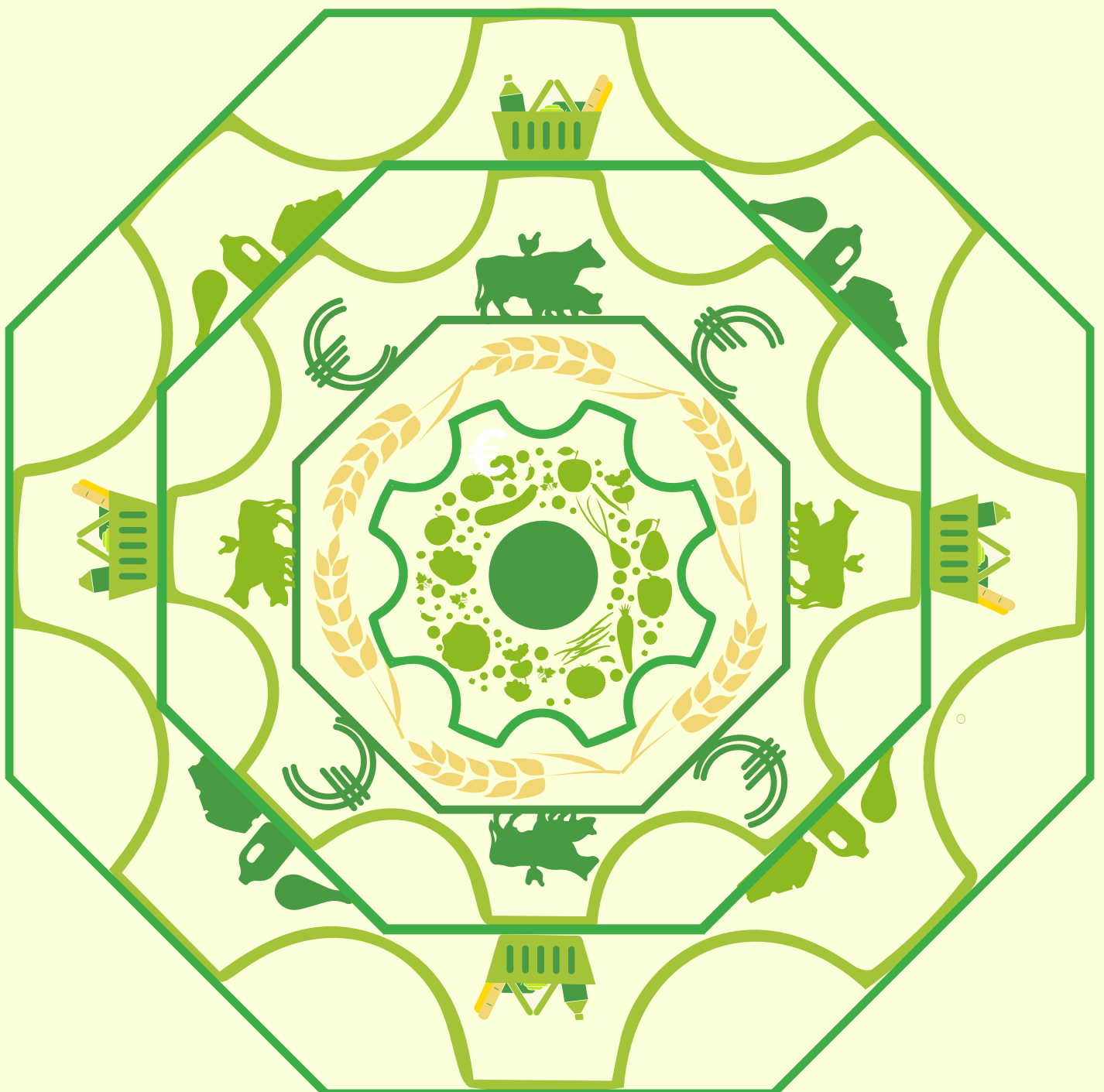


Farm to Finance: The Processor-Farmer Nexus in Ireland's Agricultural Climate Transition

by Matthew G. O'Neill



Acknowledgements

The IIEA and the author would like to thank the following for their invaluable assistance in the drafting of this paper:

Prof. Alan Matthews

Grace O’Sullivan, IIEA

Members of the IIEA Agriculture and Climate Stakeholder Forum

Interview Participants

The IIEA also extends its gratitude to the **European Climate Foundation**, whose support in the establishment of this project is greatly appreciated.

TABLE OF CONTENTS

Executive Summary	1
Introduction	2
SECTION 1: THE FARMER-SUPPLIER RELATIONSHIP IN THE AGRI-FOOD TRADE	3
The Irish Agri-Food Chain	3
The Processor-Farmer Relationship	4
The Policy Context	6
EU Agricultural Policy Levers	6
Policy Levers Supporting Ireland’s Agri-Food Transition	10
SECTION 2: SUPPLY CHAIN INITIATIVES TO ACCELERATE CLIMATE ACTION	12
The Science Based Targets initiative (SBTi)	12
Company Size and Sustainability Commitments	13
Practice Adoption and Technology	15
Regulatory Reforms in Agricultural Insurance Pricing	16
The Industry and Government Response	17
SECTION 3: STAKEHOLDER INTERVIEWS AND DISCUSSION	18
Emerging Themes from Stakeholder Interviews	18
Pressures and Responsibility for Climate Action	19
Processor-Level Dynamics	20
Sector-wide “climate fatigue” and blame narratives	21
Building Trust and Transparency in the Supply Chain	21
Concerns over data privacy and regulatory frameworks for Scope 3 emissions reporting	22
Emerging Tech	23
Effective Incentive Models for Sustainability	24
Cost Allocation and Financial Strain	25
What is the Role of Public and Private Finance?	26
CONCLUSION AND RECOMMENDATIONS	29

List of Abbreviations

CAP - Common Agricultural Policy

CBAM - Carbon Border Adjustment Mechanism

ESG - Environmental, Social, and Governance

EU - European Union

LULUCF - Land Use, Land Use Change and Forestry

SBTi - Science-Based Targets initiative

SDAS - Sustainability Data Collection and Improvement

SDP - Sustainable Dairy Partnership

Executive Summary

Ireland's agri-food sector emissions remain high compared to other sectors, standing at 37.8% of the national total, and the sector faces unique challenges in balancing its climate targets against its future competitiveness. Both processors and farmers in the sector are tasked with reducing their greenhouse gas emissions (GHG), meeting national and EU sustainability targets, and transitioning or adapting to new market opportunities and an evolving regulatory environment.

While acknowledging the broader context of Ireland's agricultural transition, this paper focuses on the processor-farmer relationship as a potential leverage point for implementing climate-aligned farming practices and examines how food processors and manufacturers within Ireland's agricultural supply chain are driving the sustainability transition at the farm level.

In this evolving landscape, farmers are asked to deliver most of the sector's emission reductions, yet they often lack the financial support, technical tools, and market incentives necessary to do so. Processors, meanwhile, face mounting downstream pressures to demonstrate sustainable sourcing, but are limited in their ability to drive farm-level change without coherent support frameworks.

This paper provides the policy context for the discussion, to aid the reader in understanding how different policies and levers have been used and to inform the current context of the processor-farmer relationship, before examining the structural and economic factors that shape the relationship. Drawing on policy analysis and extensive stakeholder interviews, the paper investigates how Ireland's dense agricultural policy legacy, evolving supply chain dynamics, and climate imperatives intersect.

Four key themes emerged during the data collection phase of the research:

- First, was a **widespread sense of climate fatigue and trust erosion** across the supply chain itself. While there are innovative programmes promising incentive models to support farmers, stakeholders express the view that supports remain unevenly distributed and disconnected from downstream consumer price signals.
- Second was the parallel challenge in the **fragmented data landscape**. Without widespread access and equal support across the sector to systems for monitoring, reporting, and verifying emissions, both farmers and processors face uncertainty that inhibits investment and planning.
- Third was the **challenge of intergenerational renewal** which is increasingly shaping the agricultural sector. Stakeholders expressed concern that this is being hindered by both economic precarity and a perception that farming lacks a viable future.

To address these challenges, this report recommends:

- strengthening MRV platforms like AgNav (which is to be launched soon);
- examining how Ireland could design hybrid financing models that de-risk on-farm investment in the climate transition; and
- promoting a fairer distribution of sustainability costs across the food chain.

Further efforts are also needed to broaden incentive access, integrate emerging technologies equitably, and institutionalise stakeholder dialogue to support legitimacy and alignment within this space – in particular, young farmers' voices should be amplified on these issues as they will be the leaders within this space. Importantly, climate ambition must be matched with credible economic pathways that maintain generational renewal and rural community resilience.

Building trust, enabling data transparency, and co-financing the transition are important to enable better long-term decision-making as well as setting preconditions for policy success, and by enabling a shared understanding that food production is a public good requiring public and private investment alike.

Introduction

In the first publication in the IIEA project *Pathways: Ireland's Agricultural Future*, the authors examined the complex architecture of climate change policies at both European Union and at a national level, with a specific focus on Ireland's agri-food sector.¹ Less attention has been paid to how the costs and responsibilities of this sustainability transition are distributed within the food supply chain - especially between farmers and processors.

This paper examines how the food processors and farmers in Ireland's agricultural supply chain are driving the sustainability transition at the farm level. While acknowledging the broader context of Ireland's agricultural transition, both actors recognise the urgency of climate action. At present the transition is marked by fragmented incentives, interlinked issues of trust and data, and an uneven distribution of financial and regulatory burdens.

The findings here show that the processor-farmer relationship in Ireland is under increasing strain from the convergence of environmental policy, market volatility, and shifting public expectations. Drawing on stakeholder interviews, this paper finds that farmers are expected to deliver emissions reductions but often lack sufficient market rewards or institutional support. While processors are increasingly adopting climate-aligned programmes, such as sustainability-linked bonuses and data-driven assurance schemes. These efforts remain fragmented, however. Although it is fair to note that the private sector response, particularly in the dairy sector, through sustainability-linked payment schemes as well as the development and collaborative advisory networks are helping to align environmental and economic priorities.

The first section of this paper offers an analysis of Sustainability Commitments of processors within the dairy and meat sectors. Data for this study were collected from two primary sources, namely the Science Based Targets initiative (SBTi) database and publicly available corporate sustainability reports for dairy and meat companies operating in Ireland. The SBTi dataset included information on Irish companies' climate commitments. The second dataset, which was compiled manually, contains qualitative and quantitative emissions target data from for key Irish dairy and meat producers. These include Scope 1, 2, and 3 emissions targets, combined emissions goals, and overall reduction ambitions.²

The second half of this paper consists of stakeholder interviews and discussion of the findings. Semi structured interviews were employed with 12 stakeholders across the processor, farmers and financial sectors, in addition to input from the IIEA's Agriculture and Climate Stakeholder Forum.³ The interviews collected provided both depth and structure to understanding relational dynamics and systemic barriers in relation to the sustainability transition of Irish agriculture.

Finally, the paper concludes with recommendations based on the data gathered.

1 Matthews, A. and O'Neill, M. G (2025) *From Policy to Pasture: Bridging the Gap Between Climate Targets and Irish Agricultural Realities*. The Institute for International & European Affairs. <https://www.iiea.com/publications/from-policy-to-pasture-bridging-the-gap-between-climate-targets-and-irish-agricultural-realities>.

2 The original Excel datasets used in this study are fully accessible via the Pathways Project section of the IIEA website. These resources are free to use for research and analysis. Users are encouraged to share any updates or enhancements with the project team to support ongoing collaborative efforts.

3 To ensure confidentiality, all interview notes were anonymised by replacing names and other potentially identifying details with codes. Only the Pathways Project research members had access to the original data, and all results are reported in a way that prevents identification of individual participants.

