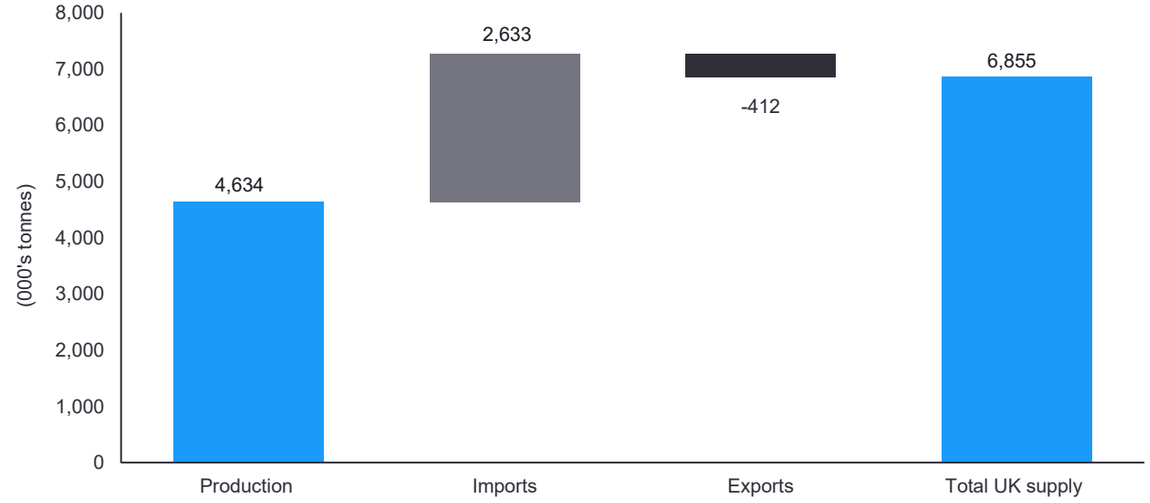
Potato production and supply remained a cornerstone of the UK's food industry, ranking among the top three sectors in total food production and supply nationwide

Figure 37: UK potato production, 2022 - 2024



Source: ONS

Figure 38: UK potato supply, 2024



Source: ONS

Potatoes production in the UK, 2024

In 2024, potato production and supply remained a cornerstone of the UK's food industry, ranking among the top three sectors in total food production and supply nationwide. The UK successfully harvested 4.6m tonnes of potatoes during the year, reflecting a 13% increase compared to the 4.1m tonnes recorded in 2023.

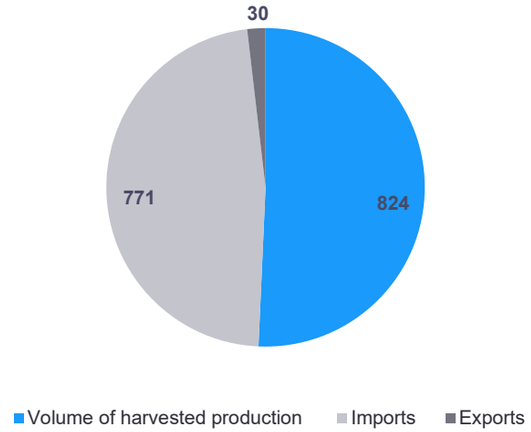
The spring planting season faced notable challenges, with a delay of approximately one month attributable to persistently wet weather conditions. This delay was particularly pronounced in areas with silty or heavy soils, which experienced slower crop development. Conversely, potatoes grown on lighter soils were comparatively less affected, demonstrating slightly accelerated growth relative to heavier soil types. Nitrogen leaching remained a significant concern, with widespread occurrences in waterlogged fields during the first quarter, replicating the environmental challenges observed in the previous year.

Across the UK, crop development lagged behind typical schedules, with full canopy closure only being achieved post-summer solstice. In response, many cultivators adopted early desiccation techniques to expedite the harvesting process. While this approach involved accepting a reduction in yield, it was considered a prudent measure to mitigate the risk of total crop loss. This strategy was informed by the difficulties faced in the previous year, when autumn rainfall made numerous fields unharvestable, resulting in significant losses.

In terms of trade, the UK exported 412,000 tonnes of harvested potatoes. Simultaneously, the nation imported approximately 2.6m tonnes to reach domestic demand. Therefore the total potato supply available within the UK market in 2024 reached 6.9m tonnes. Domestic production accounted for 68% of this supply, while imports made up the remaining 38%, underscoring the country's continued reliance on both local cultivation and international sources to meet consumer demand.

