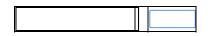
The relationship between climate change and agriculture is a contentious, complex and important one. In this series of twelve blogs, UCD Adjunct Professor Frank Convery will explore the context, challenges and potential solutions for dairy, beef and sheep farming in Ireland. Each blog presents key evidence to underpin informed debate and the series seeks to help plot a sustainable future for the sector.

Responses are invited via <u>earth.institute@ucd.ie</u> and the UCD Earth Institute will host a workshop in association with the UCD School of Agriculture and Food Science and the National Economic and Social Council at the end of the series to discuss the evidence and its implications.

Professor Tasman Crowe, Director, UCD Earth Institute



#### News & Events



<u>Tasman Crowe contributes to</u>
<u>pre-legislative scrutiny of</u>
<u>Marine Protected Areas Bill 2023</u>



Earth Institute artist in residence Deirdre O'Mahony hosts Eat Food Policy feast



Comparative public policy researcher Dr Tamara
Krawchenko visits UCD

# 10. Climate Performance by Irish Ruminant Farming: Common Agricultural Policy (CAP) 2023-2027

## Frank Convery, Adjunct Professor, University College Dublin

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"Ireland will become a **world leader** in Sustainable Food Systems (SFS) over the next decade. This will deliver significant benefits...and will also provide the basis for the future competitive advantage of the sector."

Food Vision 2030[1].

"There is a mob of their constituents ready to hang them if they should deviate into moderation"

Edmund Burke: Letter 27 September 1789

#### **Some Key Points**

An overall conclusion is that implementation of CAP 2023–2027 will improve climate performance of the sector, but it is unlikely to: reduce greenhouse gas emissions and store carbon at scale sufficient to meet government targets, deliver an average carbon footprint the ensures consumer loyalty in key markets and make Ireland a world leader in sustainable food systems by 2030. One key challenge is the fact that the schemes are 'opt in' which creates incentives for farmers to free ride; another is that, relative to climate policies for other sectors, the policy instrument mix mobilised in CAP 2023–2027 is very narrow.

Annual average annual CAP expenditure on climate and environment is expected to increase from €234 million in 2014-2020 to €700 million in CAP 2023-2027 with the addition of a new funding source (Eco-Scheme) in Pillar 1 and a substantial increase in annual funding in Pillar 2 from 2014-2020 (GLAS) to 2023-2027 (ACRES). Most of the ACRES′ funding will be taken up by beef and sheep farmers where average incomes are low, and many of them are in the vicinity of Natura 2000 sites, where the biggest threats to biodiversity are to be found.

The integration of the European Innovation projects into the replacement funding (ACRES) for GLAS and the associated adoption of the EIP focus on pay for performance, and its grassroots and group engagement, should deliver economies of scale and scope, and achieve better diversity outcomes from the Natura 2000 sites. However, the capping of payments per farm will reduce outcomes Most dairy farmers are likely to avail of the funding under Pillar I (Eco-Scheme) to apply chemical fertiliser with a GPS-controlled spreader which is both good news (it will help reduce emissions) and bad news (most of it would happen anyway because of the rise in fertilizer prices. There is insufficient focus in CAP 2023–2027 on reducing emissions from dairy at scale, which would be compensated for in part by delivery of the 5 recommendations of the Food Vision Dairy Group.

#### Introduction

Greenhouse Gas emissions by farm system in Ireland show that ruminant farming in 2019 accounted for 95% of the total, with Dairy (43%) and Cattle (39%) dominating (Table 1).

Table 1. GHG Emissions from Five farm systems, 2019

Farm System	Greenhouse Gas emissions, 000 tons CO2e		Average Emissions per farm Tons of CO2e	% Total GHG Emissions
Dairy	8202	16146	508	43
Cattle	7393	53966*	137	39
Sheep	1876	14322	131	10
Tillage	901	6879	131	5
Mixed Livestock	588	1140	516	3
Total	18960	92453	205	100

<sup>\*</sup> Derived by adding number of farms cattle rearing (25838) and other cattle (28128)

Sources: I struggled to find presentations of emissions per farm system. The above numbers are derived by multiplying number of farms (TeagascNFS2019Final\_WebVersion TD\_vl.docx, p. vii) by the average emissions per farm (NFS-2019-Sustainability-Report.pdf (teagasc.ie), pp. 69, 71, 73, 75).

Note that the total of ~19 million tons is less than the total of 21.1 million tons recorded by the EPA for 2019. This is because: the above excludes pig and poultry farm emissions, and 'other' e.g., deer; the National Farm Survey (NFS) sustainability report 2019 is representative of ~90,000 of the 130,000 or so farms in Ireland. Some 40,000 very small farms (producing less than €8,000 in output) are not included as they fail to meet the size threshold for inclusion in the Farm Accountancy Data Network methodology; agriculture related fuel emissions of 0.6 Mt CO2 Eq. are not included.