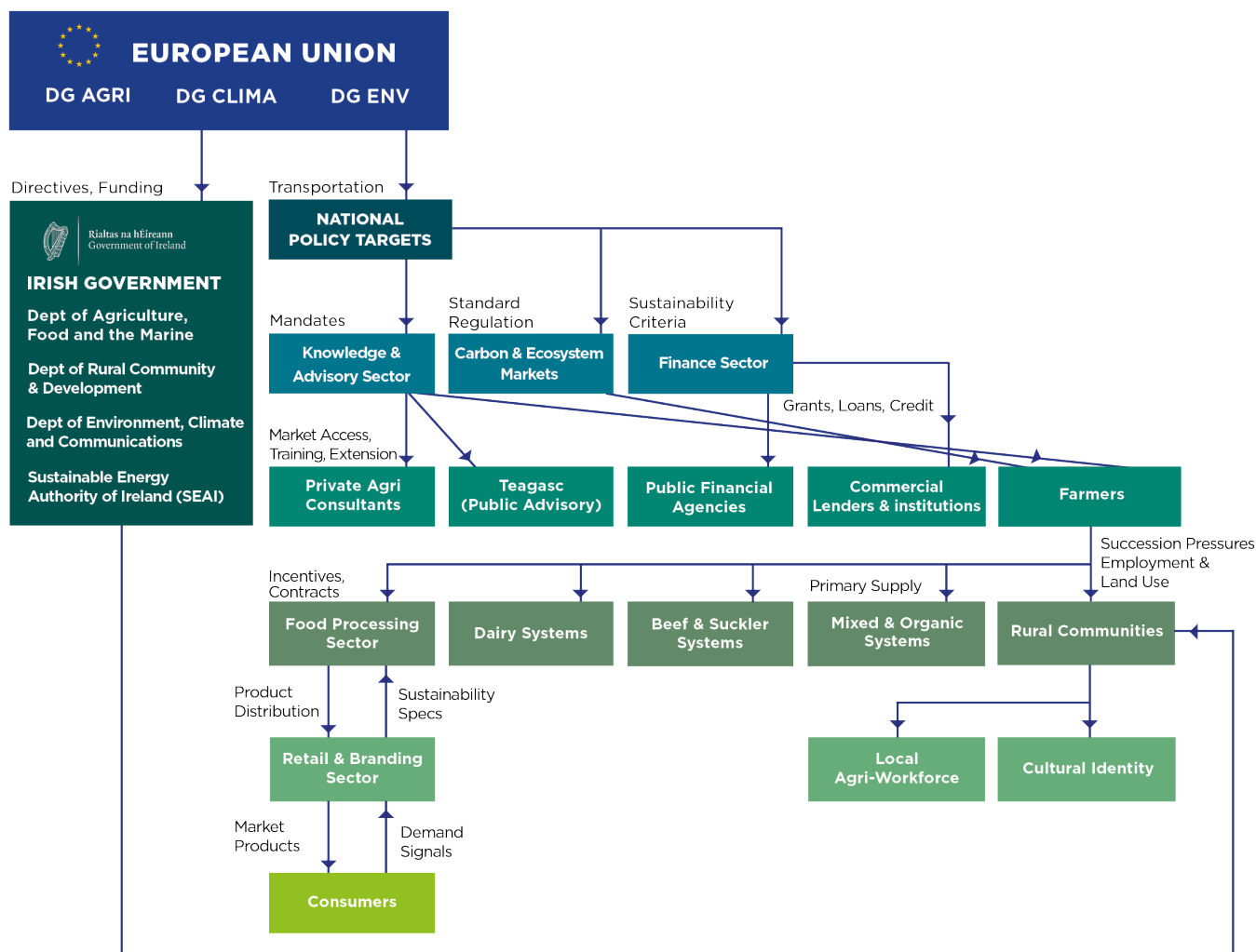
Section 1: THE FARMER-SUPPLIER RELATIONSHIP IN THE AGRI-FOOD TRADE

The Irish Agri-Food Chain

Today's farmers and processors operate in a landscape in which economic viability and environmental sustainability are inextricably linked. Figure 1 shows the current agri-food chain and the multiple stakeholders involved in it. It is comprised of interdependent relationships rather than being a linear supply chain(s). This was reflected in Ireland's Food Vision 2030,⁴ which stressed the linkages between food, climate, environmental, and public health priorities and policies. Understanding the Irish agri-food chain requires us to recognise that it is complex, with multi-layered networks and actors of influence who push, guide and are directed by both market, institutional and societal forces. Figure 1 distinguishes three of these, namely;

- Primary production systems (dairy, beef & suckler, mixed & organic)
- Intermediary actors (processors, distributors, retailers)
- Governance frameworks (EU and national government/bodies)

Figure 1. Relationships in the Irish agri-food chain (own research based on stakeholder interviews).



⁴ Food Vision 2030 - a world leader in sustainable food systems (no date). <https://www.gov.ie/en/department-of-agriculture-food-and-the-marine/policies/food-vision-2030-a-world-leader-in-sustainable-food-systems/>.

Before exploring the processor-farmer relationship, it is important to understand the institutional aspects of the agri-food value chains, in which policy actors, private and public finance, agri advisory services, legislation and regulation all interact within the market. These relationships have direct or indirect impacts for both the farmer and processors within the chain. At the vertical level, the diagram identifies the full market chain, extending from primary production systems (these include dairy, beef & suckler, mixed & organic) through processing sectors, retailers, branding and packaging, and finally the consumer.

Figure 1 aims to capture the flow of value addition and distribution in the Irish agri-food economy. The diagram is based on the collected interviews with various stakeholders and is informed by their perspectives and engagement with the actors mentioned. These actors facilitate coordination, knowledge transfer partnerships, and access to finance across the agri-food chain. Within the system itself, institutions play an important role in how the agri food chain delivers food to the consumer as well as remaining competitive in a global marketplace.

It is important to note that, in respect to the processor-farmer relationship, stakeholders on both sides note that peer-level interactions are essential, as they determine how quickly and effectively new practices and technologies can be adopted in response to climate change and targets. It also highlights the importance of ensuring that policy frameworks, financial instruments, and advisory services are coherently aligned with market incentives if Ireland's climate and environmental targets are to be met without undermining the sector's economic viability.

Furthermore, emerging market mechanisms should be considered when thinking about the structure of the agri-food chain, such as carbon and ecosystem markets, to enhance awareness of how sustainability imperatives are becoming operationalised within agri-food value chains. This anticipates a future in which environmental asset trading is integrated into standard value chain activities, reinforcing the convergence of economic and ecological objectives under Ireland's national and EU-level climate strategies.

The Processor-Farmer Relationship

Looking at Figure 2 we can see that the processor-farmer relationship in Ireland increasingly operates as a multi-dimensional system, that is not only characterised by the physical movement of products but is increasingly dependent on information exchange or knowledge transfer. The primary material flows are products such as milk, livestock, and grain moving from farmers to processors, forming the core of the traditional agri-food chain.

However, this relationship is now complemented by a range of technical specifications, contractual obligations, and incentive structures provided by processors to farmers, reflecting a deeper integration of supply chain management. The emerging presence of "Carbon & Nature Markets" and associated "Data & Verification" channels represents the next steps in this relationship and capacity to respond to changes in the market due to climate change.

Figure 2. The Processor- Relationship with Agri-Food Chain Shocks (own compilation)

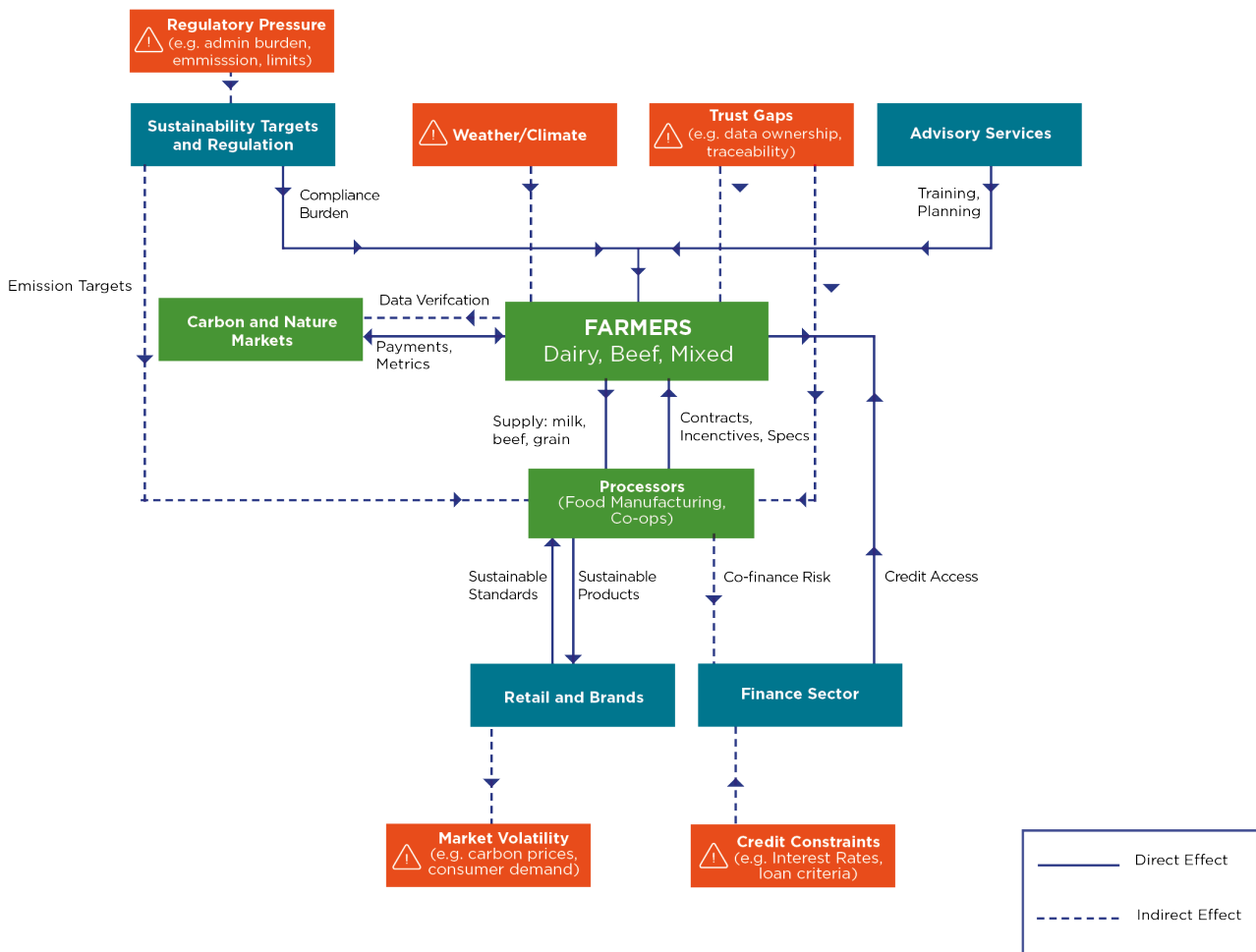


Figure 2 demonstrates how external actors exert influence on this core relationship:

- The finance sector provides credit and transition loans to farmers while offering co-investment options to processors.
- Advisory services deliver knowledge and training that shape farm practices.
- Retail and brand demands for sustainable products drive processor requirements.
- Overarching sustainability targets and standards create compliance pressures for both actors.

The agricultural value chain is exceptionally vulnerable to various shocks to the system, as shown in the outer ring in the farmer processor relationship in Figure 2, which can disrupt operations, place pressure on relationship dynamics, and impede climate transition efforts. Extreme weather events represent perhaps the most direct threat to the processor-farmer relationship. In the EPA report *Ireland's Climate Change Assessment*, the authors noted that “[t]he lengthening of the growing season is often given as an example of a positive aspect of climate change for agriculture; however, gains could be offset by extreme events such as longer and more intense droughts increasing crop losses, especially in spring and summer seasons”.⁵ Ireland’s predominantly grass-based livestock systems face particular vulnerabilities to precipitation anomalies and temperature extremes. These climate shocks create cascading effects throughout the value chain. When farmers experience production shortfalls, processors face input constraints that affect manufacturing schedules, product quality, and market commitments.⁶

The processor-farmer relationship is also vulnerable to market shocks, particularly input price volatility. Recent fertiliser market analysis indicates continuing high prices and volatility expected through 2025, with volumes potentially “down

5 Cotter, E. et al. (2023) IRELAND'S CLIMATE CHANGE ASSESSMENT, Synthesis Report. Environmental Protection Agency. https://www.epa.ie/publications/monitoring-assessment/climate-change/ICCA_Synthesis_Report.pdf

6 Tchonkouang, R.D., Onyeaka, H. & Nkoutchou, H., 2024. Assessing the vulnerability of food supply chains to climate change-induced disruptions. Science of The Total Environment, 920, p.171047. Available at: <https://doi.org/10.1016/j.scitotenv.2024.171047>

15% to 20% year over year”.⁷ This input constraint creates the need for farmers to be adaptive to challenges, which in turn can potentially be a driving factor in reducing application rates or a shift to alternative farming practices. Market volatility particularly affects the contractual and incentive elements depicted in Figure 2. When input costs fluctuate dramatically, the economic viability of contract arrangements may be compromised, potentially undermining processor-led sustainability initiatives.⁸ This volatility may also increase farmers’ financial liquidity needs, potentially limiting investment in climate transition technologies.

The multilevel governance structure (illustrated in Figure 2) can also be a source of policy shocks. The recent European farmer protests of early 2024 demonstrate how policy changes - particularly if perceived, rightly or wrongly, as excessively restrictive - generate resistance and potentially undermine climate transition efforts.⁹

THE POLICY CONTEXT

Having examined the multi-dimensional nature of the processor-farmer relationship and its vulnerabilities to various shocks, we now turn to the policy frameworks that shape and constrain these relationships. These policy instruments represent tools for guiding the agricultural climate transition while supporting the economic viability that both farmers and processors have identified as essential.

EU Agricultural Policy Levers

National initiatives for practice adoption and technological innovation do not exist in isolation but are increasingly shaped by evolving European policy frameworks. Understanding how EU-level policies are reshaping the operating environment for Irish agriculture provides essential context for evaluating the effectiveness and limitations of domestic approaches.

The framework presented in the prior *Pathways* paper provides a useful lens through which to examine how evolving European policies are reshaping the operating environment for Irish agriculture. It reflects an increasingly integrated approach in which climate, environmental, and food system sustainability objectives are progressively woven into the architecture of EU agricultural policy.

As noted above, the EU has, over the years, shifted the dynamics between farmers and downstream agri-food processors. These changes are often driven by a mix of binding legislation, non-binding strategies, and hybrid policy instruments which in turn redefine compliance requirements, economic incentives, and supply chain governance. These changes are often responses to the challenges of the time.¹⁰ In the first paper of the IIEA *Pathways* project, the EU policy landscape and levers were extensively examined; this section therefore considers only the specific considerations which impact the farmer-processor-farmer relationship. Table 1 offers a summarised version of the directives and regulations which impact the processor-farmer relationship.

