Food and Agriculture
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Ireland's journey towards sustainable food systems

The processes and practices that made a difference

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Cover photograph: Auditor taking soil sampling at dairy farm in County Kerry, Ireland

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Abbreviations and acronyms

AI	artificial intelligence
AKIS	agricultural knowledge innovation system
Bord Bia	Irish Food Board
CAP	Common Agricultural Policy
CEO	Chief Executive Officer
CSO	Central Statistics Office
DAFM	Department of Agriculture, Food and the Marine
EPA	Environmental Protection Agency
EPI	Environmental Performance Index
ESG	Environmental, social and governance
FSAI	Food Safety Authority of Ireland
GFSI	Global Food Security Index
GHG	greenhouse gas
HLIC	High Level Implementation Committees
IT	Information technology
R&D	research and development
SDGs	Sustainable Development Goals
Teagasc	Agriculture and Food Development Authority
UCD	University College Dublin

Summary

Governments and other food system actors such as companies, investors, civil society and knowledge institutes are called upon to work together to enhance the sustainability, resilience and inclusiveness of food systems within the context of the 2021 Food Systems Summit, in order to meet the targets set by the Agenda 2030 and the Sustainable Development Goals (SDGs).

Governments need to know which options are the most appropriate and effective to achieve a transformation towards sustainable food systems. The intention of this case study¹ therefore is to learn from the institutional and programmatic processes that have sustained the transformation of Ireland's food system so that other countries might be inspired by ideas and practices that could be potentially adapted to their own journey towards a sustainable food system.

A knowledge of recent history is essential to understand Ireland's food system and transformation. The past 50 years of Irish agriculture have been characterized by major political choices at the European level, regarding Ireland's adaptive capacity to deal with the challenges and opportunities of European Union membership, and deep

¹ The case is part of a broader study that incorporates two additional country case studies for Costa Rica and Rwanda.

KEY INSIGHTS

This appraisal provides seven key lessons from Ireland's efforts to transform its food system:

- 1. **Provide strong leadership, but be open to societal dialogue.**
- 2. **Leverage existing rolling strategy processes to learn, align and adapt.**
- 3. **Build on comparative advantages to develop a competitive agrifood sector.**
- 4. **Combine top-down and bottom-up innovation processes.**
- 5. **Recognize that strong institutions representing all parts of the food system require ongoing investment.**
- 6. **Nurture niche initiatives today to provide a basis for sustainability and growth tomorrow.**
- 7. **Create a sense of urgency to change course.**

economic, social and cultural changes in Irish society (Arnold, 2008). The country's trajectory from small-scale farming focused on commodity exports with little value addition, to gradual integration into high-value international supply chains, alongside its current ambition to contribute to solving world hunger, reflect the profound shifts that have taken place within and around the boundaries of Ireland's food system.

This appraisal draws on lessons from agrifood-wide² institutional mechanisms, programmes and policies applied against the backdrop of Ireland's agroecological comparative advantage. This case can leverage insights related to trade-offs and tensions particular to Ireland: alignment between visions for an upward growth trajectory for the agrifood sector, in particular beef and dairy; and the importance of an environmentally sustainable farming sector that respects European Union and SDG obligations; in addition to consumer demands for green growth and nutritious food.

Ireland's transformation demonstrates the complexity of multiple drivers (policies, investments, market trends and disruptions) simultaneously at play as food systems evolve. In particular, the case hones in on transitions arrived at through multi-stakeholder policy formulation and implementation processes. It draws on experiences of steering a collaborative agrifood policy process and the capacities needed to ensure its effectiveness. The case acknowledges that many of the results of Ireland's agrifood sector are also determined by other forces at work, namely: the European Union's Common Agricultural Policy (CAP) framework, the removal of milk quotas in 2015, new food consumer trends, and larger international economic developments such as the financial crisis in 2008 and the ensuing Irish economic downturn. More recently, and yet to be fully assessed, are the impacts of Brexit and the COVID-19 pandemic.

This case study appraises the historical context, country policies and institutional stakeholder dynamics that shape and sustain opportunities for transforming food systems. The research methods employed include semi-structured interviews with stakeholders who represent the broad spectrum of Ireland's food system (see Annex 3), document reviews and validation workshops.

The following five sections present the results of this rapid appraisal. Section 1 outlines the performance of Ireland's food system, including publicly available data on outcomes; Section 2 focuses on key processes and conditions that have shaped the current state of the food system, and includes a case study of Ireland's agrifood strategy process; Section 3 reflects on the transformation process and its direction; Section 4 identifies the collective capabilities that have played a role in the transition to sustainability; and Section 5 provides some final reflections on the study and themes for further exploration. The seven key insights can be found throughout the text in boxes.

² The term "agrifood sector", which is used throughout the text, refers to a more restricted interpretation of the roles of agriculture and food sector processes of moving agrifood produce from farm to fork.

1. Ireland's food system

1.1. A brief overview

Food systems are understood as “the constellation of activities involved in producing, processing, transporting and consuming food” (UN, 2021), leading to outcomes in three major areas: food and nutrition security, socio-economic and political outcomes, and environmental outcomes.³ The Irish food system has undergone significant transitions over the last few decades. From a predominantly family-farm based *agricultural* industry focused mainly on domestic and United Kingdom of Great Britain and Northern Ireland consumption, the agrifood sector has been transformed into a high-value *food* industry, undergoing major sector growth. Agrifood exports for 2019 were valued at EUR 14.5 billion, representing a 63 percent increase from EUR 8.9 billion in 2010. Ireland exports agricultural products to over 180 countries, with dairy and beef accounting for the majority (DAFM, 2020). Its current challenge is to ensure a further decrease of environmental impacts and greenhouse gas (GHG) emissions due to the agrifood sector, an environmental ambition that is high on the political agenda in Ireland but in conflict with the growth goals of the sector.