The Common Agricultural Policy (CAP) was launched in 1962. At that time, security of food supply in Europe was a key consideration and supporting product prices was the core policy. The latter was so successful that, in the case of many products, farms produced more product than the market was willing to absorb, and large food surpluses emerged (it became the era of 'butter mountains and wine lakes'). Beginning in 1992, price support was scaled down, and replaced with direct payments to farmers. In 2003, a new CAP reform cut the link between subsidies and production. Farmers now receive income support, on condition that they look after the farmland and fulfil food safety, environmental, animal health and welfare standards. In 2013, the CAP was further reformed with the aim of 'strengthening the competitiveness of the sector, promoting sustainable farming and innovation, supporting jobs and growth in rural areas and moving financial assistance towards the productive use of land.'[2] This was the policy template that applied in the 2014-2020 cycle.

The European Green Deal is to be the signature of the EU, as led by President Ursula von der Leyen and her Commission team (2019-2024). Details are provided in Blog 3 ('The wider context – European Green Deal'). The Common Agricultural Policy (2023-2027) will reflect this change. Below, I touch on the evidence we have as regards the key elements of CAP 2014-2020 as it was applied in Ireland, and then summarize some key features of Ireland's proposals for 2023-2027 and how they differ. I conclude my assessment with some judgments as regards the adequacy of the CAP provisions on their own to make Ireland a global leader by 2030 in climate change outcomes and sustainable food systems.

#### **Evidence**

#### **CAP 2014-2020**

#### European Union (EU 28)

The EU28 2014-2020 CAP expenditure totalled €408.313 billion. It was distributed as follows: €291.273 billion for direct payments (71.3% of the CAP total); €99.587 billion for rural development (24.4%); and €17.453 billion for market measures (CMO) (4.3% of the total). [3]

In this period, Member States gave climate mitigation and adaptation only a small budget and a low priority. EU greenhouse gas emissions from agriculture have fallen by more than 20% since 1990, but they have stagnated since 2010: "While reducing total emissions in agriculture remains essential to achieve the EU's climate objectives, it is worth highlighting the significant increase in output efficiency (i.e. lower emissions per unit of output): agricultural production has increased by 9% since 2010."[4]

#### Ireland

The CAP was organized under two broad pillars, Pillar 1 being direct (basic) payments to farmers, wholly funded by the European Union, and Pillar 2 including a series of measures that were co-funded by the EU (53%) and Ireland as the member state (43%) under the general heading 'Rural Development'. The main instrument used are subsidies.

#### Rural Development

Total funding over the 2014-2020 was €4.145 Billion, of which 72.9% was devoted to two measures, the Green Low Carbon Agri-environment-climate scheme (GLAS) and to farms in areas facing natural constraints.

Table 2. EAFRD and national funding (Pillar1) for the 2014 -2020 Rural Development Programme €Million

Activity	Amount (Millions €)	Annual Average (Millions €)	Rank	% of Total	
>100 Million €					
Measure 10 – Green Low Carbon Agri-environment-climate (GLAS)	1,531	218.7	1	36.9	
Measure 13 – Payments to areas facing natural or other specific constraints	1,491	213.0	2	36.0	

GRAND TOTAL	4145	592.1		100
TOTAL <10 million €	31	4.4		0.7
Measure 7 – Basic services and village renewal in rural areas	6	0.9	11	0.1
Measure 20 – Technical assistance	8	1.1	10	0.2
Measure 2 – Advisory services, farm management and farm relief services	8	1.1	10	
Measure 113 – Early Retirement Scheme (Transitional)	9	1.3		It recommended 7 core measures
<10 million €				
TOTAL 10-99 Million €	191	27.3		4.6
Measure 11 – Organic farming	56	8.0	9	1.4
Measure 16 – Co-operation	62	8.9	8	1.5
Measure 12 – Natura 2000 payments	73	10.4	7	1.8
10-99 Million €				
TOTAL >100 million €	3923	560.4		94.6
Measure 14 – Animal welfare	100	14.3	6	2.4
Measure 1 – Knowledge transfer and information actions	126	18.0	5	3.0
Measure 19 – Support for LEADER local development	250	35.7	4	6.0
Measure 4 – Investments in physical assets	425	60.7	3	10.3

Source: DAFM 2020: Review and Outlook, 2020, Table 8.5, page, 265

#### Annual Payments by Measure, 2020.

To provide more detail, I provide a breakdown of the transfers made to farmers in 2020 in Table 3.