The Corporate Sustainability Reporting Directive (CSRD)¹¹ has institutionalised data-collection and reporting requirements (through a phased-in approach). The CSRD’s purpose is to standardise corporate sustainability reporting across the EU. It expands and updates the existing Non-Financial Reporting Directive¹² to ensure transparency in how companies report their environmental, social, and governance (ESG) impacts.

7 Smith, R. & Huguley, S.E., 2024. *Volatility, high prices expected for fertilizer*. Farm Progress, 18 December. Available at: <https://www.farmprogress.com/farm-business/volatility-high-prices-expected-for-fertilizer>

8 Smith, R. & Huguley, S.E., 2024. *Volatility, high prices expected for fertilizer*. Farm Progress, 18 December. Available at: <https://www.farmprogress.com/farm-business/volatility-high-prices-expected-for-fertilizer>

9 Mennig, P. (2024) ‘A never-ending story of reforms: on the wicked nature of the Common Agricultural Policy,’ *Npj Sustainable Agriculture*, 2(1). <https://doi.org/10.1038/s44264-024-00027-z>.

10 Fiankor, D.-D.D. et al. (2019) ‘Does GlobalGAP certification promote agrifood exports?’ *European Review of Agricultural Economics* [Preprint]. <https://doi.org/10.1093/erae/jbz023>.

11 Directive - 2022/2464 - EN - CSRD Directive - EUR-LEX (no date). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022L2464>.

12 Hahnkamper-Vandenbulcke, N. and European Parliamentary Research Service (2021) *Non-financial reporting directive*, EPRS. report PE 654.213. [https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/654213/EPRS_BRI\(2021\)654213_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/654213/EPRS_BRI(2021)654213_EN.pdf)

Under the CSRD, processors must disclose material Scope 3 emissions, which often necessitates farm-level data on methane outputs (important for dairy and meat processors, for example, because of enteric fermentation in cattle), fertiliser application rates (which is key for any crop-based supply chain in relation to nitrous oxide emissions), and soil carbon stocks to meet reporting standards (this is relevant for regenerative agricultural practices, although there is less standardised reporting in this area).¹³ Within the CSRD there is a preference for the use and collection of primary data such as direct farm measurements for Scope 3 calculations.¹⁴

However, the caveat is that this requirement is only applicable when deemed feasible and companies do have the option to use secondary data if primary data collection is unavailable to them.¹⁵ Therefore, the materiality of the product determines the rigor of the data collection itself. In the EU, some farmers are adopting digital tools such as satellite monitoring or farm carbon calculators like AgNAV to meet wider demands for recording sustainability metrics.

The Corporate Sustainability Due Diligence Directive (CSDDD)¹⁶ obliges large companies to identify, mitigate and, where necessary, remedy human rights and environmental impacts in their operations and ‘chain of activities’. It also mandates companies to establish a transition plan to ensure they make their business model compatible with the 1.5°C 2050 climate neutrality objective of the Paris Agreement. While the CSRD requires companies affected to report on their material sustainability impacts, the CSDDD requires companies covered to address any environmental concerns.

To support the implementation of these measure, Article 22 of the CSDDD was designed to include a commitment not only from the EU but also from Member States to develop accompanying measures that can provide information as well as support to companies and stakeholders who will be affected.¹⁷ A key point in the CSDDD is the requirement to develop and put into effect a climate transition plan as set out in Article 22. This will involve offering financial and technical support and training to aid with the implementation of these requirements. But this article will be weakened if the Commission’s proposed Omnibus Simplification Regulation is agreed.

The CSDDD’s focus on due diligence builds on the existing *Unfair Trading Practices (UTP) Regulations 2021*.¹⁸ This is important in relation to price relationships in the supply chain and highlights that the CSDDD co-exists within this regulatory landscape. Several enforcement bodies have oversight roles in this area: The Agri-Food Regulator, which was established in 2023, has prioritised supply chain transparency as part of its 2024–2026 strategy. Compliance inspections targeting unfair payment terms between processors and dairy farmers¹⁹ are also now more widespread: The Competition and Consumer Protection Commission (CCPC) has expanded its mandate to investigate unfair purchasing practices; the Workplace Relations Commission (WRC) which also has an enhanced role in relation to supply chain labour audits; and the Environmental Protection Agency (EPA) has new powers which focuses on strengthening inspection protocols, increasing enforcement activities, and ensuring compliance with environmental regulations at both the farm level and within processing facilities

Ireland’s approach to implementing the CSDDD has been underpinned by supporting the EU’s “Stop-the-Clock” Directive,²⁰ which postpones the application of CSDDD for first-wave companies to July 2028.²¹ This phased timeline provides companies with additional time to prepare for compliance, particularly while they also navigate parallel

13 Hope, K. (2024) ‘Prepare your farm for European Sustainability Reporting | Farmable,’ *Farmable*, 12 September. <https://farmable.tech/european-sustainability-reporting-will-impact-your-farm/>.

14 Aligned Incentives, a Bureau Veritas company (2024) *Navigating mandatory Scope 3 emissions reporting in the EU, US, and beyond - Aligned Incentives*. <https://alignedincentives.com/mandatory-scope-3-emissions-reporting-eu-us-uk-international/>.

15 Nuttall, B. (2025) *A practical overview of primary and secondary data for carbon accounting*. <https://www.positiongreen.com/insights/articles/practical-overview-primary-vs-secondary-data-in-carbon-accounting/>.

16 Directive - EU - 2024/1760 - EN - EUR-LEX (no date). <https://eur-lex.europa.eu/eli/dir/2024/1760/oj>.

17 Fair Trade Advocacy Office et al. (2021) *Supporting the implementation of the EU Corporate Sustainability Due Diligence Directive in global supply chains involving smallholders and their communities*.

18 *GET Ready: Irish Agri-Food sector braces for upcoming compliance inspections | Addleshaw Goddard LLP* (no date). <https://www.addleshawgoddard.com/en/insights/insights-briefings/2024/competition/get-ready-irish-agri-food-sector-braces-for-upcoming-compliance-inspections/>.

19 *GET Ready: Irish Agri-Food sector braces for upcoming compliance inspections | Addleshaw Goddard LLP* (no date). <https://www.addleshawgoddard.com/en/insights/insights-briefings/2024/competition/get-ready-irish-agri-food-sector-braces-for-upcoming-compliance-inspections/>.

20 McMenamin, S., Chrysostomou, S.C. and Sinnott, M. (2025) *CSRD: Irish government announces support for omnibus as stop-the-clock is approved by the European Parliament*. <https://www.lexology.com/library/detail.aspx?g=36250e5e-e05b-4f80-b4c8-40145a3fed47>.

21 Arthur Cox (2025) *EU stops the clock for CSRD and CSDDD - Arthur Cox LLP*. <https://www.arthurcox.com/insights/eu-stops-the-clock-for-csrd-and-csddd/>.

obligations under the CSRD. The CSRD was originally set to apply to more companies from 2025. However, the Stop-the-Clock Directive also delays CSRD reporting requirements for many firms by two years, aligning the compliance schedules for both directives on the same timeline.²² Both Germany and France have recently proposed to eliminate the CSDDD completely, which, as noted in Politico, is in response to the EU's growing pro-business landscape and what the publication calls an "anti-green push".²³

Another layer of EU climate legislation is the **Carbon Border Adjustment Mechanism (CBAM)**,²⁴ which introduces a carbon pricing system for certain imported goods, including fertilisers. The CBAM is designed to ensure that the carbon cost is embedded in imported fertilisers that matches that of domestic production within the EU. This is done with the aim to prevent "carbon leakage" and incentivise lower-carbon production methods globally.²⁵ From 2026, importers of fertilisers into the EU will have to purchase CBAM certificates reflecting the GHG emissions connected with its production.²⁶ This new cost structure is expected to raise the price of imported fertilisers.²⁷

This shift transfers financial and operational risks down the supply chain, as farmers may face higher input costs or be compelled to adopt new practices without guaranteed compensation.²⁸ While the long-term goal is to drive sustainability and innovation in agricultural inputs, farming organisations and industry have voiced concerns that CBAM could increase production costs for farmers in the EU and potentially undermine their competitiveness in the global market.²⁹

The **Carbon Removals and Carbon Farming Regulation (CRCF)**³⁰ creates a new economic mechanism. Under the CRCF, farmers can generate certified carbon credits through sequestration practices like improved soil management or agroforestry, with potential prices ranging from €15 to €50 per ton of CO₂ equivalent.³¹ Processors and retailers may purchase these credits to offset their Scope 3 emissions, creating new revenue streams for farmers while allowing supply chain partners to meet decarbonisation targets through "insetting" rather than external offsets.³² However, the framework introduces liability risks: farmers must guarantee carbon storage for extended periods, with a minimum five-year monitoring phase that stakeholders are encouraged to renew multiple times to ensure multi-decadal storage.³³ While the CRCF doesn't explicitly mandate a 35-year lock-in period, its structure incentivises a prolonged commitment through the certificate expiration mechanisms.³⁴ Critics argue that this approach risks prioritising offsetting rather than funding and supporting the development of direct emissions reductions, thus watering down climate action while still exposing farmers to market volatility and long-term land management constraints.³⁵

22 Stop-the-Clock Proposal under EU Sustainability Omnibus Proposal approved by the EU institutions | Commercial Law Firm | Dillon Eustace (no date). <https://www.dilloneustace.com/insights/stop-the-clock-proposal-under-eu-sustainability-omnibus-proposal-approved-by-the-eu-institutions/>.

23 Leali, G., De Villepin, P. and Fernyhough, J. (2025) 'Macron and Merz call to abolish EU law on ethical supply chains,' *POLITICO*, 20 May. <https://www.politico.eu/article/macron-merz-supply-chain-green-ethical/>.

24 Regulation - 2023/956 - EN - cbam regulation - EUR-Lex (no date). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2023.130.01.0052.01.ENG&toc=OJ%3AL%3A2023%3A130%3ATOC.

25 Ellis, L. (2025) 'CBAM and fertilisers: What it means to importers and exporters to the EU,' *The Carbon Trust* [Preprint]. <https://www.carbontrust.com/news-and-insights/insights/cbam-and-fertilisers-what-it-means-to-importers-and-exporters-to-the-eu>.

26 European Union (2023b) *INFORMATION FOR IMPORTERS OF FERTILISERS*. <https://doi.org/10.2778/667>.

27 Farmonaut (2025) *CBAM Impact: 5 Ways EU Carbon Border Mechanism Transforms Urea Market* - <https://farmonaut.com/europe/cbam-impact-5-ways-eu-carbon-border-mechanism-transforms-urea-market>.

28 Ellis, L. (2025) 'CBAM and fertilisers: What it means to importers and exporters to the EU,' *The Carbon Trust* [Preprint]. <https://www.carbontrust.com/news-and-insights/insights/cbam-and-fertilisers-what-it-means-to-importers-and-exporters-to-the-eu>.

29 *Fit for 55 Package: CBAM and ETS - Fertilizers Europe* (2024b). <https://www.fertilizerseurope.com/fitfor55-ets-cbam/>.

30 *Carbon removals and carbon farming* (no date). https://climate.ec.europa.eu/eu-action/carbon-removals-and-carbon-farming_en.

31 Yerashevich, N. (2025) *Carbon Removal Certification Framework: Impacts for Agri-Food*. <https://ohanapublicaffairs.eu/2025/01/16/carbon-removal-certification-framework-agri-food/>.

32 *How supply chain Scope 3 emissions affect farming* (202315). <https://www.nfonline.com/updates-and-information/how-supply-chain-scope-3-emissions-affect-farming/>.

33 Scherger, S. and INSTITUTE FOR AGRICULTURE AND TRADE POLICY (2024) *UNPACKING THE EU CARBON REMOVAL CERTIFICATION FRAMEWORK: Implications for EU climate and Agriculture Policy*. https://www.iatp.org/sites/default/files/2024-05/CRCF%20trilogue%20article_final_0.pdf.

34 Scherger, S. and INSTITUTE FOR AGRICULTURE AND TRADE POLICY (2024) *UNPACKING THE EU CARBON REMOVAL CERTIFICATION FRAMEWORK: Implications for EU climate and Agriculture Policy*. https://www.iatp.org/sites/default/files/2024-05/CRCF%20trilogue%20article_final_0.pdf.

35 *Unpacking the EU Carbon Removal Certification Framework: Implications for EU climate and Agriculture Policy* (no date b). <https://www.iatp.org/unpacking-eu-crcf>.

The **EU Taxonomy Directive** classifies environmentally sustainable economic activities, influencing access to sustainable finance. For agriculture, it sets criteria for crop production, livestock, and forestry, excluding practices like greenhouse farming and insect farming until further research clarifies their sustainability.³⁶ To qualify, farms must maintain biodiversity-rich areas, avoid synthetic pesticides, or adhere to nitrogen balance limits.³⁷ In Ireland, tillage farms face pressure to comply with farm-gate nitrogen balance thresholds to avoid exclusion from Taxonomy-aligned financing.³⁸

The **Empowering Consumers & Green Claims Directives** ban unverified environmental claims and unapproved sustainability labels.³⁹ For example, terms such as “eco-friendly” will require proof via third-party certification.⁴⁰ Irish organic farmers could benefit from clearer market differentiation, while conventional producers must substantiate claims like “low-carbon beef” with lifecycle assessments.⁴¹ The Green Claims Directive also mandates climate transition plans, affecting large agri-processors reliant on fossil fuels.⁴²

36 Cadogan, S. (2023) ‘Ag could miss out on billions if EU taxonomy changes get backing,’ *Irish Examiner*, 19 April. <https://www.irishexaminer.com/farming/arid-41116777.html>.