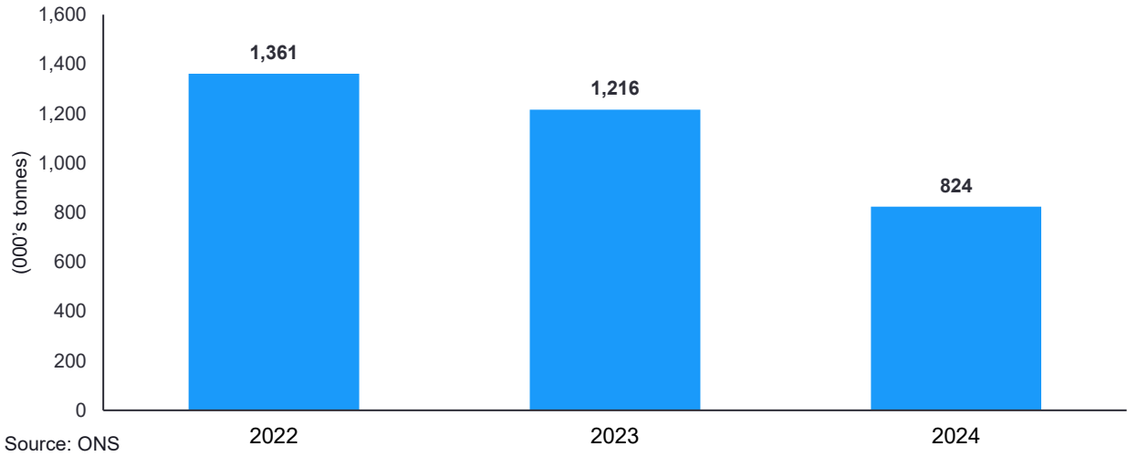
Imports accounted for 47% of the UK's oilseed rape supply in 2024

Figure 39: UK Oilseed rape supply, 2024 (000's tonnes)



Source: ONS

Figure 40: Domestic oilseed rape production, 2022 – 2024



Source: ONS

Oilseed rape production in the UK, 2024

In 2024, the UK harvested a total of 824,000 tonnes of oilseed rape, representing a substantial decrease of 32% compared to the 1.2m tonnes recorded in 2023.

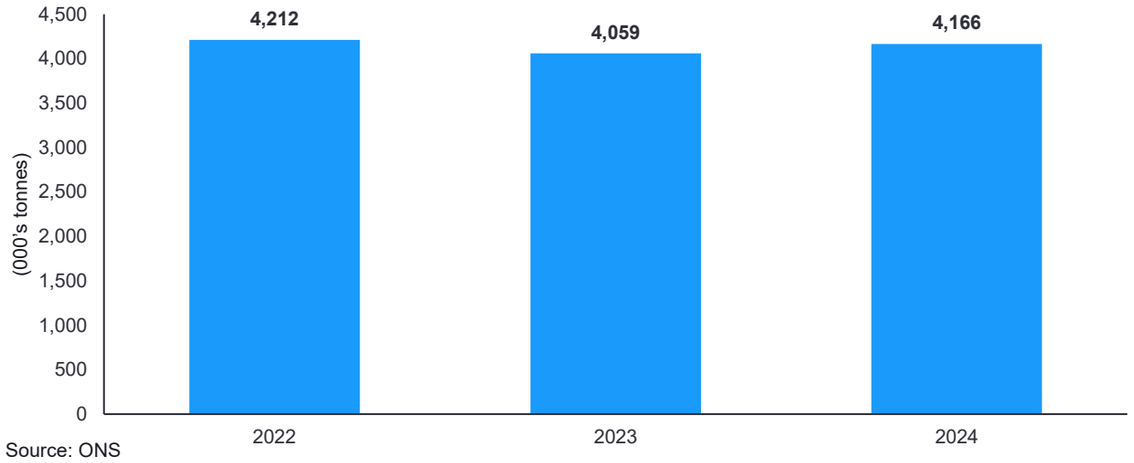
The decline in both production volume and cultivated area occurred due to a series of challenging agricultural conditions. Between September 2023 and May 2024, the UK experienced unprecedented rainfall levels, resulting in waterlogged fields that delayed sowing and slowed down crop establishment. These weather conditions significantly impacted the growth cycle and overall health of oilseed rape crops. Furthermore, pest pressures from species such as the cabbage stem flea beetle and pollen beetles further compromised the crops and potential yields.