About 64% (€1.2 billion) went on direct payments, while the balance - €0.68 billion – was devoted to 17 schemes under Pillar 2 (Rural Development). Of the latter, most of the Pillar 2 expenditure (~€450 million) was devoted to farmers operating in areas of natural constraint or participating in the Green Low Carbon Agri Environment Scheme (GLAS). As noted in Blog 1 ('Looking Back') while GLAS provided financial support for low-income farmers, and delivered some biodiversity benefits, its impact on greenhouse gas emissions was negligible.

Table 3 Direct Payments to Farmers (National and EU), Ireland 2020

Scheme	Amount (Millions €)	Rank	% of Total
>€200 million			
Pillar 1 (EU only)			
Basic Payments	1187.5	1	63.59
<b>Rural Development</b> <i>Pillar 2</i> (EU and Irish government)			

1. Areas of Natural Constraint	247.3	2	13.24
2. Green Low Carbon Agri Environment Scheme (GLAS)	202.6	3	10.85
Total >€200 million	1637.4		87.68
>€40 million not included in the above			
3. Beef Finishers Payment	46.5	4	2.49
4. Forestry Premia	45.2	5	2.42
5. Beef and Data Genomics	42.7	6	2.29
6. Beef Environmental Efficiency Pilot	40.9	7	2.19
Total	175.3		9.39
<€40 million			
7. Bovine Tuberculosis Eradication	20.7	8	1.11
8. Sheep Welfare Programme	16.8	9	0.90
9. Organics	8.4	10	0.45
10. Hen Harrier	3.2	11	0.17
11. Beef Exceptional Aid Measure	2.0	12	0.11
12. Burren Programme	1.3	13	0.07
13. Traditional Farm Buildings (GLAS)	1.1	14	0.06
14. Blackstairs Farm Futures	0.3	15	0.02
15. Sustainable Uplands Agri- Environment	0.1	16	0.01
16. Sustainable Agriculture MacGillycuddy Reeks	0.1	17	0.01
Total <€40 million	54.0		2.91
Total Pillar 2	679.9		
GRAND TOTAL	1867.4		100

Note: the environment-specific funding is shown in bold.

Source: <u>DAFM AN REVIEW AND OUTLOOK 2021.pdf</u> p.243

### **CAP 2023-2027**

Ireland submitted its proposals to the Commission, which provided feedback. The proposals were revised re-submitted and approved in August 2022. As was the case for the 2014-2020 period, the funding proposed for farmers is mainly provided in two tranches – Pillar 1 (focus on basic income) and Pillar 2 (Rural Development)

#### Pillar 1

The key budgetary provisions are as follows:

Table 4. Pillar 1 Indicative Financial Allocations, Ireland, 2023–2027, Mill €

Category	Total	Average Annual	% Total
Basic Income Support for Sustainability (BISS)	3642.9	728.48	60.95
Eco-scheme	1482.9	296.58	24.81

Complementary Redistributive Income Support for Sustainability (CRISS)	593.1	118.62	9.92
Other: Young Farmers (177.9); Fruit and Veg (44.7); Protein Aid (35.0); Apiculture (0.6)	258.2	51.64	4.32
TOTAL	5976.7	1195.34	100

Source: Government of Ireland, 2022: <u>Summary of Ireland's CAP Strategic Plan 2023-2027.pdf</u>, p. 38.

It is estimated that 129,000 farmers will be eligible for these payments. The Teagasc NFS sampling frame is restricted to farms over €8,000 of standard output (equivalent to 6 dairy cows, 6 hectares of wheat or 14 suckler cows). A total of circa 85,000 farms are represented in this study for 2021. This implies that there are 44,000 beneficiaries with an annual on-farm income <€8000.

Although the aggregate average annual amount (~£1.2 billion) is about the same, there are significant changes in its composition; instead of one basic income line, there are now four broad categories: instead of basic income being 100% of this category, it now comprises ~61% of the total, while ~25% is now dedicated to pay for environment-specific actions, a further ~10% is focussed on favouring lower income farmers, while over 4% is allocated to favour disparate groups, the largest beneficiary of which is young farmers.

#### Conditions 5.

To be eligible for payments, there are nine Good Agricultural and Environmental Conditions (GAEC) standards that must be met:

- Maintenance of permanent grassland. General safeguard against conversion, implemented at National level to ensure that the ratio of permanent grassland to agricultural area does not decrease more than 5% when compared to the reference year of 2018.
- 2. Protection of wetland and peatland: Wetland and peatland areas will be mapped and this GAEC standard will be implemented in 2024. Requirements will include restrictions on certain practices –e.g., conversion of permanent grassland on wetland and peatland to other agricultural land uses such as grable
- 3. Ban on burning arable stubble, except for plant health reasons.
- 4. Establishment of buffer strips along water courses Various buffers apply in respect of spreading of organic manures, storage of farmyard manure in a field, ploughing/cultivation and application of certain products. The application of chemical fertilizers and pesticides within 3 meters of a watercourse will be prohibited.
- Tillage management or other appropriate cultivation techniques to limit the risk of soil degradation and erosion.
- Minimum soil cover to avoid bare soil in period(s) and areas that are most sensitive. Avoid poaching, avoid over-grazing.
- 7. **Crop rotation** in arable land.
- 8. Minimum share (4%) of agricultural area devoted to "space for nature": Retention of landscape features. Ban on cutting hedges and trees during the bird breeding and rearing season. Measures for avoiding invasive plant species.
- 9. Ban on ploughing or conversion in ESPG areas.