37 *EU taxonomy in agriculture [10 things you should know]* | Celsia (no date). <https://www.celsia.io/blogs/10-things-to-know-about-agriculture-and-the-eu-taxonomy>.

38 Cadogan, S. (2023) ‘Ag could miss out on billions if EU taxonomy changes get backing,’ *Irish Examiner*, 19 April. <https://www.irishexaminer.com/farming/arid-41116777.html>.

39 Council of the European Union, 2024. *Empowering consumers for more sustainable choices*. <https://www.consilium.europa.eu/en/policies/green-claims-empowering-consumers-for-more-sustainable-choices/>

40 Waiharo, K. (2024b) *The EU Empowering Consumers Directive and Rainforest Alliance Certification: What you need to know*. <https://www.rainforest-alliance.org/business/certification/the-eu-empowering-consumers-directive-and-rainforest-alliance-certification-what-you-need-to-know/>.

41 *Insights* | Sidley Austin LLP (2025) ‘Heightened scrutiny of green claims in the European Union and Switzerland,’ 3 April. <https://www.sidley.com/en/insights/publications/2025/03/heightened-scrutiny-of-green-claims-in-the-european-union-and-switzerland>.

42 *Insights* | Sidley Austin LLP (2025) ‘Heightened scrutiny of green claims in the European Union and Switzerland,’ 3 April. <https://www.sidley.com/en/insights/publications/2025/03/heightened-scrutiny-of-green-claims-in-the-european-union-and-switzerland>.

Table 1 EU Directives and Regulations which impact the processor-farmer relationship (own compilation).

Name	Type	Level	Key Features	Reported/Expected Impact
Corporate Sustainability Reporting Directive (CSRD)	Directive	EU	Requires annual sustainability reporting with double materiality (environmental/social impacts and financial effects), mandates third-party audits, and applies to companies with €50M+ turnover, €25M+ assets, or 250+ employees	Increased transparency for investors, pressure on supply chains to provide farm-level emissions data (e.g., methane, fertiliser use), and adoption of digital tools like carbon calculators
Corporate Sustainability Due Diligence Directive (CSDDD)	Directive	EU	Obliges large firms to address human rights/environmental risks in supply chains, mandates climate transition plans aligned with 1.5°C goals, and covers companies with €450M+ turnover	Overhaul of processor purchasing practices (e.g., payment terms, lead times) and alignment with Ireland’s Unfair Trading Practices Regulations
Carbon Border Adjustment Mechanism (CBAM)	Regulation	EU	Imposes carbon costs on imported fertilisers from 2026 to match EU production standards, requiring GHG emissions reporting for imports	Higher input costs for farmers, incentivises low-carbon fertiliser alternatives, and risks reduced global competitiveness for EU agriculture
Carbon Removals and Carbon Farming Regulation (CRCF)	Regulation	EU	Certifies carbon credits for sequestration practices (e.g., agroforestry), with €15–50/ton pricing and minimum 5-year monitoring	New farmer revenue streams via carbon in setting, but risks long-term land-use restrictions and prioritisation of offsets over direct emissions cuts
EU Taxonomy Directive	Directive	EU	Classifies sustainable economic activities, excluding practices like intensive livestock farming unless they meet biodiversity or nitrogen criteria	Restricted access to green financing for farms exceeding nitrogen thresholds and criticism for enabling greenwashing in industrial agriculture
Empowering Consumers & Green Claims Directives	Directive	EU	Bans unverified claims (e.g., “eco-friendly”) and mandates third-party certification for sustainability labels	Market differentiation for certified organic producers and mandatory lifecycle assessments for conventional “low-carbon” claims

Policy Levers Supporting Ireland’s Agri-Food Transition

Table 2 provides a structured overview of the policy instruments underpinning Ireland’s agri-food sustainability strategy, illustrating the deliberate construction of a multi-level governance framework. National-level strategies, such as *Food Vision 2030*, the *Climate Action Plan*, and the *Origin Green* programme, establish the overarching objectives and set the long-term direction for the sector. In particular, *Food Vision 2030* serves as the sector’s master plan, articulating a ten-year roadmap structured around the goal of positioning Ireland as a global leader in sustainable food systems.

Table 2 Policy Levers

Initiative	Type	Level	Key Features	Reported/Expected Impact
Food Vision 2030	Strategic Framework	National	Multi-stakeholder strategy, sustainability targets, sectoral alignment	Foundation for policy coordination across sectors
Origin Green	Certification & QA	National/Industry	Sustainability metrics, certification, market leverage	Core to national agri-business strategy
Dairy Vision Group	Industry Coordination	Sectoral	Dairy-specific recommendations, cross-sector cooperation	Coordinated response framework
ASAP Program	Water Quality Initiative	Regional/Watershed	Targeted interventions	Improved water quality in West Cork
TAMS Scheme	Financial Incentive	Farm	Capital grants	Higher adoption of sustainable tech
Agri-aware	Education & Engagement	Public/Consumer	Farm visits, public education	10,000+ visitors; raised awareness
Science-Based Targets (SBTi)	Corporate Commitment	Industry	Emissions targets, third-party verified	Dawn Meats: -28% Scope 3 emissions by 2030
Climate Action Plan	Strategic Framework	National	Sets national climate targets and sectoral ceilings	Directs agri-sector planning for 2030/2035
Sectoral Emission Ceiling	Emissions Governance	National/Sectoral	Forthcoming post-2030 targets	Guides long-term GHG reductions
Nitrates Derogation Policy	Regulatory	Farm/National	Limits nitrate use and stocking rates	Affects herd size and water/climate outcomes
Rewetting Peatlands	Land Use	Farm/Regional	Restoration of drained organic soils	Key for LULUCF; politically sensitive

The policy mix displayed in Table 2. also reflects considerable diversity in instrument choice. Traditional regulatory measures remain central, notably the revised nitrates derogation and the introduction of sectoral emission ceilings by 2035, providing clear compliance obligations for farmers and processors. However, regulatory approaches are complemented by information tools such as *Origin Green*,⁴³ which uses voluntary certification and supply chain incentives to drive behavioural change. Educational initiatives, for example, through *Agri-Aware*,⁴⁴ aim to build public understanding and support, while corporate initiatives like the Science-Based Targets suggest an increasing recognition of private sector responsibility in advancing sustainability goals.

Finally, Table 2 highlights the breadth of environmental challenges being addressed simultaneously within the current policy mix. Climate change mitigation remains a central focus, reflected in the Climate Action Plan and sectoral ceilings. At the same time, water quality improvements and land management reforms, including initiatives targeting peatland rewetting and restoration, reveal a broader commitment to enhancing ecosystem services alongside emission reductions.

43 *Origin Green* (no date). <https://www.bordbia.ie/industry/origin-green/>.

44 *Agri Aware – Enhancing agricultural literacy & advocacy* (2025). <https://agriaware.ie/>.

Section 2: SUPPLY CHAIN INITIATIVES TO ACCELERATE CLIMATE ACTION

While EU policies establish mandatory frameworks for agricultural sustainability, parallel private governance mechanisms are emerging as complementary drivers of the climate transitions in the agriculture sector. The Science Based Targets initiative is one such mechanism that is increasingly influencing how Irish agri-food businesses approach emissions reduction, creating additional pathways for implementing the climate transition beyond traditional regulatory approaches. The data presented within this section was individually collected from publicly available information published by the companies themselves. The company data presented in Section 2 is collated in a set of Excel spreadsheets that accompany this report, and which are available to view at: https://drive.google.com/drive/folders/1cAyU3jWt9_Vq-7jr8bPFuVAo1xKN4ArL?usp=sharing

The Science Based Targets initiative (SBTi)⁴⁵

The Science Based Targets initiative (SBTi) was launched in 2015 as a collaboration by CDP, the UN Global Compact, the World Resources Institute, and WWF. The SBTi provides a structured methodology for companies and organisations to establish and monitor emissions reduction targets based on the most current climate science. It provides peer-reviewed methodologies and sector-specific guidance for calculating and setting emissions reduction targets. A core aim of the SBTi is that it encourages cooperation to align with the global goal of limiting global warming to 1.5°C above pre-industrial levels.

The SBTi insists on quantifiable targets which are time-bound and subject to independent expert validation. This scientific basis is seen to lend credibility to corporate climate claims - an increasingly important factor as investors, regulators, and consumers demand transparency and accountability. In effect, the SBTi operates as a form of quasi-regulatory governance, providing third-party verification. Agriculture and Food is contained within the subsection FLAG (Forest, Land and Agriculture). It is the world's first standardised method for companies in land-intensive sectors to set science-based targets that include land-based emissions reductions and removals.

It should be noted that the first FLAG sector pathway has a commodity intensity target which focuses on supply chain actors. Overall, there are 11 commodities with specific mitigation targets and pathways, including beef, dairy, pork, poultry, timber, rice, soy, palm oil, maize, wheat and leather. For each of these commodities there is a specific mitigation pathway and intensity-based mitigation pathway that lets companies know the rate at which the SBTi expect the intensity of emissions to decrease for that specific sector. The four main areas of this are: Land use change emissions; Land management emissions; removals; and a select few anthropogenic emissions. While in contrast non-FLAG emissions cover everything else such as energy and processors.

In 2022 the SBTi pathway was made regional, which means that companies setting the commodity pathway targets for one or more of the above commodities will also now acknowledge the region from which they are sourcing the commodity. This has enabled SBTi targets to be more specific with respect to the average intensity of emissions in any given region, as well as the mitigation pathways for that region. Table 3 shows a condensed sectoral breakdown of SBTi participants for Ireland, while Table 4 hones in on agricultural and food companies that are part of the SBTi targets.

⁴⁵ *Ambitious corporate climate action* (no date). <https://sciencebasedtargets.org/>.

Table 3 – Irish Sectors with SBTi Commitments

Sector	Commitment Removed	Committed	Target Set
Air Transport (Air Freight Transportation and Logistics, Air Transportation - Airlines, Air Transportation - Airport Services)	0	1	3
Construction (Construction and Engineering, Construction Materials, Building Products, Homebuilding)	1	12	9
Consumer Goods (Retailing, Food and Beverage Processing, Consumer Durables & Apparel, Consumer Services, Media and Entertainment, Household & Personal Products, Food & Staples Retailing, Food Production - Agricultural Production)	2	5	21
Finance (Banks, Diversified Financials, Insurance, Banks, Diverse Financials, Insurance, Specialised Financial Services, Consumer Finance, Insurance Brokerage Firms)	1	2	3
Real Estate	0	0	2
Telecommunications (Telecommunication Services)	0	0	3
Transport (Automobiles and Components, Transportation)	0	01	
Technology (Technology Hardware and Equipment, Software and Services, Semiconductors & Semiconductor Equipment)	0	0	10
Other	4	19	31

Table 4 - Irish Agri-Food Sector SBTi Commitments

SBTi Commitment Status	Number of Irish Agri/Food Companies
Total of Irish Agri-Food Companies Signed Up	27
Validated Climate Targets Set	19
In process of target validation	5
Commitments Removed	3
Aligned with the 1.5C Goal	16
Aligned with Below 2C Goal	3

Table 3 indicates that 131 Irish companies are engaged with the SBTi, reflecting a growing awareness of the need for structured climate action within the private sector. Eighty-four firms have set validated targets, while a further 39 firms are in the process of doing so. Only a small minority of around 6% have had their commitments removed which suggests a high rate of follow-through once initial commitments are made. Removal normally happens when an organisation does not comply with the SBTi criteria or have not submitted their target update on time.

Table 4 focuses on the agri/food companies within Ireland, and shows that 19 out of the 27 involved have set validated targets, with 16 out of the 19 meeting the 1.5°C pathways which is the highest ambition level within the SNTi framework. The table also shows that only 3 companies have had their commitments removed, which demonstrates again that follow through remains high. Finally, 5 companies remain on the validation pipeline.

Company Size and Sustainability Commitments

When we compare company size in relation to sustainability commitments across the milk and dairy sectors, we can see there are differences in sustainability commitment coverage. Here we have analysed the sustainability commitments by company size as it can offer us a snapshot as to how the different sized actors within the agri-food sector are working towards meeting sector-wide emissions targets. The data used in this analysis was collated from a variety of dairy and meat companies, drawing on their publicly available and published sustainability reports.⁴⁶

⁴⁶ All Excel Sp

It should be noted that in Table 5 and Table 6 the percentages are representative only of the subset of company data examined in the course of this research. It cannot be considered a comprehensive account of the entire industry. The companies considered in the analysis in section 2 vary in size from larger scale processors to smaller artisan processors. This reflects the complexity of the agri-food sector in Ireland - and indicates that there remain capacity issues with respect to building sustainability reporting and access across the sector.