Economic considerations also influenced growers' decisions. The period leading up to planting was marked by depressed market prices for oilseed rape, coupled with a trend of disappointing financial returns in preceding years. These factors collectively diminished the attractiveness of oilseed rape cultivation, prompting many farmers to reduce their planted acreage or opt for alternative crops.

In terms of supply, the total availability of oilseed rape in the UK during 2024 amounted to 1.6 m tonnes. Of this, imports made up a large proportion, with 771,000 tonnes, equivalent to 49% of the total supply, being brought in from overseas. Meanwhile, UK exports of oilseed rape were relatively low, totalling 30,000 tonnes and directed exclusively to EU markets.

This diverse and robust meat production sector is essential not only for meeting domestic demand but also for supporting economic stability and sustainability within the agricultural industry

Figure 41: UK meat production, 2022 - 2024



Source: ONS

Meat production

Livestock agriculture plays a critical role in the UK's food production system and significantly contributes to the nation's overall food security. From 2022 to 2024, total meat production has consistently exceeded 4m tonnes, underscoring its continued importance within the UK's food supply chain. In 2024, the UK recorded a meat production volume of 4.2m tonnes, representing a 2.6% increase compared to the previous year. This follows a decline from 4.2m tonnes in 2022 to 4.1m tonnes in 2023. The recent rebound in production highlights a positive trend after the prior decrease. Various factors influence these fluctuations, including changes in livestock numbers and prevailing climatic conditions, both of which have a direct impact on agricultural output. Understanding these dynamics is essential for ensuring the resilience and sustainability of meat production in the UK.

Meat production in the UK, 2024

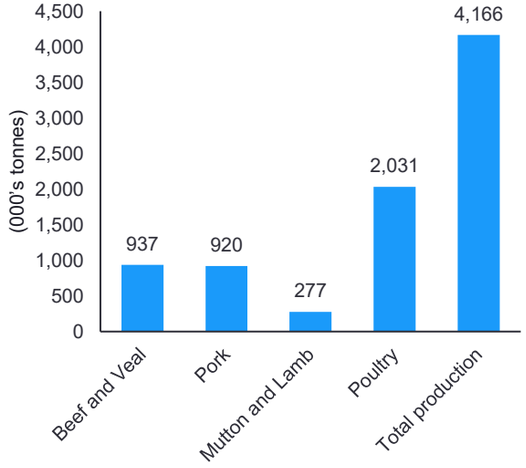
The industry is made up of primarily four categories: beef and veal, pork, mutton and lamb, and poultry meat. Among these, poultry meat is the largest contributor, representing nearly half (49%) of the nation's total meat production.

Beef and veal production accounted for 937,000 tonnes, while pork production was close behind at 920,000 tonnes, each constituting approximately 22% of the overall output. Mutton and lamb, although representing a smaller share at around 7% of the total production, still contributed a significant volume of 277,000 tonnes.

The livestock that make up the UK's meat production are predominantly indigenous species such as cows, pigs, and sheep, together supplying more than half of the total meat volume. While poultry species, including chickens and turkeys, are not originally native to the UK, they are extensively farmed within the country and play a vital role in ensuring the nation's food security.

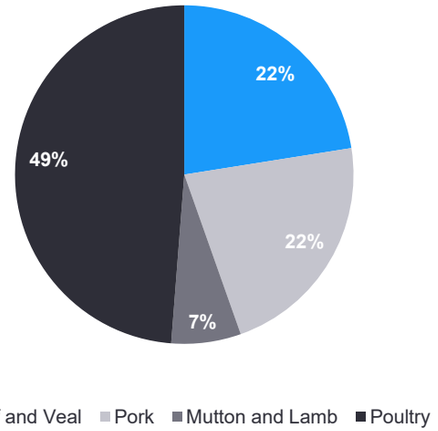
This diverse and robust meat production sector is essential not only for meeting domestic demand but also for supporting economic stability and sustainability within the agricultural industry. Continued focus on efficient and responsible farming practices will be key to maintaining and enhancing the UK's position in meat production in the years ahead.