All but 3 (Burning Arable Stubble), 5 (Tillage management), 6 (Minimum soil cover), 9 (Ban on Ploughing) are directly relevant for ruminant farming.

#### Eco-Scheme

As noted above, the most significant change from the 2014–2020 CAP is that Member states are obliged to earmark 25% of all Pillar 1 funding for climate, environmental and biodiversity purposes.[6] In Ireland's case, this amounts to almost €1.5 billion in total, or ~€300 million annually.

#### Eligible Actions

To secure this funding, farmers will have to implement at least two of the following eight agricultural practices:  $\boxed{7}$ 

1. **Space for Nature** – at least 7% of a farmer's holding must be devoted to biodiversity habitats or landscape features, building on the 4% requirement for all farmers

- already set under GAEC 8 as part of Conditionality.[8] Where the farmer commits to at least 10%, this counts as two actions under the Eco Scheme.
- 2. Extensive Livestock Production minimum stocking rate of 0.10 LU/ha (same as ANC) with a maximum stocking rate of 1.4 LU/ha. Where the farmer commits to a maximum stocking rate of 1.2 LU/ha, this will count as two actions under the Eco Scheme
- 3. Limiting Chemical Nitrogen Usage (kg organic nitrogen applied per hectare) depending on kg applied in 2022, with the maximum applied ranging from 73 to 214 kg.
- 4. Planting of Native Trees and hedges —plant 3 native trees per eligible hectare or 1 metre of hedgerow. Where a farmer commits to plant twice that either (a) 6 native trees or (b) 2 metres of hedgerow or a combination (c) 3 trees and 1 metre of hedgerow, per eligible hectare, this will count as two actions under the Eco Scheme.
- 5. Use of a GPS-controlled fertiliser spreader or GPS controlled sprayer Application of at least 100% of chemical fertiliser (whether compound or liquid) or plant protection products to be applied with a GPS controlled fertiliser spreader and or GPS controlled sprayer.
- 6. Soil Sampling and Appropriate Liming on all eligible hectares.
- 7. **Planting of a break crop(s)** The Eco Scheme will require that at least 20% of the arable area of the holding in the year of the commitment is planted to a prescribed break crop of either Oilseed Rape, Oats, Peas and Beans or a combination of one or more of these crops
- 8. **Sowing of a Multi Species Sward**, on at least 7% of the farmers eligible area in the year s/he selects this as an Eco-Scheme action.

It notes that "within the list above, specific actions may be targeted at a specific cohort or intensity of farmers".

Eligibility.

The Eco Scheme will be open to all active farmers in the country, or groups of active farmers; 129,000 eligible farmers could participate in the scheme.

"If 85% of the eligible hectares currently claimed by farmers participate in the scheme successfully and assuming all hectares receive the same payment rate, the payment rate would be approximately €77 per hectare."

#### Pillar 2

The total allocation over the period is €3.68 billion, averaging €772 million annually, of which ~39% is allocated to the Agric-Climate Rural Environment Scheme (ACRES). Two other programmes – Sucker Carbon Efficiency (6.73% of total) and Organic Farming (6.63%) – are also expected to reduce emissions, so that over 50% of the total allocation in principle is directed at emissions reduction and environmental purposes. Of the remainder, an additional 30% will go to farmers in areas of natural constraint.

Table 5. Pillar 2 Indicative Financial Allocations, Ireland, 2023–2037, Mill €

Category	Total	Average Annual	% Total
Agri-Climate Rural Environment Scheme (ACRES)	1500.0	300.0	38.84
Areas of Natural Constraint (ANC)	1250.0	250.0	32.37
Suckler Carbon Efficiency	260.0	52	6.73
Organic Farming	256.0	51.2	6.63
LEADER	180.0	36.0	4.66
On-farm Cap Investment	100.0	20.0	2.59
Sheep Improvement	100.0	20.0	2.59
Other[ <u>9]</u>	215.6	43.12	5.58
	3861.6	772.32	100

Source: Government of Ireland, 2022: <u>Summary of Ireland's CAP Strategic Plan 2023-2027.pdf</u>, p. 38.