Until the 1970s, over a quarter of the Irish population were employed by the agrifood sector on small farm holdings with limited access to opportunities for value addition, resulting in high migration from rural to urban areas. During the 1990s, the food sector underwent a swift transformation, becoming a global leader in food safety and traceability, and entering high-value agrifood markets in the European Union, the United States of America and Asia. However, while the country has experienced exponential growth in the sector, nutrition, sustainability and gender issues remain a challenge (Kelly and Ilie, 2018).

The transition is the result of multiple drivers, policy actions and investments. However, this appraisal focuses in particular on changes arrived at through joint policy formulation and the implementation processes of the Irish public sector and other stakeholders. It focuses on insights that can be drawn from this experience in terms of how to steer a collaborative agrifood policy process, and works to identify the necessary capacities to achieve this effectively. Many of the results of Ireland's agrifood sector are also determined by other forces, such as the CAP, the removal of milk quotas in 2015 and larger economic developments such as the post-2008 Irish economic downturn and the impacts of Brexit.

³ The short (non-exhaustive) definition comes from the UN's Food Systems Summit 2021 website: www.un.org/en/food-systems-summit/about. Besides a focus on the activities of the food system, a food system approach implies a broader emphasis encompassing social, food security and environmental outcomes and the socio-economic and environmental drivers of these food system activities, as well as the ways in which these elements interact with each other (van Berkum, Dengerink and Ruben, 2018).

1.2. Ireland's assets

Ireland's temperate climate and abundant rainwater provide ideal agroecological conditions for livestock agriculture as well as other cover crops. Of the country's 69 789 km² area, 71.6 percent is agricultural land, and 11 percent is covered by forests. The moderating effect of the Gulf Stream provides a climate that is especially well-suited for the growth of grass – an exceptional and affordable feed for livestock. Irish agriculture is therefore primarily a pasture-based industry with the country having the highest proportion of grassland in Europe, as well as a high-quality marine environment and a long shoreline. Ireland's entire agrifood sector is also underpinned by well-developed food safety and traceability systems. Finally, Ireland benefits from a long tradition of cross-sector dialogue between public, private and civil society stakeholders. Since the 1980s, this has developed into a “social partnership” model (Regan, 2012) that encompasses institutional dialogue mechanisms where government, industry and unions have found ways to settle labour issues through dialogue rather than engaging in strikes and confrontation. Although the influence of this model has declined since the era of the “Celtic tiger” economic boom in the 2000s (McAleese, 2000), it still informs the norms for public-private sector engagement across all sectors including agrifood.

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1.3. Key agrifood sector and trade indicators

The following indicators are taken from the European Commission (2021), except where indicated:

1.4. Ireland's current food system performance

An overview of key food system outcomes in Ireland using publicly available data is shown in Figure 1 (see page 6). This spiderweb graph shows data for the three key domains of food systems: food and nutrition security, socio-economic and political dimensions, and environmental sustainability.⁶ This overview illustrates the comparative performance of Ireland's food system in broad terms.

The impact of the socio-economic and political dimension on Ireland's food system is relatively stable. Two-thirds of all farmers are struggling to make their farms viable or to find successors, indicating the residual presence of farmers (outside the successful dairy sector) who rely on alternative income activities to survive – leading to discontent among farmers. The lowest score on demographic conditions to meet food demand reflects the rapid pace of urbanization in Ireland, which potentially

⁶ This spiderweb is based on a balanced estimate of 13 food system indicators, using publicly available data sets and indexes. It makes no claim to be a comprehensive evaluation. Further details are available in Annex 1.

offers challenges for access to food. The food and nutrition security dimension shows high scores, except for progress on global nutrition targets, indicating little progress or even regression on obesity and breastfeeding. Diverse scores can be observed for the environmental sustainability dimension, which indicates progress in important areas such as wastewater management, with gaps remaining in areas such as ecosystem services and nitrogen management.⁷ In summary, Ireland is on a remarkable journey, but faces considerable and urgent challenges to improve the nutritional and environmental outcomes of the food system.⁸

⁷ The Environmental Performance Index (EPI) indicator used for nitrogen management only captures areas under crop cultivation (see Annex 1). Since this represents a small share of Ireland's land use (11 percent) compared to grassland (58.4 percent), this indicator only partially represents nitrogen management in Ireland's agriculture. It is included to enable comparison with the other countries in this study: Costa Rica and Rwanda.

⁸ Overall, these trends are in line with SDG progress indicators as reported in Ireland's Voluntary National Review 2018 (Government of Ireland, 2018). Progress on SDGs 1, 2, 3, 4, 8, 9 and 16 is good, while challenges exist in the areas of obesity, levels of sustainable consumption and production, biodiversity and habitat destruction, mitigating and adapting to climate change, addressing inequalities and gender mainstreaming.

Figure 1. Performance of the Irish food system across three dimensions

Note: score 1-10, where 1 is highly insufficient and 10 is excellent. Each score is based on either the maximum possible score for that indicator or, if available, a global target for that indicator.

2.

Important processes and conditions shaping the Irish food system

The appraisal distinguishes eight important processes and conditions that have shaped Ireland's food system. These are internal food system dynamics (1-7) influenced by processes and conditions in the wider economy, and European agricultural policies (8). While not exhaustive, these eight processes and conditions are important factors replicable outside Ireland.

2.1. A culture of collaboration: Adopting the social contract in the agrifood sector

Ireland's history of social partnerships, where government, employers and unions negotiate for improvements in public policies, is an essential ingredient underpinning the agrifood sector's ability to work together towards common objectives. This can be observed in the willingness of the public sector to involve other stakeholders in decision making, as well as capacity within the private sector and civil society to engage meaningfully in these deliberations. Another indication of this culture of collaboration is the existence of hybrid initiatives and entities such as the Irish Food Board (Bord Bia) and the Agriculture and Food Development Authority (Teagasc), which are funded and governed partly by government, but also by industry and other actors. Semi-state institutions, such as Bord Bia, the guardian institution of the national food quality label and holder of premium market intelligence, and Teagasc, which is responsible for national research and extension, have both contributed to a "joined-up thinking" approach that underpins the food system. The onboarding of civil society, mainly consisting of environmental pressure groups and consumer representatives, is a more recent development and is characterized by open and frank exchanges of diverging viewpoints.