Table 5 Dairy Sector: Company Size and Sustainability Commitments

Size Category	Companies with Commitments	Companies without Commitments	Total Companies	Throughput with Commitments (Million Liters)	Throughput without Commitments (Million Liters)	Total Throughput (Million Liters)	% of Total Industry Throughput	% of National Production (8428 million litres)
Large	4	1	5	6,970	584	7554	98.44%	89.63%
Medium	1	0	1	120	0	120	1.56%	1.42%
Small	0	0	0	0	0	0	0	0
Total	5	1	6	7090	584	100%	100%	91.05%

Table 6 Meat Sector (Beef Only): Company Size and Sustainability Commitments

Size Category	Companies with Commitments	Companies without Commitments	Total Companies	Throughput with Commitments (Tonnes)	Throughput without Commitments (Tonnes)	Total Throughput (Tonnes)	% of Total Combined Throughput	% of National Slaughter (CSO: 602,596t)
Large	2	0	2	263,594	0	263594	83.20%	43.70%
Medium	1	0	1	52,000	0	52000	16.80%	8.60%
Small	0	0	0	0	0	0	0%	0.00%
Total	3	0	3	315,594	0	315594	100.00%	52.40%

Table 5, the Dairy Sector, shows that Throughput with Commitments in relation to national production⁴⁷ is at 84.12%, while Table 6 the Meat Sector (Beef only) shows the sector is at 52.40% Throughput with Commitments in relation to national beef production. While all three companies shown in Table 6 demonstrate commitments which cover 52.40% of national slaughter for beef⁴⁸, there remains a high portion of the industry not captured in this analysis. This suggests further outreach is needed to smaller processors as well as expanding further research to include poultry, lamb, and pork. When examining both tables, we can see that several smaller companies lack available data for analysis. Data collection from both sectors show that climate commitments are being led by the bigger processors.

Table 5 and 6 highlight how sustainability commitments are being progressed by the largest processors in both sectors, but it is important to understand the types of climate targets being set by each company. This comes in the form of Scope 1, 2 and 3 emissions.⁴⁹ Each Scope reflects a different aspect of climate responsibility, from direct on-site emission to broader supply chain impact. The following tables 7 and 8 examine how the dairy and meat sector are adopting these in relation to their emissions reduction.

47 Based on CSO Table AKA01: Intake of cow's milk by milk processors and coops).

48 Based on CSO Table ADM01: Livestock slaughtering (Beef)

49 Scope 1, 2, and 3 emissions are greenhouse gases that are released across an organization's entire value chain. Scope 3 emissions are the most complex, as they are released before and after a product is delivered or consumed. - *What are Scope 1, 2, and 3 emissions?* (2024). <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-are-scope-1-2-and-3-emissions>.

Table 7 Emissions Targets Analysis

Industry	Number of Companies	Scope 1 Target Adoption	Scope 2 Target Adoption	Scope 3 Target Adoption	Combined Emissions Target (Yes/No) Target Adoption
Dairy	36	10/36 (27.8%)	10/36 (27.8%)	6/36 (16.7%)	6/36 (16.7%)
Meat	50	19/50 (38.0%)	19/50 (38.0%)	18/50 (36.0%)	17/50 (34.0%)
Total	86	29/86 (33.7%)	29/86 (33.7%)	24/86 (27.9%)	23/86 (26.7%)

Table 7 shows that only 27% (10 out of 36) of dairy companies have both Scope 1 and Scope 2 emissions targets, and that number shrinks when we turn to Scope 3, at 16.7% (6 out of 36), as well as combined emissions. Approximately 50% of companies who have publicly published their targets have also provided a percentage reduction goal they are aiming to achieve. When we turn to the meat sector, we can see that 38% (19 out of 50) have adopted Scope 1 and Scope 2 emissions targets, with 36% adopting Scope 3 emission targets. While 34% (17 out of 50) have Combined emissions targets.

Table 8 Dairy and Meat Sectoral Comparison of Scope 1, 2 and 3 Emissions Reduction Commitments

Target Type	Dairy Yes %	Meat Yes %	Difference
Scope 1 Emissions Target	27.80%	38.00%	10.2% higher in Meat
Scope 2 Emissions Target	27.80%	38.00%	10.2% higher in Meat
Scope 3 Emissions Target	16.70%	36.00%	19.3% higher in Meat
Combined Emissions Target	16.70%	34.00%	17.3% in higher in Meat

In Table 8, when comparing both dairy and meat sectors, the data shows that the largest difference between both industries is in Scope 3 emissions targets (which is addressing supply chain emissions), with meat showing a higher adoption rate than dairy. Scope 3 emissions targets are the least adopted in both sectors overall.

The dairy sector dataset reveals that Scope 3 goals are often framed in terms of intensity-based reductions, with an average aim of 30% reduction in carbon by 2030 for milk production. The sector-wide focus is the development of efficiency improvements. While the meat sector includes a higher share of companies with absolute Scope 3 reduction goals, this is representative of the sector’s aim to change in order to meet targets. Finally, it is noteworthy that in both industries, only about 50% of companies with stated targets provide specific percentage reduction goals.

SBTi participation could be used here to offer reputational and competitive advantages in international markets and support these missing gaps in both the dairy and meat sectors, particularly with regard to supply chains increasingly governed by the ESG criteria. It would also align with growing trend and integration of private sector actors into Ireland’s national climate objectives. The adoption of SBTi targets by Irish firms contributes to a *de facto* implementation of climate policy, even in the absence of binding legislation. This is especially relevant given the challenges faced by the Irish government in achieving sectoral emissions ceilings and aligning domestic policy instruments with the EU’s climate ambition.

Practice Adoption and Technology

Table 7 illustrates the growing emphasis placed on practice adoption and technological innovation in Ireland’s agri-food sustainability transition. A range of initiatives has been developed to facilitate knowledge transfer and to support the implementation of sustainable farm-level practices.

Table 9 Practices and Technologies

Initiative	Type	Level	Key Features	Reported/Expected Impact
Signpost Farms Program	Knowledge Transfer	Farm/Extension	Demonstration farms, peer learning	8,000+ farmer visits
Meat Industry Beef Sustainability	Industry Standard	Sectoral	Beef Charter, standardised practices	Sectoral cohesion
Low Emission Slurry Spreading	Technology Adoption	Farm	Subsidies, tech support, regulation	~90% adoption, reduced ammonia
Agricultural Technologies	Innovation	Farm	Digital tools, data management	Efficiency, better welfare
Multi-species Swards & Clover	Farming Practice	Farm	Fertiliser alternative, nitrogen fixing	12-15% cut in fertiliser use
Protected Urea Fertiliser	Input Substitution	Farm	Reduced nitrous oxide	Use rose to 4,000 tons (42% share)
Demonstration Farms (Newford)	Knowledge Transfer	Farm/Extension	Open, industry-backed farm	8,000+ visitors since 2015

The establishment of demonstration networks, notably through the Signpost Farms Programme and the Newford Demonstration Farm, reflects an approach grounded in behavioural economics: farmers are more likely to adopt innovations they can observe in practice. Reported participation numbers, exceeding 8,000 farmer visits, suggest that peer-to-peer learning is becoming an important channel for disseminating new practices.

At the same time, efforts are being made to coordinate practice change along the value chain. Initiatives such as the development of sectoral standards through a Beef Charter⁵⁰ reflect a growing recognition that farm-level changes need to be supported by downstream actors if supply chain-wide sustainability improvements are to be achieved. This is particularly important in addressing Scope 3 emissions, which fall outside the direct operational control of processors and retailers but increasingly feature in corporate climate reporting obligations.

Regulatory Reforms in Agricultural Insurance Pricing

The Central Bank of Ireland’s 2021 review of differential pricing revealed systemic inequities in farm insurance, in which long-term policyholders faced disproportionate premium increases in the sector known as “loyalty penalties.”⁵¹ Post-regulation changes implemented in July 2022 prohibited insurers from charging renewing customers more than new clients beyond their second policy year.^{52 53} For agricultural insurers, this necessitated comprehensive actuarial recalibration. Companies like FBD Insurance revised risk models to account for escalating climate impacts, particularly flood risks impacting tillage and dairy regions.⁵⁴ Transparent disclosure requirements now mandate insurers to outline initial discounts and projected pricing trajectories, especially for farm liability and livestock coverage.⁵⁵ Despite these measures, the sector grapples with a 32% surge in weather-related claims since 2020. As noted in the EPA Climate Assessment report referenced earlier, this is driven by extreme rainfall patterns that compromise soil stability and crop yields.

50 Beef Sustainability - IBEC (no date). <https://www.ibec.ie/connect-and-learn/industries/food-and-drink/meat-industry-ireland/importance-of-meat-sector/beef-sustainability#:~:text=Charter%20for%20Sustainable%20Irish%20Beef,chains%20over%20the%20longer%20term.>

51 Home and motor insurance rules | Central Bank of Ireland (no date). <https://www.centralbank.ie/regulation/industry-market-sectors/insurance-reinsurance/home-and-motor-insurance-rules/>.

52 Insurance Ireland (2024) Central Bank of Ireland’s review of differential pricing regulations in the private car and home insurance markets - Insurance Ireland. <https://insuranceireland.eu/news-and-publications/blog/central-bank-of-ireland-s-review-of-differential-pricing-regulations-in-the-private-car-and-home-insurance-markets/>.

53 Minister Carroll MacNeill welcomes the Central Bank’s Review of Differential Pricing Regulations (no date). <https://www.gov.ie/ga/an-roinn-airgeadais/preasei-siuinti/minister-carroll-macneill-welcomes-the-central-banks-review-of-differential-pricing-regulations/>.

54 Insurance Ireland (2024) Central Bank of Ireland’s review of differential pricing regulations in the private car and home insurance markets - Insurance Ireland. <https://insuranceireland.eu/news-and-publications/blog/central-bank-of-ireland-s-review-of-differential-pricing-regulations-in-the-private-car-and-home-insurance-markets/>.

55 Differential Pricing - Consumer FAQ | Central Bank of Ireland (no date). <https://www.centralbank.ie/regulation/industry-market-sectors/insurance-reinsurance/home-and-motor-insurance-rules/differential-pricing---consumer-faq.>

The Industry and Government Response

There are a number of examples of initiatives underway to address these issues, some of which are discussed in more detail elsewhere in this paper. This section does not aim to be a comprehensive account of all such programmes, but rather to give a flavour of the efforts that are already underway. A number of key ones are therefore listed below.

- Knowledge Transfer Partnership with KT Facilitator (Teagasc KT Programme) is an advisory and education programme for peer-to-peer learning between farmers and across farms on best practice.⁵⁶
- Vodafone and Dairygold MY FarmWeb Collaboration (Vodafone and Dairygold in collaboration with farmers from Cork) is a cloud-based platform to support the management of farm-based data.⁵⁷
- Sustainability Data Collection and Improvement (SDAS) (Teagasc and Bord Bia) is a data-driven sustainability programme that can be used to demonstrate sustainability improvements at farm level.⁵⁸
- Carbon Navigator Tool is a farm management tool which supports farmers in reducing emissions and improve productivity by setting performance-based targets.⁵⁹
- Kildalton Open-Source Sustainability Dairy Farm (Teagasc and Glanbia), is a model farm which is used to demonstrate best practices within sustainable dairy farming.⁶⁰
- Origin Green (Bord Bia) is a national suitability programmes for the agri-food sector. It tracks the performance for over 61,000 farms as well as over 300 companies in relation sustainability performance.⁶¹

56 Knowledge Transfer Programme 2024-2026 (no date b). <https://www.gov.ie/en/department-of-agriculture-food-and-the-marine/services/knowledge-transfer-programme-2024-2026/>.

57 MyFarmWeb - MyFarmWeb (no date). <https://myfarmweb.com/europe>.

58 Sustainable Dairy Assurance Scheme (SDAS) - Bord BIA (no date). <https://www.bordbia.ie/farmers-growers/get-involved/become-quality-assured/sustainable-dairy-assurance-scheme-sdas/>.

59 Teagasc (2016) *Farm Carbon Navigator User Manual*. <https://www.teagasc.ie/media/website/about/our-organisation/Instruction-Carbon-Navigator-V2.pdf>.

60 Boyle, G. et al. (2018) *Kildalton Open Source Sustainable Dairy Demonstration Farm Information Booklet*, Kildalton Open Source Sustainable Dairy Demonstration Farm Information Booklet. book. <https://www.teagasc.ie/media/website/publications/2018/Kildalton-Open-Source-Sustainable-Dairy-Demonstration-Farm.pdf>.

61 Sustainable Farming Origin Green - Bord BIA | Irish Food Board (no date b). <https://www.bordbia.ie/farmers-growers/origin-green/>.

SECTION 3: STAKEHOLDER INTERVIEWS AND DISCUSSION

Having examined both the public policy landscape and emerging private governance mechanisms shaping Ireland's agricultural climate transition, we now turn to the thematic findings, including stakeholder interviews. This analysis explores how these various pressures and frameworks are experienced by stakeholders across the agri-food chain, with particular attention to how the processor-farmer relationship functions as a nexus for implementing climate action.

The stakeholder interviews were organised around a number of key themes: (1) climate-induced risk and responsibility-sharing in the food system; (2) trust and transparency between farmers and processors; (3) effectiveness and accessibility of incentives; (4) the potential for shared transition goals and standardisation; and (5) the inclusivity of current decision-making processes.

Interview participants were prompted during the interview process to either expand on what they meant, offer context or to give an example of what they thought was best practice. A thematic analysis was used to analyse the notes taken during the different interviews. A structured codebook was developed through the software package NVivo to identify and rank the recurring issues raised during the discussions.

Emerging Themes from Stakeholder Interviews

The core themes that emerged from the stakeholder interviews centred on financial viability; stakeholder trust along the agri-food chain itself; feasible incentive models for sustainability; how to improve data transparency; and the evolving role of technology in emissions measurement. The interviews reveal the pressures farmers and processors are facing from a variety of factors, including climate policy, market expectations, public perception, and the structural limitations of current support schemes. Additional areas of discussion included intergenerational renewal, the distribution of responsibility along the agri-food chain, and the need for aligned public-private financing to support a just and effective agricultural transition. The results suggest that while Ireland's agricultural climate transition is progressing in ambition, the key to greater buy-in may hinge on a deeper understanding of stakeholder perspectives and the constraints they face.