#### Agri-Climate Rural Environment Scheme (ACRES)[10]

ACRES will replace the current GLAS scheme and the existing EIP projects and will build on the learnings arising from EIPs and will achieve increased environmental ambition.

Using a habitats-based approach, it aims to contribute significantly to achieving improved biodiversity, climate, air, and water quality outcomes.

Given the climate imperative of proposed actions under the next CAP, there will be a dedicated action for farmers under this intervention for improved water table management. Similarly, significant tree planting measures will be included, including agro-forestry and riparian planting. This will help deliver co-benefits, along with climate, for water quality and biodiversity.

Each farmer's Farm Sustainability Plan will include field and desk assessment for action suitability, to ensure that the right action is undertaken in the right place, and to ensure that any risks of negative impacts – either direct, indirect, or cumulative – are mitigated and minimised. Farmers who choose to participate in ACRES will have one agrienvironment climate measure contract only.

Results-based approaches will be used, where appropriate, and support for non-productive investments will be provided when necessary to help improve habitat scores.

These will be achieved through two approaches:

1. **General:** offering a range of measures for individual farmers (both targeted and general). Farmers together with their advisors will select actions from the general list of actions available.

Average payments will be in the region of €5,000 per annum over the five-year period with the potential to reach a maximum of €7,300. Expected uptake 30,000 farmers.

**2. Co-operation Project**: for farmers in defined high priority geographical areas,[11] who opt to undertake measures.

Farmers will have the assistance of a Local Cooperation Project (CP) Team; a ranking and selection process will apply in order to ensure that it achieves its maximum potential by engaging those farmers with the most appropriate land and those willing to undertake the most environmentally ambitious actions.

Average payments will be in the region of €7,000, with the potential for a maximum of €10,500. This includes payments for non-productive investments and landscape actions. Farmers, together with their advisors, will decide what actions they may take to increase the score on their lands to increase their payment levels. Expected uptake 20,000 farmers.

#### Expenditure Comparisons 2014-2020 and 2023-2027

A comparison of average annual financial allocations over both periods shows that while the total annual average expenditure on Pillar 1 stays roughly the same, instead of the relatively simple single payment algorithm applied in the 2014-2020 period, it also includes an eco-scheme, a redistributive income mechanism and a variety of smaller elements in 2023-2027 (Table 6)

Table 6 Comparison of Average Annual Allocations Pillar 1 and 2, 2014–2020 and 2023–2027

	2014-2020	2023-2027	Comment
Pillar 1			
Basic Payment	1187	728	For 2014-2020 I used data for year 2020 as 'representative'; I could not find annual average for the period.
Climate- Environmental Pillar 1	-	297	Eco-scheme
GRAND TOTAL PILLAR	1187	1195	Total for 2023-27 also includes annual payments to: Redistributive Income (118.6); Young Farmers (25.4); Fruit and Veg (6.4); Protein Aid (5.0); Apiculture (0.09)
<b>Pillar 2</b> (Regional Development)			

Climate- Environmental			
GLAS/ACRES	219	300	'GLAS' in 2014-2020; 'ACRES' in 2023- 2027
Suckler Carbon Efficiency	7	52	In 2014-2020 this was called the 'Beef Environmental Efficiency Pilot'
Organic Farming	8	51	
Total Climate- Environmental' Pillar 2	234	403	
GRAND TOTAL Pillar 2	592	772	Caveat: The data for 2014-2020 is payments to farmers, while for 2023- 2027 is it 'allocations', which means that the latter is probably overstated relative to the former
TOTAL CIMATE-ENV ALLOCATION Pillars 1&2	234	700	

Source: The data in this table are derived from foregoing Tables 2 and 5.

Pillar Two on the other hand shows a large increase in total annual average expenditure rising from ~€592 million in the first period to €772 million in 2023-2027 but note the caveat in Table 5 around comparability. Climate-environment specific annual average expenditure increases also, rising from €234 million in 2014-2020 to €700 million in 2023-2027. This more than tripling is a product of: the new Eco-scheme in Pillar 1; and the increases in Pillar 2 in eco scheme from €219 million in GLAS to €300 million in ACRES; the increases in the beef carbon efficiency and organic farming schemes.

However, note that there is no necessary correlation between expenditure and climate and environmental outcomes: Payments via GLAS in 2014-2020 totalled €1.53 Billion. It delivered income to many low-income farmers, and some modest gains in biodiversity and water quality, but had negligible impacts on emissions reduction and carbon removal. Conversely, some of the European Innovation Projects funded at a tiny fraction of this cost over the same period delivered significant biodiversity and other public goods outcomes.[12] A key difference seems to have been grassroots community and group involvement in the shaping and delivery of the latter's agenda, and payment for performance.