Figure 42: UK meat production, 2024



Source: ONS

Figure 43: Production breakdown (000's tonnes), 2024



Source: ONS

The UK beef and veal industry produced 937,000 tonnes of meat

UK beef and veal sector overview, 2024

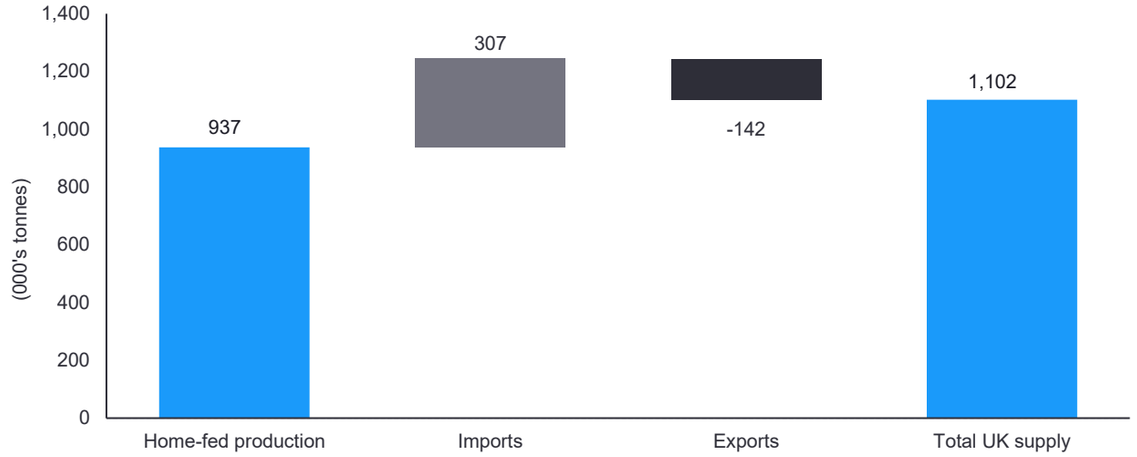
In 2024, the UK beef and veal industry kept up high production levels, reaching a total output of 937,000 tonnes. The sector faced notable challenges in the early part of the year, mainly due to poor weather during the first quarter and into the second. This extended the winter housing period and delayed the grazing of cattle. At the same time, limited forage availability meant a greater reliance on supplementary feed, which pushed production costs higher as input prices stayed elevated for much of the year.

Despite these difficulties, the sector showed resilience, supported by steady output prices and a clear commitment to supply chain sustainability, including efforts to reduce the age at slaughter. Producer confidence remained strong, helping supply exceed early forecasts for 2024. Better weather and pasture conditions later in the year also improved production of home-fed beef and veal.

Of the 937,000 tonnes produced, the UK exported 142,000 tonnes, with 122,000 tonnes going to the European Union and 20,000 tonnes sent to other global markets. This underlines the UK's continued role as a key supplier to the EU beef and veal market. At the same time, imports of cattle meat totalled 307,000 tonnes, bringing the overall domestic supply to around 1.1 m tonnes.

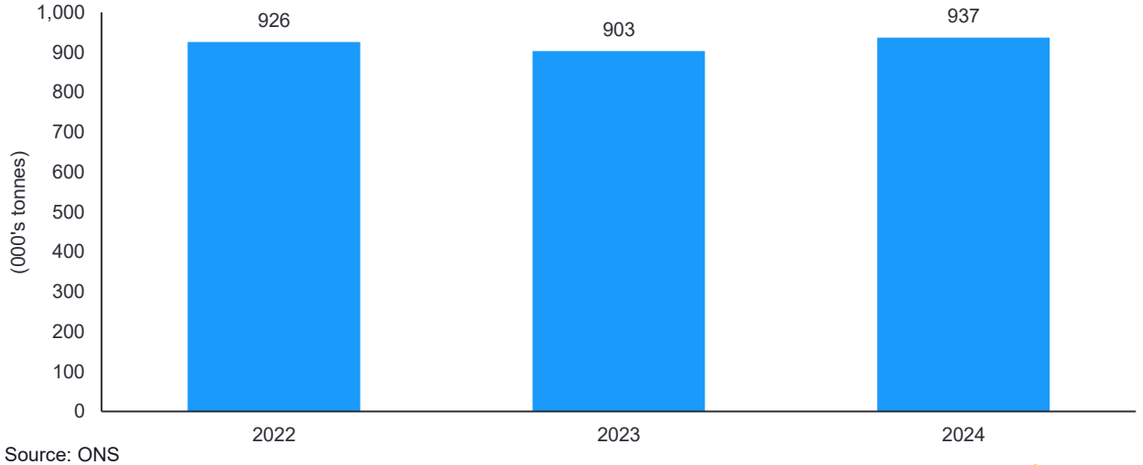
This balance between domestic production and imports played a crucial role in maintaining the country's food security throughout 2024 while meeting the needs of the home market. Looking forward, the sector is expected to keep focusing on sustainability, managing costs, and diversifying markets to strengthen its place in the global beef and veal industry.