KEY INSIGHT 1

Provide strong leadership, but be open to societal dialogue

Many of the policies and investments that have led to important transitions, for example in the dairy sector, have come about because of strong leadership and ownership on the part of the Irish government in driving sector development. Yet, the quality of leadership is less about rolling out a solution, and more about co-designing a proposal with stakeholders from the outset. It requires upfront and continuous investment in collaboration with industry, knowledge and citizens. This institutional ability to coordinate informed conversations across sectors increases the likelihood of stakeholder acceptance over the long term.

2.2. Rolling ten-year strategies provide a continuum, monitored targets and an anchor for the sector's vision

As a mechanism for shaping priority policy actions and investments, the strategy process (described in Box 1 and Annex 2) has proven successful over the last two decades, according to interviewees. Aside from the most visible outcomes (a document with agreed actions and an accountability and monitoring mechanism to track progress), these strategies have created an important space for deliberation and negotiation among diverse institutions ranging from banks to environmental activists, industry, academia, investors, farmer unions and (semi)governmental agencies. This cross-sector networking aspect is often overlooked, but is an important achievement for a healthy agrifood sector. It generates a wider diversity of policy options to choose from, and if managed well, creates a stronger support base for new policies and investments towards food system transformation. The institutional relationships underpinning the strategy process have also acted as an important anchor leading up to Brexit and will remain so during the post-Brexit period.

KEY INSIGHT 2

Leverage existing rolling strategy processes to learn, align and adapt

Ten-year strategy processes have benefits for creating coherent policy narratives including action plans. In addition, they create new spaces for deliberation and networking, which makes cross-sector collaboration easier. The shifting focus of each iteration of these strategies, and the changing composition of committees, shows that these strategies can adapt by drawing on lessons learned. The strategy process has accelerated the achievement of targets and the reworking of initiatives where needed. The process has also aligned the vision of public and private actors in the agri-food sector, building on consumer and market insight and foresight. The next level of adaptation will increase effective engagement with environmental interest groups.

2.3. Using Ireland's agro-ecological comparative advantage to anchor core growth

Ireland has significant natural capital (temperate weather, abundance of rain, grasslands and marine resources) from which the Irish food system can, and has, profited. It can be argued that this comparative advantage predisposes Ireland to grass-based livestock systems as the most sustainable production system given its agroecology (see Figure 2).

Figure 2.
Dairy cows grazing
in green pastures

The downside is that Ireland's weather has not enabled the development of production systems for fruits and tubers, given recent poor harvests in the tillage sector. For many of these products, Ireland depends on imports. In addition, the reliance of the sector on limited products makes the overall system more vulnerable to shocks compared to more diversified alternatives. Consumer access to many fruits and vegetables is also either dependent on expensive domestic green-house technologies or imports. Conversations on commodity diversification with regard to sustainability are on the agenda in Ireland, but without research and innovation other sub-sectors may not provide the same returns to farmers as livestock.

KEY INSIGHT 3

Build on comparative advantages to develop a competitive agrifood sector

Ireland has substantial natural and socio-economic assets at its disposal, with a maritime climate favoring sustainable, grass-based production systems; the highest proportion of grassland in Europe, translating into carbon efficiency in dairy and beef production; no water scarcity concerns; a high-quality marine environment; and world-leading food safety and traceability systems. The ability to capitalize on these assets for sector growth and sustainability is a key capacity for any national government.

2.4. Placing agricultural research, extension and education at the centre of systems transformation

An integrated national approach to research and education accelerates knowledge absorption across the entire system, and provides a continuous flow of high-quality expertise to the food industry. Resolute public sector support is also reflected in public investments which account for 70 percent Teagasc's research budget, ensuring the integrity of research findings for industry and consumers. Ireland's agricultural knowledge innovation system (AKIS) has been ranked the fifth most innovative agrifood sector of the European Union, taking into consideration innovation inputs (private and public investment in research and development, R&D), outputs (patents, publications) and outcomes (firm and farm performance) (Renwick et al., 2014). Aside from direct public investments, incentives such as public-private partnership modalities were offered to encourage companies to engage more with R&D activities. Larger companies such as Kerry Group have also invested more than the industry average in R&D (2.5 percent of total revenue in 2019) (Kerry Group, 2020). Much of the public support for industry seem to have benefited the dairy sector more than the beef, poultry or horticulture sectors.

Teagasc has been instrumental in Ireland's development in this area. Teagasc's key contribution has been to deepen the knowledge base for agrifood, and to help farmers and industry apply new insights and innovations. The priorities for Teagasc's research and advisory work are set by an authority consisting of government, research, industry and farmers.

The integrated approach has also strengthened linkages between education institutes and industry and farmers, which also includes public-private partnerships for training and education programmes to ensure that the human capital needs of the sector are served. An example of this is the Origin Green Ambassadors Programme, a business sustainability programme for graduates, jointly run by Bord Bia, University College Dublin (UCD) Smurfit Business School and food companies.

Another example of public investment and coordination is Bord Bia, which provides market intelligence on export markets to Irish food, drink and horticulture businesses. Bord Bia has helped Ireland provide high-value products, such as protein isolate,⁹ to the global market. This value added requires the close alignment of research with industry, farmers and consumers of food.

⁹ Whey protein isolate is a high protein by-product of the production of cheese which is in high demand on the sports nutrition market.

KEY INSIGHT 4

Combine top-down and bottom-up innovation processes

Innovation in agrifood in Ireland is driven by two parallel dynamics: a centrally guided policy and strategy process, and bottom-up action learning and experimentation by farmer groups supported by researchers. Both of these dynamics are indispensable for healthy sector transformation, as they drive constant feedback loops between consumers, food chain actors, service providers, farms and research institutes. By building capacity at both levels, Ireland’s food system has been able to innovate, adapt and evolve in recent decades. These processes were aided by other dynamics, such as the strong market intelligence on the market side through Bord Bia, and strong food safety and quality standards mechanisms leading to high-quality products.