Financial concerns dominated the conversation across all stakeholder categories including farmers, processors, financial institutions, policymakers, and researchers. These range from worries regarding farm-level profitability to systemic issues around risk-sharing, capital access and distribution, to the perceived cost burden of climate action. The shared concern across stakeholders with respect to finance offers opportunity for cross-sectoral collaboration. However, it may also pose a risk, by framing climate action primarily through a financial lens. A greater risk may arise where longer-term goals related to resilience, social equity, and public goods are consequently sidelined.

When we move to secondary priorities, divergences become more clearly defined in the context of the processor-farmer relationship. Farmer organisations place strong emphasis on market and policy structures that affect day-to-day on-the-ground operations for farmers. In contrast, stakeholders in the financial sphere are more narrowly focused on sustainability-aligned investment and risk mitigation, exhibiting limited engagement with social or governance dimensions which can impact on the aforementioned areas.

It is noteworthy that those most concerned about issues around finances were also more likely to engage with sustainability themes, indicating growing recognition of the link between market forces, climate transition and future profitability. As expected, climate and environmental concerns are closely aligned. However, technology implementation or access as well as social cohesion concerns appear inversely related, suggesting a potential trade-off in institutional focus and investment priorities between technological adaptation versus rural community reliance. While emissions targets and market reforms dominate public debate, the less visible but essential enablers, such as advisory services and digital infrastructure requirements, receive far less attention, despite their key role in implementation and support.

Among the themes identified in this analysis, the distribution of responsibility for climate action has emerged as particularly significant. The following section explores how different stakeholders perceive and respond to climate pressures, revealing important tensions and opportunities within the processor-farmer relationship that must be addressed for effective climate governance.

Pressures and Responsibility for Climate Action

Throughout the interviews, stakeholders acknowledged that the pressures to address climate change in agriculture are mounting from all sides and greatly influencing public debate and attitudes. Core issues in this debate, such as the different policy levers that are available, the different market expectations and shocks, and the public discourse and understanding of climate change on agriculture, are often felt acutely at both the processor and farm levels. However, these views then diverge, with differences of opinion regarding who within the agri-food chain is responsible for the climate transition, the development and implementation of farming practices, and even how data is collected, accessed and stored. As such, an important theme arose, namely: a consensus that the responsibility for climate transition must and should be distributed along the food chain.⁶²



Everything we do on the farm has a cost... You can't talk about low-carbon farming unless you talk about the costs... re-seeding with clover, buying specialist equipment, managing it all... It's not free.

- Participant 6

From the perspective of farmers, they have direct control of land and animals and see themselves as being on the front line of implementing emission reduction, aware of their need to adopt new practices such as changing feed, managing manure and herd sizes. From the processor's perspective, they carry responsibility to facilitate and support farmers, since they require lower-emission raw materials to meet their targets and meet market standards - not only at an EU level, but a global one as well. Both processor and farmer stakeholders agree that there is a need for their relationship to include and establish knowledge transfer partnerships, digital tools and machinery, as well as different financial incentives for farms. However, it should be noted that even within the broadly termed 'farmers' stakeholder group, opinions can also diverge depending on whether it is dairy, beef or tillage farmers. Despite this, farmers across subgroups argue for education about these incentives, as well as the equity of support and access for them.

"The education piece is huge. If you don't tell farmers what the incentive is... or how to get it... Then what's the point? The ones who need it most often don't know it's there." - **Participant 10**

"Processors are under huge pressure to show they're cutting emissions . . . not just from their factories but across the supply chain. That means lower-emission milk, beef, everything. So it all comes back to us." - **Participant 3**

Farmers understand the impacts of climate change and climate transformation and the impact it will have on their farm, and its link to intergenerational sustainability and ownership of the farm. The family farm model that dominates Irish agriculture means these pressures are experienced very personally. Climate KIC notes that "farmers are at the heart of this transition and policy must work with them to make the changes needed while protecting primary producers' economic viability".⁶³ However, this pressure does not necessarily derive from the need to make the transformation, but rather the time scale in which they have to meet targets, especially with respect to long-term goals at a national and EU level.

"The expectations that are put on us to hit targets may not always transfer back to the cost... The costings need to be revised, and people need to look at the reality of cost." - **Participant 3**

Farmers are clear on the nature, possible solutions, and economic viability of the challenges they face in the present. In the research interviews conducted for this paper, farmers understood the need to adapt new technologies and practices to reduce emissions. However, they also expressed the view that those outside of the agricultural sector and rural communities do not always understand their need to maintain productivity. For the farmer stakeholders interviewed,

62 Murphy, J. (2024) *Positive News on Greenhouse Gas Emissions from Agriculture*. <https://capnetworkireland.eu/positive-news-on-greenhouse-gas-emissions-from-agriculture-in-2023/>.

63 Climate KIC (2025) *In Ireland, farmers are at the heart of the agri-food transition*. <https://www.climate-kic.org/news/in-ireland-farmers-are-at-the-heart-of-the-agri-food-transition/>.

this emphasis on productivity did not imply a continuation of “business as usual,” but rather their commitment to integrating sustainable practices over time, and adopt practices that support the long-term viability of the farm while ensuring consistent production levels maintain a steady income.

Therefore, any successful climate transition in Irish agriculture will need to depend on more than just policy mandates, but also on the economic viability of the transition, meaning that the costs of sustainable practices are fairly distributed, adequately funded, and not divorced from economic sustainability. For Irish agriculture to meet its climate targets while preserving the family farm model, collaborative frameworks that respect both the urgency of climate action and the practical realities faced by those implementing these changes on the ground are needed. This does not, under any circumstances, mean that Ireland should dial down its climate ambition, but rather implies a need to understand where the system is not working and support those who are in need.

Processor-Level Dynamics

While farmers experience these pressures directly through their management of land and animals, processors face their own distinct challenges in facilitating the climate transition. Understanding these processor-level dynamics is essential for developing balanced approaches that recognise the interdependence of these actors within the agri-food chain.

For processors and the wider agri-food industry, the climate transition has manifested in three areas: first, and most pressing, is the need to adapt climate-friendly supply chains and production processes; second is investment into certification schemes as well as sustainability programmes; and third is to unpack future opportunities and challenges within the market.

“The LCA models underneath [Origin Green] are changing all the time. The data that’s required to populate those models has to be changed, has to be updated, has to be tweaked, has to be improved. But one of the underpinnings is that it gives each farmer an Origin Green assessment of what their farm is doing and what it could do.” - Participant 3

Across interviews, processors noted how they believe the Government and policy makers have a huge role to play in addressing challenges around the climate transition, and they can do so by establishing “fair” frameworks, targets, and regulations, as well as in the provision of “public goods” such as research, advisory services, and funding for public benefit measures. Beyond this, there is an additional emerging perspective from both processors and farmers, which views retailers and consumers as also bearing the responsibility for the cost of transition by paying a premium and choosing sustainable food options. For both farmers and processors, the concept of food sustainability and even security is talked about in the form of a public good.

If we are to think of food as a public good, then we also need to consider the role of resilience and our wider response to the impacts of climate change, and how an adaptive response will have significant impacts on the agri-food chain as a whole. Resilience recognises that climate transformation not only demands emission reductions but also requires building adaptive capacity throughout the system to withstand increasingly volatile weather patterns, supply chain disruptions, and market fluctuations. By framing agricultural production as a public good which strengthens local resilience and security, we establish a foundation for more equitable distribution of both responsibility and resources across all stakeholders. This integrated approach to climate action and resilience-building offers the most promising path forward for Irish agriculture to maintain both its environmental credentials and economic viability in an uncertain climate future.



A lot of the investment to date has gone into dairy . . .but there’s far less structure or incentive in place for beef. We’re catching up, but there’s no unified or funded programme yet for processors in beef like there is in dairy.”

- Participant 9

Sector-wide “climate fatigue” and blame narratives

Despite these initiatives and the recognition of shared responsibility, both farmers and processors increasingly report experiencing what might be termed ‘climate fatigue,’ which may be described as a sense of being overwhelmed by mounting environmental expectations while also perceiving a shortfall of corresponding support or recognition. Climate fatigue as a phenomenon reveals important psychological and social dimensions of the climate transition that must be addressed alongside technical and economic considerations.

Beyond market, regulatory and societal pressures, Irish farmers and processors face increasing expectations regarding their environmental stewardship role. In this context, there is growing recognition of agriculture’s responsibility for rural communities, intergenerational change and a wider societal expectation to minimise environmental impact. Interviewees from the sector recorded a sense of being ‘unfairly targeted’. This reflects a widely held perception and frustration among farmers that the agriculture sector bears a disproportionate responsibility for emissions reductions compared to other sectors. It is possible that the public discourse could do more to unpack these nuances while also examining other parts of the agri-food chain in Ireland, including retailers and consumers.

Despite the many advantages that Ireland’s temperate climate provides, Irish agriculture also faces challenges from its island geography, including exposure to Atlantic weather, access to overseas markets and infrastructure, and extensive boglands that are less suitable for conventional farming. It is at this intersection that the tension between economic reliance on livestock and emission reduction targets needs more public discussion and deliberation.⁶⁴ At the same time, current debates around agriculture polarise farmers and environmentalists, neglecting shared approaches which are being implemented.



We need to incentivise these young farmers to come back, even if it’s only part-time... Ireland has evolved... a carpenter can also be a farmer... especially in the West, where it’s smaller farms, less profitable. We need incentives there for part-time farmers as well as full-time.

- Participant 6

“There’s complete fatigue there, especially parts of the value chain... I think we can struggle, and it may not achieve the desired outcomes.” - Participant 2

“Why are the next generation not interested in going farming? Right? The predominant reason is lack of profitability... I think farmers are sometimes their own worst enemies in terms of the way that they talk about farming... they’re all very negative...” - Participant 7

Addressing this climate fatigue and overcoming blame narratives requires rebuilding trust throughout the agri-food chain. The following section examines how transparency and mutual accountability between farmers and processors can create the foundation for more collaborative approaches to climate action, potentially transforming a relationship characterised by tension into one defined by partnership.

Building Trust and Transparency in the Supply Chain

For all stakeholders there was a recurring theme of the need to build and maintain mutual accountability and trust between farmers and processors. While climate and market pressures are often top-down in nature, it was clear that both groups understood the nature of sustainability measures and the need for on the ground responses. This in turn needs a horizontal relationship if it is to be effectively implemented. However, when we move into the questions of transparency and shared goals these perspectives can differ depending on the size and type of farm, as well as the co-operative itself.

64 Curtin, J. et al. (2016) *A Climate-Smart Pathway for Irish Agricultural Development Exploring the leadership opportunity*. Edited by Tom Kirley. https://www.rds.ie/images/uploads/general/CSA_Final_Report_July_2016.pdf.

A good case study within the Dairy sector of how trust can be built in conjunction with sustainable practices is the Sustainable Dairy Partnership (SDP)⁶⁵. The SDP operates on a structured verification framework which has been designed and developed in line with environmental, social and governance performance (ESG) benchmarks against different peers within the same industry. This has led to Kerry Dairy Ireland becoming the first dairy processor to achieve a Stage 5 verification, which is the highest standardisation that can be achieved within the framework. It required a coherent integration with its *Evo/ve* sustainability programme, and alignment with both national frameworks of *Origin Green* and international standards. What the SDP has demonstrated is the impact that structured systems can have in fostering accountability across the agri-food chain, offering space for both processors and producers to meet climate goals and expectations while maintaining internal trust. However, it should be noted that the success of such schemes and frameworks depends not only on the design but how they are communicated at farm level.

The role of the advisor emerges as a central trust broker within this space for farmers to understand and implement the best options for them in the transition process. Be it public, such as Teagasc, or private consultants, these actors play an important role in supporting farmers in areas such as technical support, unpacking regulatory compliance, data issues, contractual regulations, new innovations and the value add they can offer. It is a wide-ranging role and one which needs more support to develop, as building strong advisor-processor-farmer partnerships could be a high-leverage pathway to scale behaviour change while protecting the relational trust that underpins farm-level decision-making.

The effectiveness of the relationship is highly dependent on trust between the farmer and the advisors and wider organisation which they represent. The advisor-processor relationship should be looked upon as a strategic one in relation to the climate transition as they assist and aide with responding to challenges such as market volatility and emerging environmental requirements. Therefore, the relationship is about fostering shared ownership of the sustainability transition and ensuring that farmers are not just rule-takers but also active co-creators of a theory of change.

Concerns over data privacy and regulatory frameworks for Scope 3 emissions reporting

The need for data transparency and sharing in the sector was a clear priority for all stakeholders interviewed. This was a core issue when discussing climate targets, not only with respect to finance but also long-term planning at the farm level. Both processors and farmers, as well as stakeholders from the financial sphere, noted that there needs to be more long term and comprehensive planning to de-risk the transition of suitable farming practices. Nonetheless, there was an acknowledgement that farming at its core is about risk. When we are unpacking the climate transition in relation to agriculture as a whole, what is being proposed is not simply a minor adjustment but a fundamental transformation of how we approach agricultural sustainability. Without proper verification systems, independent advice and government backing, the burden of this transformation falls disproportionately on landowners who are already navigating multiple layers of uncertainty.