Figure 44: UK beef and veal Supply, 2024



Source: ONS

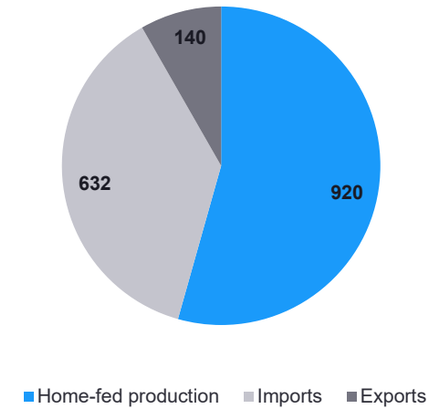
Figure 45: UK beef and veal production, 2022 - 2024



Source: ONS

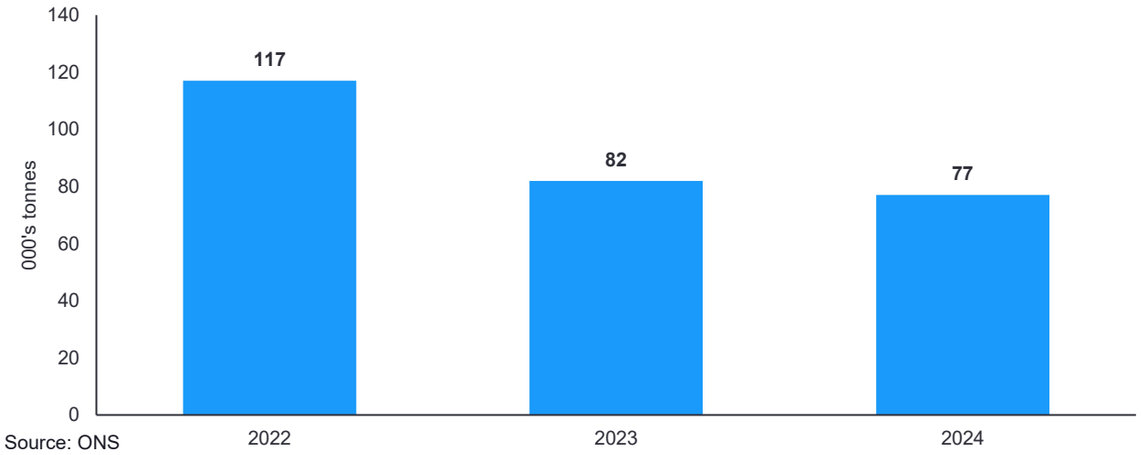
The UK imports 44% of pork meat

Figure 46: UK pork supply breakdown, 2024, (000's tonnes)



Source: ONS

Figure 47: Total UK pig exports to EU, 2022 – 2024



Source: ONS

UK pork industry overview, 2024

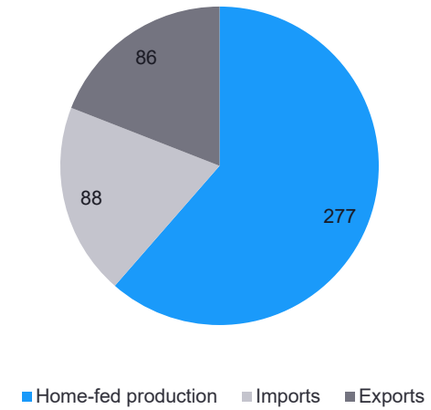
In 2024, the UK produced a total of 920,000 tonnes of pork meat. This output was achieved despite a reduction in the size of the breeding herd, largely attributable to increased average carcass weights and enhanced productivity among sows within the breeding population. Of the total production, 140,000 tonnes were exported, while imports reached 632,000 tonnes. Consequently, the overall UK pork supply amounted to approximately 1.4m tonnes.