#### **Distributional Issues**

As noted, the Common Agricultural Policy (CAP) initially provided product price support and then moved to area-based support; in both cases, this model favours those who produced the most and farmed the most land, which means that the larger and therefore generally richer farmers secure more support than do poorer ones. Within ruminant farming, the mean size of specialist dairy farms is about twice that specialist beef and sheep farms (Table 7) and they generate almost four times the family farm income per hectare (Table 8).

Table 7 Average and Median Farm Size, Ruminant Farming, 2020, Agricultural Area Utilised (AAU) Hectares

System	Average No. of Animals	Mean Size	Median Size	Number of Farms >100 Ha.
Specialist Dairy	96.8	65.1	55.1	5388
Specialist Beef	16.3	26.9	21.1	193
Specialist Sheep	172.8	28.9	16.6	9185
Mixed Grazing		44.8	34.8	

Source: Central Statistics Office, from Lisa Horan, Agricultural Surveys November 9, 2022

Table 8 Average Farm Income per hectare, by ruminant farming system, Ireland 2016–

System	Unit	2016	2017	2018	2019	2020	2021
	Family Farm Income, €/Ha						
Dairy		948	1537	1059	1122	1246	1548
Cattle		392	393	321	310	333	404
Sheep		385	466	275	321	401	445

Source: <u>BUCKLEY AND DONNELLAN 2022. 2021–Sustainability–Report Teagasc October.pdf</u> pp 78–82

EU Level

Efforts to partially correct for this asymmetry at EU level has been to change the system so that it ring-fences funding for lower income farmers; for CAP 2023-2027, 10% of direct payments will go to small and medium-sized farms, and at least 3% of the CAP budget will go to young farmers.[13]

#### Ireland

In Ireland the distributional challenge has been addressed by allocating over 70% of its Regional Development Fund to support mainly cattle and sheep farmers. In 2014-2020, the funding for farmers in Areas of Natural Constraint (€1491 million) and the Green Low Carbon Agri-environment Scheme (€1531 million) totalled €3022 million, an annual average of €431.7 million. In 2023-2027, the allocation proposed for farmers in Areas of Natural Constraint (€1250 million) and Agricultural Climate Rural Environment Scheme (€1500 million) will total €2750 million an annual average of €550 million, accounting for 71.21% of total expenditure on rural development. Although the environmental programmes – GLAS in 2014-2020 and ACRES in 2023-2027 – are open to all, the participation by dairy farmers was low and we can expect a similar pattern to apply in 2023-2027. Farming in areas of natural constraint is mainly sheep and cattle.

#### Multiple Public Goods (climate, environment, biodiversity) Objectives

This blog series focusses exclusively on climate policy, but I recognize that farmers are faced with multiple public goods objectives, which need to be addressed in parallel. A flavour of the challenge is provided in Table 9, which lists the already in place EU Directives and Regulations that address this portfolio.

Table 9 Fifteen Relevant Directives and Regulations Enacted to Deliver Selected Public Goods by the European Union

Category	ROW	Directives	Regulations	Comments
Habitats and Birds (2)	(1)	Habitats: Conservation of wild birds		Core responsibility is protection of Natura 2000 sites (Special Areas of Conservation and Special Protected Areas)
Air (2)		National Emissions Ceilings; Clean Air for Europe (CAFÉ)		Achieving compliance with Ireland's Ammonia ceiling is key obligation for agriculture
Water (4)	(3)	Drinking; Water Framework; Marine Strategy; Floods		Key challenges include ensuring drinking water quality from groundwater for farmers and other abstractors, and limiting nutrient enrichment of freshwater and estuaries
Waste (1)	(4)	Waste		Food waste is especially relevant

Climate (3)	(5)	Renewable Energy	Climate &	Core responsibility is to find ways that work to reduce greenhouse gas emissions at scale
Agriculture Specific (2)	(6)	Sustainable use of pesticides	Change	Core responsibility is to find ways that work to remove carbon at scale
Industry (1)	(7)	Industrial Emissions		Commission proposal to extend this directive to ruminant farms above certain size See Blog 3 (EU) for details

Source: DAFM, 2022. <u>Strategic Environmental Assessment (SEA) NON-TECHNICAL SUMMARY) of Draft CAP 2023–2027 Strategic Plan) by RSM, September pdf p. 5; See NPWS Designations Viewer (arcgis.com) for map of protected areas.</u>

Each row identifies the key legislative instruments that the EU is using to help ensure that the quantity and quality of the relevant public goods are delivered Union-wide. Rows (1), (2) and (3) are in place to advance the EU's ambitions as regards: nature conservation; air quality; water quantity and quality and adaptation to flooding, respectively. Row (5) embeds the legal requirement ('Effort Sharing') for emissions reduction in the non-trading sectors, which includes agriculture, and Row (6) addresses carbon removal.