In Ireland, policy innovations are pursued in a two-fold manner: a strong centrally managed strategy process, as described in the case example (see Box 1); and bottom-up, farmer-led experimentation, knowledge sharing and new start-up business incubation. Farmers and researchers from Teagasc, for example, together with industry and unions, and increasingly also with the Environmental Protection Agency (EPA) on topics of watershed health and biodiversity, have a long tradition of seeking context-specific innovations for their sector. Ultimately, this approach has aided Ireland in moving from a focus on generic agrifood commodities to exporting prime branded products.

Figure 3.
Agrifood Strategy
2030 Stakeholder
Committee

BOX 1

Case example: Cross-sector collaboration and agrifood strategy development

The rolling ten-year strategies published by what is now called the Department of Agriculture, Food and the Marine (DAFM) have been a key policy instrument. The strategies are developed by committees consisting of sector and stakeholder representatives (see Figure 3), who are given a mandate to negotiate the vision, objectives and actions for the coming period, under an independent chair. The process is facilitated by the Irish Government and, to date, all the strategies developed have subsequently been adopted as government policy. Annex 2 provides an overview of the last five strategies.

How the strategies are developed

The formulation of these strategies every five years follows a similar pattern. A high-level committee is formed, supported by the Ministry, which drafts background documents, runs public consultations, commissions a mandatory environmental impact analysis and provides secretarial support to the committee. Much of the real debate takes place in the committee and subcommittees. Written submissions by stakeholders range from well-articulated industry arguments (often calling for less regulation in order to boost competitiveness) to well-substantiated arguments by environmental groups (often calling for more regulation to protect biodiversity, contribute to climate goals and address animal welfare issues). Aside from lobby groups, individual submissions are also made by concerned citizens and farmers. These submissions are evaluated by the committees, and also become part of the public domain, thereby helping to shape a public narrative around food and agriculture.

The current Chair of the Agri Food Strategy to 2030, Tom Arnold, noted that previous strategies included language related to environmental concerns, but sometimes lacked a sense of urgency to act. In the case of the Agrifood Strategy to 2030, this balance has assumed greater importance, both in terms of how the strategy is written, as well as how accountability mechanisms are created to support it. Achieving this balance is not easy and success is not guaranteed, as evidenced by the February 2021 decision of the Environmental Pillar to withdraw from the strategy process as they felt that their demands were not being sufficiently taken into account (McCormack and Donnelly, 2021).

To coordinate such an elaborate strategy process requires significant resources and capability. Practical tips from Tom Arnold include the following:

- Not planning, but strategizing: “If you can get agreement on the strategy, then it is relatively easy to get agreement on planning”.
- Consistent secretarial support from the Ministry: “Having a consistent, dedicated team that can convene committees, write working papers and draft minutes makes all the difference”.
- Recognize that these processes will touch on sensitive topics. “Good science and good manners” makes for a good working principle.

Putting the strategy into action

Once a strategy is approved, an Action Plan is drawn up by DAFM. FoodWise 2025 contained 417 actions, of which the 2019 Progress Report states that “376 were due to commence by 2019 or are ongoing. Of these 376 actions, 87 percent have been achieved or substantial action has been undertaken” (DAFM, 2020, p. 27). Actions are linked to one or more organizations, most of which are public organisations such as DAFM, the Agriculture and Food Development Authority (Teagasc), the Irish Food Board (Bord Bia) or the Environmental Protection Agency (EPA). The actions are linked to milestones, progress against which is monitored by High Level Implementation Committees (HLICs) that meet regularly. The HLICs include Chief Executive Officers (CEOs) of public organizations involved in the process and representatives of other relevant government departments. They are chaired by the Minister of Agriculture, Food and the Marine.

Sources: Interviews with key informants of the Irish agrifood sector; **McCormack, C. & Donnelly, M.** 2021. Blow to 2030 agri strategy as “green” lobby claim draft plans don’t deliver. *Farming Independent*, 2 March. www.independent.ie/business/farming/news/farming-news/blow-to-2030-agri-strategy-as-green-lobby-claim-draft-plans-dont-deliver-40147340.html; **DAFM.** 2020. *Annual review and outlook for agriculture, food and the marine 2020*. Dublin, Economics and Planning Division, Department of Agriculture, Food and the Marine. 282pp. (also available at www.gov.ie/en/publication/91e7e-annual-review-and-outlook-for-agriculture-food-and-the-marine-2020).

2.5. A well-developed regulatory framework and authority for food safety and food authenticity

High standards and authenticity assurances for food safety and sustainability are one of the foundations of growth in the modern agrifood sector. The Irish government has prioritized the traceability of agricultural products from farm-level to retail shelves, and the establishment of safety standards. A primary reason for doing so is to ensure safe food for Irish consumers: however, a high-quality food safety compliance system has enabled Ireland to penetrate high-value agrifood markets in Asia, the European Union and the United States of America. The establishment of Ireland's Food Safety Authority (FSAI) in 1998 contributed to this success. The FSAI actively partners with scientists, consumers, civil society and other government agencies to uphold Ireland's food safety credentials. As a result, Ireland ranks first in the Europe region on the food safety indicator of *The Economist's* Global Food Security Index (GFSI) 2019. While the focus on food safety has paid off for Ireland, greater leadership might be required to address the dietary shifts needed to combat malnutrition in all its forms.

KEY INSIGHT 5

Recognize that strong institutions representing all parts of the food system require ongoing investment.

Although there are many agrifood initiatives in Ireland, there has been an effort to combat fragmentation by providing strong mandates to specific institutions such as the FSAI (food safety), Teagasc (agricultural R&D and extension) and Bord Bia (driving quality and sustainability standards across industries). These institutions have invested in partnering capabilities, are well-connected with all sector players and represent various parts of the food system.