The data indicates a significant reliance on imported pork, with imports accounting for 45% of the total pork supply in the UK. Notably, the vast majority of these imports, 630,000 tonnes out of 632,000 tonnes, originated from the European Union. This underscores the continued dependence of the UK pork supply chain on EU sources, even in the post-Brexit context.

Trade volumes throughout 2024 remained relatively stable, with the EU and China continuing to serve as key export destinations for UK pork products. However, it is important to highlight a decline in exports to the EU since 2022, with volumes decreasing from 117,000 tonnes to 77,000 tonnes. This trend is notable given the UK's ongoing reliance on the EU for pork imports.

The overall supply of mutton and lamb reached 277,000 tonnes in 2024, down from 2023

Figure 48: UK mutton and lamb supply, 2024 (000's tonnes)



Source: ONS

Mutton and lamb supply overview, 2024

In 2024, lamb and mutton accounted for about 7% of the UK's total meat production, highlighting the importance of this sector within the country's agricultural industry. The total supply of mutton and lamb reached 279,000 tonnes, with domestic production providing 277,000 tonnes. The UK supplied 99% of its own consumption, showing a strong level of self-sufficiency in sheep meat.

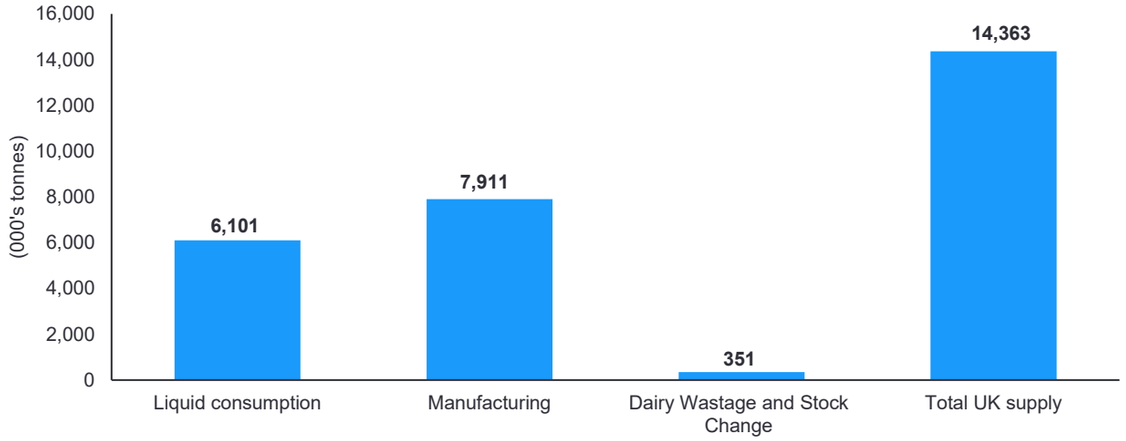
The UK sheep industry faced several challenges during 2024 that put pressure on supply. The number of clean sheep slaughtered fell compared to the previous year, and home-fed mutton and lamb production also dropped to 277,000 tonnes, down from 2023. These declines were mainly due to disease outbreaks in the first quarter and difficult weather conditions in spring, both of which impacted lambing success and led to fewer animals being slaughtered.

Despite these hurdles, there was still enough sheep meat available to meet most of the country's demand. However, imports rose to help meet the higher consumer demand and increased consumption levels. Imports of mutton and lamb grew to 88,000 tonnes, while exports slightly fell to 86,000 tonnes. This near balance between imports and exports reflects a steady trade flow and underlines how much the UK's mutton and lamb supply relies on domestic production.

The trade balance and production figures together show the resilience of the UK's agricultural sector, which continues to support both local consumption and international trade. These numbers highlight the vital role of domestic production in meeting national needs, while also maintaining a healthy involvement in global markets through carefully managed imports and exports. This balanced approach helps ensure the sustainability and competitiveness of the UK sheep industry in the face of changing market conditions and external challenges.