For three of farming's public goods, we have data on annual average performance at farm level over the 2016–2021 period, by farm system: (Table 10). For the fourth (biodiversity) we do have not farm-based performance metrics

Table 10 Emissions Air (ammonia), Climate (CO2e), Water Quality (N Use Efficiency), Farm Level, by Ruminant Farm System, 2016–2021, Ireland

Public Good	Indicator	2016	2017	2018	2019	2020	2021
1. Air	Kg Ammonia Emissions (NH <sub>3</sub> /Ha)						
DAIRY		46.1	48.0	51.4	49.1	48.2	45.1
CATTLE		24.4	26.1	26.2	24.3	22.9	23.1
SHEEP		19.7	20.7	20.4	19.2	18.6	19.4
2. Climate Pressure	Tonnes CO2e Emissions (CO2e/Ha)						
DAIRY		9.0	9.2	9.5	9.3	9.3	9.5
CATTLE		4.6	4.2	4.6	4.4	4.7	4.4
SHEEP		4.1	4.3	4.1	3.9	3.8	4.1
3. Water Quality	Efficiency						
DAIRY		24.0	24.3	21.5	24.2	25.5	26.8
CATTLE		21.9	22.8	20.6	22.3	23.1	21.9
SHEEP		29.7	30.6	24.6	29.4	29.5	25.7
4. Biodiversity		NA	NA	NA	NA	NA	NA

# Source: <u>BUCKLEY AND DONNELLAN 2022, 2021–Sustainability–Report Teagasc October.pdf</u> pp79–83

We can begin to get a sense of this by looking at measures already being implemented, and how they impact different public goods:

Table 11 Application of Low Emissions Slurry Spreading (LESS) and Use of Protected Urea Fertiliser, by Ruminant Farm System, 2016–2021 Ireland

MEASURES	Unit	2016	2017	2018	2019	2020	2021
Emissions	slurry						
DAIRY		4	5	5	32	52	67
CATTLE		1	2	3	12	18	25
SHEEP		_	_	_	_	2	2
2. Apply protected Urea							
DAIRY		-	-	-	3	5	7
CATTLE		-	-	-	1	1	2
SHEEP		-	-	-	_	2	2

Source: BUCKLEY AND DONNELLAN 2022. 2021–Sustainability–Report Teagasc October.pdf pp79–83

We can see that both of these measures have gone from virtually zero to significant in the case of LESS applied by dairy farms (67% in 2021), and non-trivial also by cattle farmers (25% in 2021). It seems likely that the current regulations which provide for the compulsory usage of Low Emission Slurry Spreading (LESS) equipment for all farmers operating above 170kg N/ha and Derogation farmers has been the key to this change. The increase in the use of protected urea fertilizer is real but modest.

It is anticipated that there will be a small reduction in total greenhouse gas emissions from the agriculture sector in 2022, a consequence of external factors – mainly increase in fertilizer cost of 95% from 2021 to 2022, which has reduced usage from 399,160 tonnes in 2021 to 343,195 in 2022 (-14%) – and policy changes which have increased the use of low emissions slurry spreading (LESS), and reduced the use of higher emitting straight CAN by 21.8% and increased the use of lower emitting protected urea by 52.3%. This mildly positive climate impact is counterbalanced in part by the increase (+0.51%) in total cattle numbers [14].

#### **Analysing Choices and Trade-offs**

For each of the four public goods - biodiversity (nature conservation), air quality, water quality and quantity, and climate pressure - that are in the frame, it is useful to categorize actions that address these multiple public goods relative to each other as:

- Complementary: more progress on one will automatically achieve progress as regards the other(s)
- Neutral: more progress on one has no effect (positive or negative) on another
- Trade-offs: More of one can only be had by reducing amount or quality of another E.g., According to Teagasc's Sustainability 2021 reports:
  - (p.x) "On average, ammonia emissions showed some a decline in 2021 relative to preceding years... The driver of reduced ammonia emissions is the continuing increase in the adoption of low emissions slurry spreading". To what extent, if any, did this also reduce greenhouse gas emissions, increase N efficiency/reduce surplus, foster or inhibit biodiversity?
  - (p. 22) "Protected urea fertiliser use is associated with lower greenhouse gas emissions compared to Calcium Ammonium Nitrate (CAN). Protected urea is also associated with lower ammonia emissions compared to conventional straight urea fertiliser formulations and greater nitrogen recovery for agronomic purposes".

How to progress the assessment of choices and mixes will vary by location. For example: in areas with Natura 2000 sites (Special Areas of Conservation and Special Protected Areas). it would be logical to develop a scenario which gives priority to nature conservation, see how air quality, climate and water fare with that priority, and then adjust the mix to explore alternative outcomes; in areas where greenhouse gas emissions per hectare are very high, prioritize emissions reduction and removal, see how the other three fare and adjust the mix to explore alternative outcomes.