2.6. Environmental measures towards agrifood sustainability

Ireland's efforts to reduce the impact of the agrifood sector on the environment and drive down GHG emissions match recent global and European industry trends that emphasize environmental target setting and environmental, social and governance (ESG) reporting. The environmental impacts of agriculture represent a serious challenge for the agrifood sector (Environmental Pillar, 2016; EPA, 2019), especially given pressures created by vertical growth in dairy. However, a range of potential measures can be taken to help the transition towards sustainability. Some of these are hi-tech innovations using drones and geospatial technology, biotechnology or artificial intelligence (AI). Examples include the ApisProtect, a Cork-based start-up using in-hive sensors to monitor honeybee colony health that employs machine learning to provide decision support for beekeepers, and Dublin-based MagGrow which offers patented spraying technology that reduces crop protection chemical use by 50 percent. Other bottom-up innovations focus on regeneration and stewardship of landscapes, payment for ecosystem services, circularity and (re)usage of waste, and new business models for farmers. One such example is the results-based agri-environment scheme pioneered by ecologist Brendan Dunford in conjunction with over 300 farmers in the Burren, County Clare. Under the European Union-funded scheme, beef farmers are paid if their practices result in positive environmental outcomes. Over 15 years, pollution has decreased and local biodiversity (flowers and bumblebees) is flourishing.

However, many of these promising examples lack sufficient scale to leverage change in the agrifood regime as a whole. Four drivers can help in this regard:

The growing presence of younger generations in food markets has resulted in a shift in food-purchasing decisions, necessitating a response on the part of the private sector. These new food consumers make decisions based on health, environmental and social values, and animal welfare in addition to price.

The Irish government is responding to increasing investor confidence in the business case for sustainable food products by creating policy space to enable shifts towards sustainability to take place.

The launch of the European Union's "Farm to Fork" strategy and the "Green Deal" will allocate a minimum of 40 percent of the 2021–2027 budget of the CAP to climate action (Scown, Brady and Nicholas, 2020).

Private and public sector collaboration in support of sustainability schemes, such as Origin Green (see Section 2.7 for more details), is increasing.

There remain many potential policy measures to explore such as repurposing agricultural subsidies from negative externalities support (e.g. fertilizer), to positive externalities support (e.g. agroforestry).

2.7. Sector mobilization through sustainability schemes

The drive towards better food safety and traceability began as a way to promote Ireland's food industry abroad for export purposes. Bord Bia has been instrumental in organizing traceability throughout agricultural supply chains. They have adopted a model of quality assurance schemes for independent audits of quality standards leading to certification, which has been operational for more than 20 years, and is deemed efficient and, unlike many other countries, uniform. The same infrastructure for farm quality auditing has now been rolled out to measure compliance with sustainability standards at farm level, with 53 000 producers audited every 18 months. This links well with a global industry trend towards greater emphasis on environmental target setting and ESG reporting (WEF, 2020). In addition, a voluntary scheme called Origin Green has been developed by Bord Bia for companies in collaboration with Teagasc, farmers associations and processors. Currently 320 companies have joined. The scheme sets a mandatory mix of targets in three areas: raw material sourcing, manufacturing processes and social sustainability. Companies report yearly on their three- to five-year sustainability plan, which is audited independently. Origin Green provides one umbrella to mobilize the sector towards sustainability from farmers and food manufacturers, to retailers and foodservice companies. It provides all stakeholders with the opportunity to associate with a strong brand: over 90 percent of Irish food and drinks exports are now Origin Green-certified. So far, Origin Green has worked well for dairy and beef, for which Ireland has favourable soil and weather conditions. Conversations on commodity diversification with regards to sustainability are on the agenda, but other practices might not provide the same returns to farmers.

2.8. Leveraging policies and subsidies of the European Union

The Irish government and industry quickly identified the potential of the agricultural sector to support Ireland's recovery after the 2008 economic crisis. However, agrifood was not the only sector to play a role in lifting Ireland out of the recession in 2012. Much of the recovery can be credited to successfully attracting large tech and IT (information technology) companies to Ireland, using fiscal instruments such as low corporate taxes, as well as investments in human capital, construction, goods and services (Fitzgerald, 2014). Still, the role of leading agrifood businesses such as Kerry and Glanbia in pursuing global opportunities and driving the agenda has been recognized. Of specific relevance to the agrifood sector is the European Union's CAP, through which subsidies for farmers and nature protection are widely available. Irish farms are heavily dependent on EU subsidies, with 56 percent of average family farm income coming from direct payments from CAP funds (Parliamentary Budget Office, 2018). Ireland has benefited from these schemes, both in terms of supporting viable farmer incomes, increasing competitiveness, and investing in R&D for agriculture and the food industry. Since 2005, farmers have received European Union's support as decoupled direct payments, which are contingent on farmers keeping their land in "good agricultural and environmental condition" and complying with Statutory Management Requirements including meeting minimum standards for protection of the environment, animal health and welfare, and food safety. However, it is largely acknowledged that the CAP has failed to adequately address the sustainability of farming and climate change (Pe'er et al., 2020).

3.

What does this say about the transformation towards sustainability?

3 WHAT DOES THIS SAY ABOUT THE TRANSFORMATION TOWARDS SUSTAINABILITY?

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Having described the key processes and practices of Ireland's food system actors, it is necessary to examine how they have transformed the food system, and to consider the direction of this transformation.