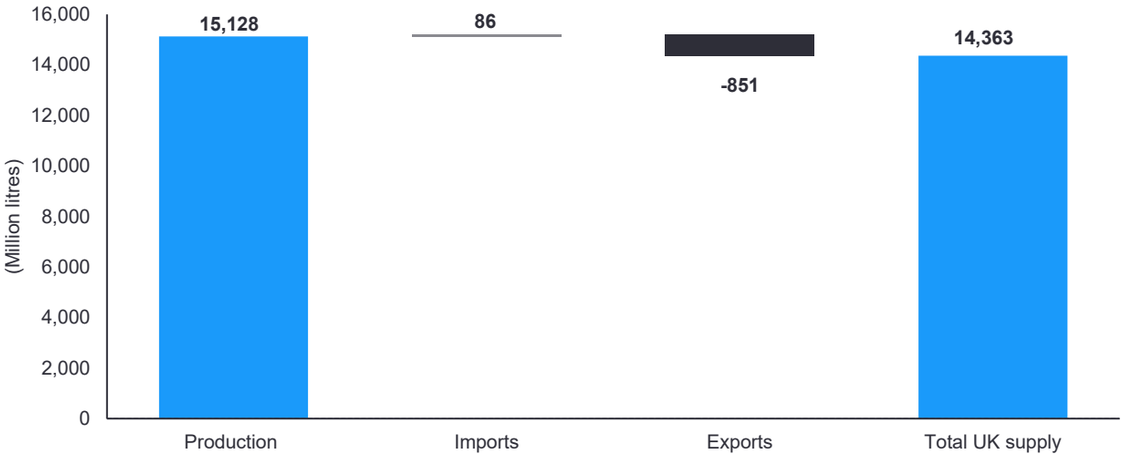
Cheese production placed pressure on milk production in 2024, accounting for 4.7m tonnes, underscoring its significance within the UK dairy industry.

Figure 49: UK milk supply breakdown, 2024



Source: ONS

Figure 50: UK milk supply 2024



Source: ONS

Milk production and supply in the UK, 2024

In 2024, milk production and supply in the UK remained among the highest in the food production sector, ranking just behind cereal production. The country produced a total of 15.1m tonnes of milk intended for human consumption.

Despite this overall growth, during the first nine months of 2024, milk production in the UK fell compared to the previous year. This drop was mainly due to low farmgate milk prices (FGMPs) and persistent wet weather in the first half of the year, which made farming more difficult. FGMPs gradually improved during this time, helped by stronger prices for dairy products driven by supply shortages both at home and globally.

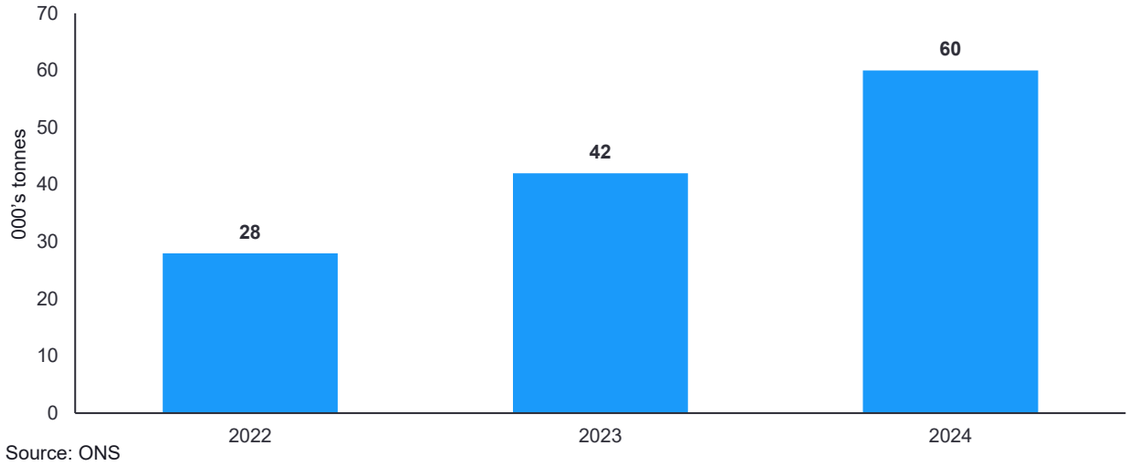
Milk production bounced back in the early part of the fourth quarter, exceeding the amount produced during the same period in 2023. This recovery was supported by rising FGMPs, better weather, and a slight drop in farm costs. Production remained strong into the winter months of 2024-25, helped by lower feed costs that eased the effects of poor silage quality caused by the wet summer. NI played a key role in this boost in production.