Therefore, any form of climate action in relation to farm practices and relationships with processors, advisors or the financial sphere will depend on the emissions data and how it is shared up and down the agri-food chain. Farmers need information on their performance, such as carbon audit results or benchmarking, and processors need aggregated data to report to markets. At present, Bord Bia *Origin Green* programme is an example of best practice in this area. *Origin Green* conducts regular on-farm audits across Ireland. These audits require the data collection of “farm management, environmental performance, greenhouse gas emissions, biodiversity, water use, energy efficiency, soil management, and socio-economic factors”. Farmers are required to complete a sustainability survey as part of the audit process. This survey, combined with other data sources, is used to calculate the farm’s carbon footprint and assess sustainability performance.

After each audit, farmers receive a Farmer Feedback Report. This outlines the farm’s performance in areas such as carbon footprint. The feedback is to inform the areas for improvement while at the same time benchmarking their performance against similar farms. However, the participation in *Origin Green* and Bord Bia schemes is also a prerequisite for access to certain markets and can enhance the marketability of Irish agricultural products internationally.

65 MacHugh, C. (2025) The SDP reaches new milestone — SAI Platform. <https://saipatform.org/our-work/news/the-sdp-reaches-new-milestone-as-kerry-dairy-ireland-achieves-stage-5-verification/#:~:text=Developed%20by%20SAI%20Platform%20in,sustainable%20practices%20in%20dairy%20production.>

“You need some guarantees. You need some kind of verification monitoring. You know, there’s all very well saying to someone, okay, I’ll pay you to plant a tree. You need to monitor it to make sure that tree is there, 5, 10, 15, 20 years later... That shouldn’t really be a cost to the landowner. That should be a government cost.” - Participant 5



There’s a need for proper regulation to ensure that whatever is put on processors or retailers doesn’t end up leaking back towards the primary producer... Unless you back it up with traceability and transparency, it won’t stick.

- Participant 3

“None of the processors have a way to do the carbon measurements well... The Irish ones haven’t invested in their own carbon tool. They complain about the Bord Bia-Chagas ISPF tool. That’s the only one that exists that farmers use. So currently the measurement side is not good... not trustworthy enough to build a payment system from the processor side.” - Participant 6

While sustainability audits and carbon accounting are increasingly central to climate-aligned agriculture, the interviews conducted as part of this study reveal a growing credibility gap. Farmers are being asked to participate in detailed data-gathering processes, often as part of certification or supply chain assurance systems, but in a one-directional transfer of information, which can create cynicism. The future development of this area should involve a two-way flow of data to build trust; processors could consider increased sharing of insights and perhaps even offer incentives based on that data.

Data transparency is no longer a peripheral concern in agriculture; it is now central to the legitimacy and functioning of climate-oriented agricultural policy. Whether we speak of sustainability-linked finance, emissions accounting, or carbon market participation, the absence of verifiable, trusted, and accessible data represents a systemic bottleneck in the processor-farmer relationship. Farmers are increasingly subject to regulatory expectations around inputs and emissions, but they are not equally empowered with decision-useful data at the farm level. Moreover, the credibility of emerging environmental markets, such as carbon credits or biodiversity net gain rests heavily on transparent monitoring, reporting and verification (MRV). Without this, the risk is twofold. On the one hand, there is a risk that farmers will disengage from schemes seen as opaque or extractive. While on the other, there is a risk that consumers and financial markets will lose trust in the claims made by food and agri businesses. To address this, public institutions must play a more proactive role, not only in regulating for transparency, but in co-investing in the digital and institutional infrastructure that underpins it. A collaborative approach is needed - one which aligns regulatory demands with farmer capabilities and offers returns for those who invest in good practice. Ultimately, trust built through transparent, verifiable data is the key enabler of climate integrity in the food system.

Emerging Tech

Across the different stakeholder groups interviewed, one consistent theme was the need for transparent and standardised measurement systems to support Ireland’s agricultural climate ambitions. As the climate policy landscape shifts toward outcome-based incentives and compliance-linked sustainability benchmarks, the quality, governance, and perceived fairness of emissions data systems have become central to farmer trust and scheme legitimacy.

At present, the core architecture for national emissions tracking remains fragmented, with initiatives such as *AgNav*. *AgNav* is Ireland’s emerging emissions advisory platform which offers farm-level feedback tools, but only on a voluntary, consent-based basis. While farmers may view aggregate benchmarking (e.g. comparing performance against regional averages) as constructive, reluctance remains around full data visibility and third-party access.⁶⁶ This reflects deeper concerns around data sovereignty, use transparency, and the potential for reputational or financial disadvantage if poorly governed.

⁶⁶ Teagasc (no date a) *Environment - Introducing AgNav - putting climate action planning back in farmers’ hands - Teagasc | Agriculture and Food Development Authority*. <https://www.teagasc.ie/news--events/daily/environment/introducing-agnav---putting-climate-action-planning-back-in-farmers-hands.php>.

Despite these tensions, a number of innovations are beginning to chart a more farmer-centric approach to MRV. These include:

- Blockchain-Anonymised Ledgers: Kerry Group's pilot initiative with 214 dairy farms employs zero-knowledge proofs⁶⁷ to validate methane reduction claims without disclosing individual farm metric.
- Satellite-AI Monitoring: The EU's *FarmSat* initiative leverages high-resolution (3m) vegetation imagery updated hourly, with machine learning models estimating nitrogen uptake and biomass growth, offering scalable tools for nutrient-use benchmarking.
- Cooperative Data Pools: *The Beef Data Co-op*, comprising over 5,200 members, demonstrates the potential of collective governance in reducing per-farm compliance costs for life cycle assessments (LCAs), with shared investment in verification infrastructure.

However, interviews with processors revealed unease with emerging MRV platforms that may lack robust governance or appear to prioritise external validation over farmer support and confidence. This highlights a growing need for multi-actor governance models in data infrastructure across the sector. One option that was favoured was the possibility of a public/private partnership form of governance, farmer inclusion, and standardisation across schemes. As agricultural climate action becomes increasingly data-driven, the legitimacy of climate reporting platforms will depend not only on technical accuracy but on institutional trust and procedural fairness.⁶⁸

Effective Incentive Models for Sustainability

Processors who were interviewed noted how linking milk prices to sustainability outcomes has provided some stability for farmers. Dairygold and Carbery are examples of best practice in this area and have introduced bonus schemes aimed at rewarding specific sustainable farming practices. Dairygold's *Grassroots Milk Supplier Sustainability Bonus*, introduced in 2023, has increased its payment from 0.75 to 1.00 cent per litre, resulting in approximately €14 million paid annually to participating farmers. Participation has reached 93% of Dairygold's milk supply base, with payments linked to measures including water quality protection, the use of protected urea, soil health initiatives, and genetic improvements. Carbery's *FutureProof* programme, operating since 2022, follows a similar model, with a bonus of 1.25 cent per litre scheduled for 2025 and over €12 million already distributed to suppliers meeting criteria around nutrient management, breeding practices, and environmental stewardship.^{69 70}

In interviews with farmers, there was a degree of scepticism about the reach and equity of these programmes. Concerns were mainly centred on whether sustainability-linked bonuses will meaningfully influence widespread behaviour change if only a small minority of farmers can realistically achieve the standards required. This point was nuanced, however, and beef farmers expressed a preference for a better structured co-operative model like the dairy sector. One beef farmer notes there was a "beef brain drain" taking place in the dairy sector because of its profitability, while those in the dairy sector were concerned by the impact of these schemes and the imbalance when it comes to high intensity production or farm size. Dairy farmers were historically paid on the basis of flat pricing, classified pricing, or system of components (which generally did not include environmental practices). When looking at the evolution of milk pricing, "the pooling procedure recognised many of the concerns regarding equitable producer pricing that were insufficiently addressed by other" previous mechanisms.⁷¹

Other cooperatives are working to provide minimum price guarantees in parallel with sustainability initiatives. It is not explicitly designed with sustainability in mind, but it is part of a broader shift in how cooperatives are structuring the payout to farmers, to give them financial stability along with environmental inducements.⁷²

67 In cryptography, a zero-knowledge proof is a protocol in which an entity can allow a third party to verify that information provided is 'true', without conveying any additional information to them. This allows the third party to confirm that the data is accurate, without sensitive data being revealed to them.

68 Tracex tech and Tracex tech (2025) 'Scope 3 Emissions in Agriculture: Meeting Regulatory and Consumer Demands,' *Blockchain for Food Safety, Traceability and Supplychain Transparency*, 14 January. <https://tracex tech.com/scope-3-emissions-in-agriculture/>.

69 Sarzynska, A. (2025) *Dairygold increases sustainability bonus to offer up to €14 million per year to Milk Suppliers - Irish Co-operative Organisation Society (ICOS)*. <https://icos.ie/2025/02/10/dairygold-increases-sustainability-bonus-to-offer-up-to-e14-million-per-year-to-milk-suppliers/>

70 Claffey, M. (2025) 'Farmers set to share €7.2m from Carbery's new bonus measure,' *Irish Examiner*, 13 March. <https://www.irishexaminer.com/business/companies/arid-41593156.html>.

71 Erba, E.M., Novakovic, A.M., and Cornell Program on Dairy Markets and Policy (1995) *The evolution of milk pricing and government intervention in dairy markets*, *Cornell Program on Dairy Markets and Policy*. report. Cornell University. <https://dairymarkets.org/pubPod/pubs/EB9505.pdf>.

72 IrishExaminer.com (2024) 'Dairygold increases sustainability bonus,' *Irish Examiner*, 31 December. <https://www.irishexaminer.com/farming/arid-41545705.html>.

“We’ve seen early attempts to link milk price to sustainability KPIs. It’s a positive signal, but it raises big questions about fairness . . . especially if farmers don’t control all the factors or can’t afford the tech needed to comply.” - Participant 7



Bonuses are good, but we need to make sure they’re not just PR . . .if only the top 10% of farms qualify, then it’s a headline without real impact. The goal should be wide adoption, not just rewarding the best.

- Participant 3

for widespread adoption. Without external market recognition such as enhanced public support, there is a risk of embedding inequities rather than delivering a just transition.

Additionally, the interviews also revealed how farmers may lack the resources or the technological capacity to meet the criteria needed to participate. This is of particular concern in a future where measurement and verification systems become more demanding. Earlier pooling arrangements sought to address concerns about fairness among producers, but today’s shift toward differentiated sustainability payments introduces new complexities that require careful consideration if inequities are not to be deepened.

“CAP is still based on per-hectare payments. But if you want to encourage ecosystem services, you need new logic . . . something more performance based. The private side is trying to step in, but it’s not coordinated.” - Participant 7

“We’re doing landscape restoration work with big landowners. But even the big guys say . . . we’ll only do this if government helps with the setup and certification costs. It’s not viable on private money alone.” - Participant 5

Cost Allocation and Financial Strain

While there is an emerging policy emphasis on the need for sustainability transitions in Irish agriculture, concerns remain among farmers around issues of affordability and accessibility of investment finance. While processors have introduced bonus payments linked to sustainability measures, evidence suggests that the amounts involved remain relatively modest when set against the real costs of investment in areas such as slurry infrastructure, pasture improvement, or nutrient management.^{73 74}

Financial sector stakeholders made the case for more robust methodologies for measuring on-farm emissions reductions. Hybrid financial instruments exist, such as the *Organic Dairy Farm Transformation Bond* combining fixed returns with land appreciation but have seen limited uptake to date. Similarly, the *Ireland Strategic Investment Fund* (ISIF) has allocated around 30% of its €1 billion climate envelope to agriculture, preferring investments in larger

“Some of the co-ops are starting to trial sustainability-linked bonuses . . .if you’re below a certain emissions threshold or meet certain animal welfare or nutrient management criteria, you get a bonus per litre. But the scheme’s still voluntary and not all farmers trust how it’s calculated.” - Participant 1

Two fundamental limitations emerged in the current incentive architecture the first is that many schemes rely on intra-sector redistribution rather than generating new value; second, there remains a structural absence of downstream price signals. Sustainability bonuses are often funded by reprioritising existing margins within the supply chain, meaning that farmers not meeting criteria may indirectly subsidise those who do. In parallel, the lack of a meaningful consumer price signal for climate-aligned or biodiversity-friendly produce undermines the economic rationale



What’s needed is a hybrid model. The government pays for the enabling conditions . . . monitoring, certification, soil testing. The private sector pays for outcomes. Otherwise, nobody’s going to come in.”

- Participant 12

⁷³ Law Society of Ireland Gazette (no date). <https://www.lawsociety.ie/gazette/top-stories/2024/september/credit-unions-crisis-era-levy-cut-to-zero/>.

⁷⁴ Central Bank of Ireland (2024) *Financial conditions of credit unions*, Central Bank of Ireland. <https://www.centralbank.ie/docs/default-source/regulation/industry-market-sectors/credit-unions/communications/financial-conditions-of-credit-unions/financial-conditions-of-credit-unions-2023-i.pdf>.

infrastructure projects where measurable outcomes are more easily assured. The Strategic Banking Corporation of Ireland's *Growth and Sustainability Loan Scheme* also faces difficulties in reaching smaller farms, with stringent eligibility criteria reportedly excluding a significant share of applicants.^{75 76 77}

These developments underline that the transition to more sustainable farming systems is not costless. Farmers, particularly those operating at small scale or with limited financial buffers, face significant upfront costs with uncertain return. While processor-led bonus schemes provide a useful initial signal, they are unlikely on their own to overcome structural financing barriers. There is a risk that such schemes primarily reward better-capitalised producers, thereby widening inequalities within the sector.