A key moment in the transition was the realization following the 2008 economic crisis that agriculture could be a potential driver of growth for the whole Irish economy and a creator of much-needed jobs. This period saw the departure of many foreign firms, the country's indebtedness spiral and unemployment rates soar to 20 percent. Agriculture was deemed a reliable indigenous sector that could potentially act a driver of growth and much-needed employment generation for the Irish economy, while waiting for the global economy to recover from the financial crisis. This insight among industry leaders and government officials focused the development of policies to ensure progress in the agrifood sector. The combination of Ireland's investments in agrifood and, in parallel, conducive policy developments in the European Union, created "what economists call a 'virtuous development circle' which has involved a deepening of economic, social and institutional capital" (Arnold, 2008: 120). The effects of this development on the food system have been diverse and varied. Policy choices over the last few decades have prioritized better socio-economic outcomes including farm viability, technological innovation in food processing and food services, and better market integration through export promotion. In more recent years, the policy agenda has shifted towards balancing such socio-economic objectives with environmental goals. A potential new transition is currently underway in Ireland, with policies and investments increasingly focused on innovations to reduce environmental harm in production chains and food provisioning in support of healthy diets. Examples of these emerging initiatives include efforts by Teagasc to promote the use of clover to limit fertilizer, the market introduction of new plant-based protein consumer products by retailers, and the application of AI and geodata technology for precision farming.

"We were always part of the food system, that was implicit, but now we know that we are part of an agri-food system (local, regional and global – covering production as well as consumption). This food systems approach is relatively new. We expected some opposition to this kind of framing, but the Committee has really accepted it."

Seán Bell, Head of Secretariat of the Agrifood Strategy 2030, DAFM

Ireland’s transformation over the last few decades has been triggered by many contextual factors. In the natural context, a key factor is the country’s agroecological comparative advantage (Section 2.3). However, societal contextual factors are arguably more important. These include the economic crisis in 2008, which triggered policy responses and investments, and the lifting of milk quotas in 2015, as well as other EU policies under the CAP (Section 2.8). The way in which Ireland has capitalized on opportunities for agriculture can be linked to the proactive role adopted by the government. For example, the current shift towards environmental and biodiversity-sensitive agriculture, which is now bearing fruits, is an outcome of investment in environmental sustainability capabilities by DAFM over the last 10-15 years. DAFM also draws on the experiences of other state agencies, such as Bord Bia, FSAI and Teagasc, and works actively to maintain these linkages. The CEOs of these state agencies acknowledge that improved coordination and collaboration has been a priority for successful implementation of strategy processes such as FoodWise 2025 and Agrifood Strategy 2030. Likewise, buy-in from the private sector in terms of design and implementation proved essential.

The above-mentioned eight key processes and conditions have not all led to systemic change in Ireland’s food system. Some have delivered (or have the potential to deliver) profound change, such as a paradigm shift in the nature and direction of a food system, while others may only produce incremental change. An example of the former is Ireland’s culture of collaboration (Section 2.1). Without this dynamic, it is hard to conceive of the rapid development of the agrifood sector, specifically in regard to dairy, where stakeholders worked together during the FoodWise strategy to prepare for the ending of the milk quota system in 2015. Environmental measures (Section 2.6) provide an example of incremental change. Despite progress, initiatives such as Origin Green (Section 2.7) have not yet realized their full transformational potential. Rather, existing small niche sustainability initiatives have shown that other policy alternatives are possible, but have not yet created feedback loops leading to wider policy change or adoption of these niche initiatives into the wider food system regime (Geels and Schot, 2007).

KEY INSIGHT 6

Nurture niche initiatives today to provide a basis for sustainability and growth tomorrow

Niche initiatives need active nurturing, otherwise they produce only small ripples rather than more permanent food system changes. Examples of such niches include the Burren scheme (ecosystem services payment to farmers), new precision agriculture technology developed by start-ups, and new ways to nudge consumers towards healthier diet choices. Before promising niche initiatives can mature and be scaled up, they require soft investment capital, knowledge services and effective regulatory support.

4. Collective capabilities for food system transformation

4 COLLECTIVE
CAPABILITIES FOR
FOOD SYSTEM
TRANSFORMATION

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Ireland’s food system actors each have individual capacities, which – if orchestrated well – amount to collective capacities to deliver food system outcomes and contribute to food system transformation. These actors include farmers, traders, processors, retailers, the food service industry, various government agencies, research and education, environmental advocates and consumers. Ireland also has a growing number of bodies and initiatives that play essential roles in the food system. These are initiated and governed by multiple stakeholders, a reflection in itself of the institutionalized culture of collaboration. The more that these actors and initiatives are aligned, resourced, and have clear mandates and a results-based orientation, the greater the chances that their collective capacities will be expressed in the food system and will amount to significant transformative potential.

In order to make the illusive concept of “capacity” more tangible, Table 1 (see page 23) presents five capabilities (adapted from Baser and Morgan, 2008) that together comprise collective capacity, with examples from Ireland.

Table 1. Collective capabilities for the transformation of the Irish food system

CAPABILITY	CHARACTERIZATION OF THE SITUATION IN IRELAND
<p>Capability to resource, act and deliver for sustainability transformation</p> <p><i>Key words: intervention management (doing things right), resource allocation</i></p>	<p>The restructuring of Teagasc contributed to improved service of agricultural advice and innovation provisions to farms and industry. Examples include bottom-up action-based learning with farmers to improve farm practices. Origin Green provides an interesting example of concerted efforts to measure progress and communicate consistently across food system actors, steering towards agreed (yet tailored) goals. Rolling strategy processes result in plans with monitored actions. Lessons learned then feed into new strategy iterations. Senior decision-makers from different stakeholder groups contribute to strategic deliberations.</p>
<p>Capability to relate and partner for sustainability transformation</p> <p><i>Key words: relationships and collaboration</i></p>	<p>Ireland's culture of collaboration has a long history drawing on a corporatist and social partnership approach (social contract). Ireland is also a relatively small country where meeting and connecting with other actors is relatively easy. This results in the creation of public-private partnerships in education and training for food professionals, such as MSc courses on sustainable food supply.</p>
<p>Capability to adapt and self-renew to align with sustainability transformation requirements</p> <p><i>Key words: urgency responsiveness and willingness to change</i></p>	<p>Ireland has repeatedly demonstrated an ability to respond to crises, ranging from famine to economic meltdown. Government leadership has proven able to formulate a vision and forge buy-in from industry to leverage opportunities for export food production and value added. However, niche initiatives for ecosystem services, circularity and healthy diets, among others, struggle to find traction. The Agrifood Strategy 2030 process is taking environmental concerns on board, representing a shift from previous strategies.</p>
<p>Capability to address diversity and achieve coherence in sustainability transformation</p> <p><i>Key words: inclusion and coordination, leadership, doing the right thing</i></p>	<p>Encouraging efforts include the integration of environmental voices into collaborative processes, while recognizing that this leads to inherent trade-offs and compromises. The participation of environmental advocates and (young, urban) consumers is relatively recent. Despite public investments in innovation, the centralized coordination necessary to focus the innovation agenda towards a food system approach (covering human health, environmental sustainability and animal welfare, etc.) can further be strengthened.¹ Dealing with the management of trade-offs between the economy, on the one hand, and environmental and health concern, on the other, is on the agenda but has proven a challenge.</p>
<p>Capability to anchor food systems sustainability transformation in relevant institutions</p> <p><i>Key words: institutionalization and consolidation of achievements</i></p>	<p>Ireland has established a practice of setting reliable and predictable food safety standards through the FSAI, with adequate mandate supported by law. Linked certification schemes include uniform and consistent auditing and monitoring through Bord Bia, and are now being extended to the environmental performance of farms and food industry (Origin Green scheme). Farmer cooperatives, especially dairy, are well-established and connected to the government. Much legislation benefits from European laws and the CAP (which could be supportive or restrictive of food system transformation).</p>