In terms of trade, the UK imported 86,000 tonnes of milk in 2024, while exporting a much larger volume of 851,000 tonnes. Consequently, the total UK milk supply amounted to 14.4m tonnes, indicating that domestic production covered approximately 105% of the nation's milk consumption requirements.

The composition of the UK's total milk supply of 14.4m tonnes was categorised into three primary uses: liquid consumption, manufacturing, and dairy wastage and stock change. Of this supply, 6.1m tonnes were directed towards liquid consumption, 7.9m tonnes were utilised for manufacturing various dairy products, and the remaining 351,000 tonnes accounted for other dairy wastage or stock change. The manufacturing segment included a variety of dairy products including butter, cheese, cream, yoghurt, condensed milk, and milk powders. Among these, cheese production was the largest consumer of milk in 2024, accounting for 4.7m tonnes, underscoring its significance within the UK dairy industry.

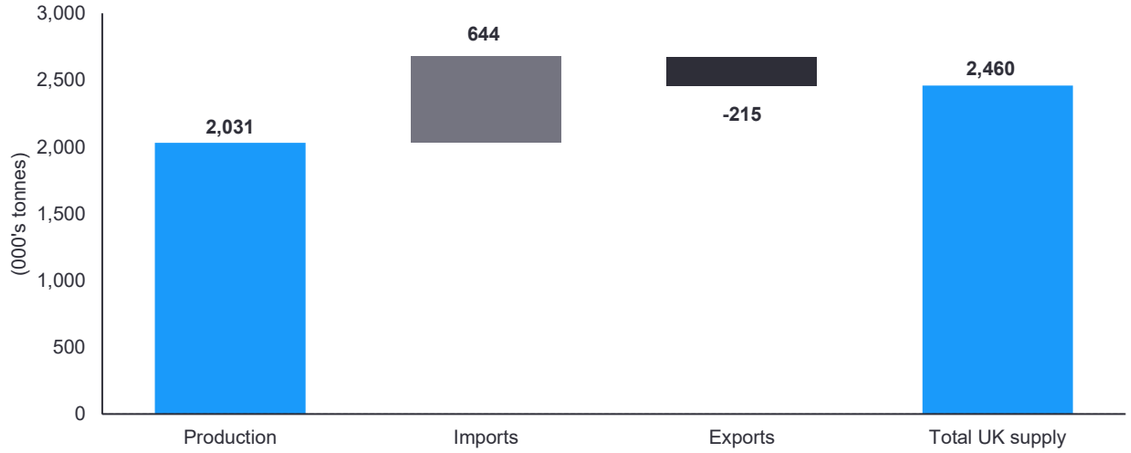
Poultry production represented the largest share of the UK's total meat production, with an output of 2 m tonnes

Figure 51: UK poultry imports from the rest of the world, 2022 - 2024



Source: ONS

Figure 52: UK poultry supply, 2024



Source: ONS

Poultry production in the UK, 2024

In 2024, poultry production represented the largest share of the UK's total meat production, with an output of 2m tonnes. This growth was primarily driven by increased production of table chicken meat, as well as turkey and duck

The UK exported 215,000 tonnes of poultry meat during the year, with 72% of these exports directed to the EU. The UK imported 644,000 tonnes of poultry, of which 91% (584,000 tonnes) originated from EU countries. These substantial import and export figures underscore the UK's ongoing economic interdependence with its European neighbours, highlighting the importance of the EU in meeting the country's poultry demand and ensuring food security.

Despite these high production and trade volumes, the total poultry population within the UK declined by 2.1m birds, reaching 176m in 2024. Domestic production accounted for 83% of the total poultry meat supply, reflecting the industry's significant role in fulfilling national demand. While imports from the EU remained relatively stable compared to 2023, imports from non-EU countries increased by 43%, rising from 42,000 tonnes to 60,000 tonnes in the same year.

Overall, the UK's total poultry meat supply in 2024 amounted to 2.5m tonnes. Domestic production accounted for 83% of this supply, while imports comprised 26%, demonstrating the country's substantial capacity to meet its poultry needs through home production alongside strategic international trade.

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