At the same time, from the perspective of financial institutions, the absence of standardised measurement tools and the long payback periods associated with many sustainability investments create real credit risks. As a result, farmers are increasingly caught between rising regulatory and market expectations and the lack of sufficiently accessible or affordable financial pathways to support necessary investments.

Addressing these gaps will likely require closer integration between public and private finance mechanisms. Aligning CAP eco-schemes and agri-environment-climate measures more directly with emerging carbon markets, risk-sharing tools, and blended finance models could help to de-risk investments for both farmers and lenders. Rather than viewing sustainability investment as a redistribution of costs onto primary producers, policy design must increasingly frame it as a shared investment in the resilience and competitiveness of the sector as a whole.⁷⁸

What is the Role of Public and Private Finance?

This section explores the role of public and private finance has in supporting the agricultural sector. The interviews highlighted some of the challenges farmers and processors face to transition sustainably, including affordability and accessibility. This section presents case studies of various financial structures which exist such as risk-sharing facilities, transition linked financial instruments, sector-specific risk frameworks, upstream value chain interventions, and regulatory leverage which may be points of reference in the development of future hybrid finance structures.

Risk-Sharing Facilities

Processors advocate for hybrid finance structures combining public guarantees with private capital. The *InvestEU* framework provides a blueprint of such structures, implementing first-loss guarantees where public entities absorb initial losses (typically 30%) to incentivise private lending for methane-reducing technologies.⁷⁹ In another instance, the EIF AGRI guarantee facility uses a 25% cap on losses to de-risk loans for sustainable agricultural investments, demonstrating scalable risk-sharing mechanisms.⁸⁰ Meanwhile, dairy cooperatives are piloting warehouse receipt systems, leveraging milk volumes as collateral for green loans. Dairy cooperatives' approach builds on established models where stored commodities secure credit, though challenges persist in standardising valuation and governance.⁸¹

75 National Treasury Management Agency (2023) *Sustainable & Responsible Investment Strategy, Sustainable & Responsible Investment Strategy*. https://isif.ie/uploads/publications/SRI2023_2023-09-26-152251_jdcs.pdf.

76 Ireland Strategic Investment Fund (2016) *Ireland Strategic Investment Fund Sustainability and Responsible Investment Policy*. <https://isif.ie/wp-content/uploads/2016/07/Sustainability-and-Responsible-Investing-Policy-July-2016.pdf>.

77 *Growth and Sustainability Loan Scheme - SBCI* (no date). <https://sbci.gov.ie/products/growth-and-sustainability-loan-scheme>.

78 INRAE and IDDRI *et al.* (2025) *The next reform of the CAP: The variables in the equation*, Policy Department. [https://www.europarl.europa.eu/RegData/etudes/STUD/2025/759316/CASP_STU\(2025\)759316_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2025/759316/CASP_STU(2025)759316_EN.pdf).

79 European Investment Fund (EIF), 2015. *The new EIF AGRI guarantee facility*. Luxembourg: EIF. Available at: https://www.eif.org/news_centre/publications/eif_agri_guarantee_facility_en.pdf

80 European Union (2024) *ERDF guarantee financial instruments - Factsheet*. https://www.fi-compass.eu/sites/default/files/publications/ERDF_Guarantees_factsheet_RTW.pdf.

81 Tracextech and Tracextech (2025a) 'Scope 3 Emissions in Agriculture: Meeting Regulatory and Consumer Demands,' *Blockchain for Food Safety, Traceability and Supplychain Transparency*, 14 January. <https://tracextech.com/scope-3-emissions-in-agriculture/>.

Transition-Linked Financial Instruments

Sovereign-backed transition bonds are emerging as tools to lower capital costs. These 10-year instruments propose coupon reductions (0.5–1.5%) for verified emission cuts, aligning with the EU Green Bond Standard's rigorous taxonomy and reporting requirements.⁸² Uruguay's sustainability-linked bond framework, which links coupon adjustments to GHG reductions, offers a precedent for integrating performance incentives into agricultural finance.⁸³

Sector-Specific Risk Frameworks

Sector-specific risk frameworks have been used by financial institutions to highlight gaps in conventional risk models. To do so, the financial institution advocates for natural capital credit assessments that account for soil health, water scarcity, and climate resilience.⁸⁴ The Climate Bonds Initiative's *Agri-food Transition Framework* serves as an example that further underscores the need for metrics linking loan terms to verifiable sustainability outcomes.⁸⁵

Upstream Value Chain Interventions

Academic proposals emphasise redistributing transition costs to retailers and regulators. In one case study, margin caps on sustainability-certified products aim to improve price transmission to farmers, though Hungary's 10% cap on staple goods illustrates regulatory tensions between inflation control and fair remuneration⁸⁶. Retailer-funded transition pools, such as Waitrose's £500k net-zero farm fund, demonstrate voluntary initiatives, though mandated contributions (e.g., 0.5% turnover) remain theoretical.⁸⁷ By redistributing transition costs to retailers and regulators, upstream value chain interventions can tackle inequities in the sector and alleviate pressure from those absorbing the burden of costs.

Regulatory Leverage

Central banks are exploring climate quotas, with the EIF AGRI facility requiring 25% of loans to target green investments—a model potentially adaptable to broader lending portfolios. Simultaneously, the CSDDD extends liability to financial institutions, mandating audits of Scope 3 emissions linked to agricultural lending.⁸⁸ By doing so, financial institutions are able to pressure banks to align 30% of their portfolios with science-based transition pathways.⁸⁹

Aligning the Food Chain: What are the Shared Goals and Systemic Levers

Ireland's experience with agri-environmental schemes has evolved from compliance-based approaches under REPS towards more outcome-oriented models, best demonstrated by the Agri-Climate Rural Environment Scheme (ACRES).⁹⁰ The incremental transition towards results-based payment models, as seen in initiatives like *Wild Atlantic Nature*⁹¹, reflects an important recognition that flexibility and local knowledge remains important to achieving environmental outcomes.

82 *The European green bond standard – Supporting the transition* (no date). https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/european-green-bond-standard-supporting-transition_en.

83 Khadbai, B. (2022) *Investors should not view step-down coupons on SLBs as penalties*. <https://www.omfif.org/2022/10/investors-should-not-view-step-down-coupons-on-slbs-as-penalties/>.

84 *Natural Capital Credit Risk assessment in Agricultural lending: An approach based on the Natural Capital Protocol* (2019). Natural Capital Finance Alliance. <https://www.unepfi.org/wordpress/wp-content/uploads/2019/04/Natural-Capital-Credit-Risk-Assessment-2019.pdf>.

85 *A new pathway for agri-food: Climate Bonds launches Agri-food Transition Framework* (2025). <https://www.climatebonds.net/2025/04/new-pathway-agri-food-climate-bonds-launches-agri-food-transition-framework>.

86 Bbj-Mti (2025) 'Retailers make case for broader application of profit margin cap - Budapest Business Journal,' *Budapest Business Journal*, 12 March. <https://bbj.hu/business/industry/retail/retailers-make-case-for-broader-application-of-profit-margin-cap/>.

87 Singsit, J. (2025) 'Waitrose £500k fund to support British farmers' net zero transition,' Retail Insight Network, 12 March. <https://www.retail-insight-network.com/news/waitrose-british-farming-fund/>.

88 Hogan Lovells, 2024. European due diligence: financial players are not fully excluded from the Corporate Sustainability Due Diligence Directive. [online] Hogan Lovells. Available at: <https://www.hoganlovells.com/en/publications/european-due-diligence-financial-players-are-not-fully-excluded-from-the-corporate-sustainability-due-diligence-directive>

89 *Natural Capital Credit Risk assessment in Agricultural lending: An approach based on the Natural Capital Protocol* (2019b). Natural Capital Finance Alliance. <https://www.unepfi.org/wordpress/wp-content/uploads/2019/04/Natural-Capital-Credit-Risk-Assessment-2019.pdf>.

90 Agri-Climate Rural Environment Scheme (ACRES) (no date). <https://www.gov.ie/en/department-of-agriculture-food-and-the-marine/services/agri-climate-rural-environment-scheme-acres/>.

91 Department of Housing, Local Government and Heritage (2025) *Home - Wild Atlantic Nature*. <https://www.wildatlanticnature.ie/>.

The development of biodiversity bonds and sovereign green financing instruments also opens up new channels for mobilising private capital for public goods. Ireland's experience with sovereign green bonds has demonstrated that environmental investments can be integrated into conventional financial structures, though preserving the reliability of funded outcomes remains a challenge.

Land use change will be central to Ireland's climate strategy, particularly in relation to the restoration of degraded peatlands. While mechanisms such as voluntary incentives remain the preferred approach, more controversial instruments such as compulsory purchase orders (CPOs) for high-carbon soils are under discussion. While such measures could unlock significant climate benefits, they raise complex property rights and compensation issues that must be handled with sensitivity to maintain public trust.

CONCLUSION AND RECOMMENDATIONS

The aim of this paper was to unpack the importance of the processor-farmer relationship and how it is a leverage point for Ireland's agricultural climate transition to be successful. Farmers are expected to deliver major emission reductions while facing, growing compliance demands and limited control over downstream market dynamics. Processors are increasingly linking farm-level sustainability to supply chain demands but acknowledge that, without stronger financial and advisory supports, transition efforts risk faltering.

Among stakeholders interviewed, there is broad agreement that trust, transparent data-sharing, and fairer risk distribution must underpin any future efforts at supporting the climate transition within the agri-food chain. It is evident that sustainable farming cannot be achieved without also sustaining farm incomes, generational renewal, and rural community resilience. Climate ambition must be matched by credible and inclusive economic pathways to guarantee the meeting of targets and continued sectoral viability.

The evidence presented in this paper suggests that while the processor-farmer nexus offers significant potential to drive climate transformation in Irish agri-food sector, its success will depend on policy interventions that combine economic viability with environmental ambition. Based on stakeholder insights and best practice, the following recommendations are proposed for consideration and discussion:

- 1. Strengthen Monitoring, Reporting, and Verification (MRV) Frameworks through Collaborative Governance:** The credibility of climate action within agri-food systems rests on a good MRV systems. It is recommended that platforms such as AgNav be further developed as independent, farmer-trusted systems, with transparent data governance, consent-based data sharing, and tangible feedback mechanisms to participating farmers.
- 2. Design Hybrid Financing Models to De-Risk On-Farm Investment:** Considering the high costs associated with climate adaptation and mitigation measures, a hybrid financing architecture that combines public risk-sharing mechanisms as well as private investment could be used. Blended finance models, sovereign-backed transition bonds, and tailored green loan products could be aligned with sector-specific realities to facilitate equitable access, particularly for smaller and more vulnerable farms.
- 3. Promote Fairer Distribution of Transition Costs across the Food Chain:** Sustainability-linked price signals should be strengthened through voluntary and regulatory mechanisms. Policy measures such as limiting retailer margins on certified sustainable products or requiring retailer to make contributions towards farmer transition funds, could ensure that food-chain actors beyond the farm level contribute proportionately to transition costs.
- 4. Expand Sustainability Incentive Structures:** Early initiatives linking farm payments to environmental performance, such as Carbery's FutureProof and Dairygold's Grassroots programme, are welcomed. However, broader participation and alignment with national eco-schemes would strengthen their impact. Future design should be clearly communicated and avoid inadvertently creating inequities between larger and smaller producers.
- 5. Integrate Emerging Technologies with Safeguards for Equity and Access:** The application of technologies such as blockchain verification, satellite monitoring, and AI-driven benchmarking is promising but should be accompanied by measures to ensure accessibility for all farm types and sizes. Public support for cooperative data initiatives and subsidised technology adoption would help to facilitate broader participation in climate transition.
- 6. Embed Social Dialogue Mechanisms to Sustain Legitimacy and Commitment:** Climate action in agriculture will have the most impact when it receives broad-based support. Structured dialogue platforms involving farmers, processors, policymakers, and civil society should be institutionalised to foster mutual learning and avoid blame narratives.

The Institute of International and European Affairs (IIEA) is a leading international affairs think tank. Founded in 1991, its mission is to foster and shape political, policy and public discourse, in order to broaden awareness of international and European issues in Ireland and contribute to more informed strategic decisions by political, business and civil society leaders.

The IIEA acts as a forum for informed debate, analysis and discussion. Views expressed in the Institute's publications, and in presentations at its events, are those of the authors alone and do not represent the views of the Institute, which is fully independent. The IIEA is a not-for profit organisation with charitable status.

© Institute of International and European Affairs, May 2025

Creative Commons License

This is a human-readable summary of (and not a substitute for) the license.

[https://creativecommons.org/licenses/Attribution-NonCommercial-ShareAlike 4.0 International \(CC BY-NC-SA 4.0\)](https://creativecommons.org/licenses/Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0))

You are free to:

- Share - copy and redistribute the material in any medium or format
- Adapt - remix, transform, and build upon the material
- The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

NonCommercial — You may not use the material for commercial purposes.

ShareAlike — If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original.

No additional restrictions — You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.



The IIEA acknowledges the support of the Citizens, Equality, Rights and Values (CERV) Programme of the European Union



The Institute of International and European Affairs,

8 North Great Georges Street, Dublin 1, Ireland

T: +353-1-8746756 F: +353-1-8786880

E: reception@iiea.com W: www.iiea.com