Note: As an aside, Ireland's capacity for coherence also manifests in its foreign aid spending. In 2020, Ireland ranked 4th out of 29 countries in the ODI's Principled Aid Index 2020. This index measures whether bilateral donors use aid to advance both their values and their interests. The index is not broken down by SDG and does not speak specifically about Ireland's aid to agriculture and food.

5.

Final reflections

5 FINAL REFLECTIONS

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At present, the top challenges in agrifood concern the environment, human health and nutrition. In terms of the environment, the urgency is clear and public concern about biodiversity, pollution and climate change continues to make this challenge a top priority. In recent years, environmental spokespersons have been invited to participate in strategy processes and public debates with varying degrees of success. The withdrawal of the environmental pillar from the 2021-2025 agrifood sector strategy process is a harsh reflection of the difficulties involved in aligning visions, gauging trade-offs and making compromises during multi-stakeholder processes.

The voices of investors and policy-makers making the business case for environmentally sound agriculture and food are also becoming more prevalent. One interviewee summarized it as follows:

If the environmental voice had been strong ten years ago, as it is today, and at the table articulating key metrics and problems and the need to face up to them in an organized manner, it would have been very problematic to write the reports that were written in the past.

Today, environmental sustainability is in the interest of all stakeholders. Furthermore, as the next CAP is expected to provide incentives for the protection of the environment and climate action, environmental sustainability measures will likely translate into financial gains.

The urgency of the health and nutrition challenge, however, is less clear. While the focus on food safety has paid off for Ireland, more leadership might be required to address the dietary shifts needed to combat malnutrition in all its forms. Government agencies are reluctant to be prescriptive regarding what food consumers should eat and what food companies should produce, with the exception being the tax on sugar-sweetened drinks, introduced in 2018 following the adoption of a sugar tax by the United Kingdom of Great Britain and Northern Ireland. Yet, indicators for overweight and obesity and breastfeeding are not trending in the right direction and the limitations of a self-regulated industry are becoming visible. Many interviewees expressed concern that the public sector should do more to move the needle on healthy diets. This is where the capacity of government to work across ministerial silos should become more apparent, with collaboration between ministries of agriculture and ministries of health all over the world proving to be difficult to achieve.

KEY INSIGHT 7

Create a sense of urgency to change course

If a crisis or disruption emerges and there is sufficient recognition that the agrifood sector may be a strong driver for recovery, efforts must be aligned towards supporting the sector to this end. Ireland's efforts following the economic crisis in 2008 show that this can be done. The country shifted incentives towards promising indigenous sectors such as dairy and beef through a combination of policies, investments, and research and advisory services.

The impacts of the COVID-19 pandemic and Brexit have not been explicitly addressed in this rapid appraisal, but the fallout from these disruptions was nonetheless uppermost in the minds of the interviewees. Ireland's open, export-oriented model and reliance on the food market of the United Kingdom of Great Britain and Northern Ireland makes it particularly vulnerable to the outcome of Brexit, in addition to the recessions of its trading partners. These factors demonstrate the fragility of any past garnered success in the agrifood sector. As such, Ireland will need its capabilities to "adapt and self-renew" and "anticipate and navigate complications" and disruptions in the near future in order to pivot its food system towards sustainability.

This rapid appraisal has looked at processes and practices that have been instrumental in Ireland's food system transformation over the past decades. During the interviews, much emphasis was placed on the production side of the food system, including improvements in productivity, and innovations in value added to agricultural materials in order to offer high-quality products to an increasingly international market. Other aspects of the food systems were less prominent, possibly reflecting a dialogue gap on topics on the policy agenda, notably those related to nutrition, such as drivers of food choice, shifting dietary preferences, and actions to decrease overweight and obesity.

The environmental dimension of the food system is clearly at the forefront of debate at all levels. While much has been accomplished to reduce emissions and pollutants, most interviewees expressed concern that the actions taken to date are insufficient to meet international targets, and that the pace of action is too slow. While Ireland's current government has set ambitious goals to reduce GHG emissions each year in order to reach carbon neutrality by 2050, the contribution of the agrifood sector to achieving this goal remains politically sensitive.

Finally, protecting and further improving the Irish food system will require an increasing number of stakeholders to play their roles effectively, and in concert with others. It is hoped that Ireland's agrifood sector can tap into its rich reservoir of capacities and practices to drive food system transformation, in order to further enhance its sustainability, and in so doing continue to share its insights and learning with other nations that are on a similar path to sustainable transformation.

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Annexes

- 1. Ireland's food system**
- 2. Details of the last five agrifood rolling ten-year strategies**
- 3. List of interviewees**

Annex 1. Ireland's food system

The spiderweb graph presented in Section 1.4 provides a quick overview of the different dimensions of the Irish food system. The appraisal distinguishes between three dimensions within the food system:

- food and nutrition security performance;
- environmental sustainability performance;
- socio-economic and political performance.

While it is not possible to capture an entire food system with one visual element, this figure is intended as a **discussion starter** regarding Ireland's performance within these different dimensions. To create an integrated and comprehensive overview, a variety of topics/indices that comprise a larger set of primary indicators were selected. For example, the food accessibility component includes indicators on food price, income per capita, poverty indicators and the presence of food safety net programmes. In the table below, links are included for further information on the indicators used. In addition, only indicators that are available for all countries included in this study were used. See Table A1.1 for a detailed list of the indicators selected.

For Ireland, **food security scores** high while progress on global nutrition targets seems to lag behind. Here, it must be noted that data were missing on four out of ten targets (under-five wasting, under-five stunting, under-five overweight and exclusive breastfeeding). Although it might be assumed that targets on stunting and wasting are being met, this is not the case for the other two. This suggests that even though food security is high, nutrition security and health outcomes still need attention.

Regarding **environmental performance**, environment and biodiversity objectives are becoming increasingly prominent Irish food policies. However, these efforts have not (yet) translated into measurable outcomes, especially with regard to efforts to improve key ecosystem services and reduce the impact of agriculture.

Social, economic and political performance includes a set of indicators that shed light on the enabling context for food systems to thrive. The spiderweb seems to indicate that social and political context may represent a challenge for the Irish food system. In addition, a growing population and positive urbanization rate together result in demographic pressure on the food system which may pose a challenge to meet food demand. It should be noted that economic indicators are also integrated into a variety of topics related to food and nutrition security performance.

Table A1.1. Selection of indicators for the construction of the food system performance chart

TOPIC	INDICATOR USED	SOURCE
Food and nutrition security performance		
Food security (general)	Global Food Security Index (GFSI)	GFSI ¹
Food accessibility	Affordability component of GFSI	GFSI
Food quality and safety	Quality and Safety component of GFSI	GFSI
Progress on Global Nutrition Targets	On/off track on global nutrition targets (10)	Global Nutrition Report
Environmental sustainability performance		
Progress to combat climate change	Climate change component of EPI	EPI ²
Sustainable management of wastewater	Wastewater treatment component of EPI	EPI
State of key ecosystems	Ecosystem services component of EPI	EPI
Actions towards protecting natural ecosystems and biodiversity	Biodiversity and habitat component of EPI	EPI
Sustainable nitrogen management	Sustainable nitrogen management index	EPI
Socio-economic and political performance		
Enabling business environment	Doing Business index	World Bank
Political stability	Political Stability index	World Bank
Social equality	GINI (inequality)	World Bank
Demographic conditions to meet food demand	Demographic stress component of GFSI	GFSI

¹ Global Food Security Index, The Economist Group² Environmental Performance Index, Yale University

Annex 2. Details of the last five agrifood rolling ten-year strategies

Agri Food 2010 (published in 2000). *“To propose a strategy for the development of Irish agriculture and food over the next decade, following the agreement on Agenda 2000”*. Focus: agriculture. The Agri Food 2010 Committee received 39 public submissions.

Agri Vision 2015 (published in 2004). *“Review the strategy and recommendations contained in the Agri Food 2010 Report in the context of developments since the report was completed”*. Focus: agriculture and food. The Agri Vision 2015 Committee received 12 public submissions.

Food Harvest 2020 (published in 2010). *“A cohesive roadmap for the industry to build capacity, adapt to challenge and grow in the context of emerging opportunities in the decade ahead”*. Focus: agriculture, food and jobs. A series of discussion and background papers were prepared, and a total of 75 submissions were received.

Food Wise 2025 (published in 2020). *“A strategy developed by private and public stakeholders which sets a course for the industry for smarter, greener, more sustainable growth”*. Focus: agriculture, food and export revenues. The questionnaire-based public consultation yielded 59 submissions. Fifteen sectoral background documents were prepared and a public conference was held leading to an Action Plan with 412 agreed actions.

Agrifood Strategy to 2030 (expected publication: 2021). *“The Agrifood Strategy to 2030 is a voluntary industry led strategy facilitated by the DAFM. A public consultation forms an essential part of this process”*. Focus: agriculture, food and environment. The process included a public consultation based on a questionnaire document, followed by an Open Policy Debate in 2019 to which 400 stakeholders were invited.

Annex 3. List of interviewees

A total of 12 well-informed actors from the Irish agrifood sector (see Table A3.1) were interviewed between the months of July and August 2020.

Table A3.1. List of interviewees

NAME	AFFILIATION
Arnold, Tom	Chair, Agrifood Strategy to 2030 Stakeholder Committee
Bell, Seán	Chief Economist, Economics and Planning Division, Department of Agriculture, Food and the Marine (DAFM); Head of Secretariat, Agrifood Strategy to 2030
Buckley, Sharon	Group Commercial Director, Musgrave
Deakin, Jenny	Senior Catchment Scientist, Environmental Protection Agency (EPA)
Duggan, Oonagh	Assistant Head of Policy and Advocacy, Birdwatch Ireland
Finnerty, Paul	Co-Founder and Chairman, Yield Lab Europe
Grimes, Fintan	Poultry sector consultant, GriFin QCS Ltd.
Hanrahan, Kevin	Head of Rural Economy and Development Programme, Agriculture and Food Development Authority (Teagasc)
Hofler, Martin	Sustainability Development Manager, Irish Food Board (Bord Bia)
Lascurettes, Catherine	Dairy Executive, Irish Farmers' Association
Murphy, Pat	Chair, IBEC Dairy industry Ireland; CEO, Kerry Ireland
Ryan, Deirdre	Director, Origin Green and Sustainable Assurance, Irish Food Board (Bord Bia)

Related publications

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