#### **Report of the Food Vision Dairy Group**

The group was established as part of the actions recommended by Food Vision 2030 as to how to meet the government's emissions reduction target. It described its role as follows (p. 82)

"The Government has determined that the agriculture sector must reduce its GHG emissions by 5.75Mt CO2 eq. by the end of 2030. This implies that the proportionate contribution from the dairy sector would be at least 2.3Mt CO2. This report sets out the milestones and measures for the dairy sector to move towards achievement of these demanding targets."

It identified 5 Direct Measures to achieve the 2.3 million tonnes of CO2e reduction.

Table 12. Direct Measures proposed in the Report of the Food Vision Dairy Group

Direct Measures	Impact (Mt CO2 eq)	Cost
1. Reduce chemical nitrogen use by 27-30% by end 2030	0.37	30% reduction in chemical nitrogen reduce profitability per hectare by 15%, in a scenario where cow numbers are held constant, and the reduced grass production was made up by purchased feed. <b>But:</b> increasing the adoption of Low-Emissions Slurry Spreading (LESS); improve Nitrogen Use Efficiency; encouraging Clover Adoption and Multi-Species swards (MSS) will reduce these costs
2. Target a 100% replacement rate of CAN with Protected Urea by the end of 2025	0.33	No additional cost. Protected Urea is cheaper than CAN on a cost per kg of Nitrogen basis
3. Development of methane mitigating feed technologies	0.43-1.00	Initial manufacturer reports suggest €75 – 100 per cow per year
4. Develop methane Mitigating Breeding Strategies	0.30- 0.4.00	Genotyping strategy initial costs is estimated by ICBF at €19m/ per annum for the dairy herd with cumulative cost estimates at €152m for dairy sector to 2030
Total 1-4	1.43-2.10	
5. Voluntary Exit/Reduction Scheme	0.45 per 100,000 dairy cows reduced	

Source: Report of the Food Vision Dairy Group, October 25, 2022 pdf, p. 3-4

The recommendations were welcomed by Dairy Industry Ireland, [15] saying 'it allows Irish dairy to further enhance its competitive advantage' but not embraced by some of the farm organizations. The recommendation (number 1) to cut chemical nitrogen use by 25-

30% was cited by some as being 'particularly problematic'. The voluntary reduction and exit scheme (number 5) was rejected outright by Macra na Feirme; the IFA reserved its position on the measure. The ICMSA reserved its position on the report as a whole; it was noted that sources of funds to finance the scheme were not addressed, or the payment rates. [16]

The focus on fertiliser is understandable: The CSO data shows that fertiliser prices fell from 2015, when the index was 100, to 90.3 in April 2021, but rose sharply to 147.7 in December 2021, and increased further to 250.8 by April 2022. It will make acting on Option 5 of the eight options provided in Pillar 1's Eco-Scheme (see above) – "Use of a GPS-controlled fertiliser spreader or GPS controlled sprayer – Application of at least 100% of chemical fertiliser (whether compound or liquid) or plant protection products to be applied with a GPS controlled fertiliser spreader and or GPS controlled sprayer" – a very attractive option; together with the price signal, this would presumably help many farmers. Direct Impact measures to mitigate Greenhouse Gas Emissions from the beef sector also comply with Option 3 – "Limiting Chemical Nitrogen Usage (kg organic nitrogen applied per hectare) depending on kg applied in 2022, with the maximum applied ranging from 73 to 214 kg."

#### **Report of the Food Vision Beef and Sheep Group**

It recommended 7 core measures, together with two voluntary measures (Table 13)

Table 13. Direct Impact measures to mitigate Greenhouse Gas Emissions from the Beef Sector, 2022

Measure	Emissions reduction	Cost
	Million Tonnes CO2e	€ Millions
1. Improve liveweight performance	0.57-0.82	0 (No regrets)
2. Reduce age of first calving of suckler beef cows	0.05-0.12	0 (No Regrets)
3. Develop methane-mitigating technologies		11.3-29 million
4. 90% replacement of CAN by protected urea	0.20	0 (No regrets)
5. Chemical U use ↓ by 27-30% by 2030	0.26	To be determined
6. > Organic beef prod to 180,000 hectares	0.20	€37 million provided in CAP 2023-2027. Net private costs to be determined
7. Breeding strategies (carbon sub-index) and building efficiency traits	0.10-0.30	€80.9 million by 2030
TOTAL	1.53-2.18	
8. Voluntary Diversification Scheme		€1,080/suckler cow for farms exiting
9. Voluntary Extensification Scheme (< no suckler cows)	cows	€1,380/ suckler cow for farms reducing

Source: <u>Government of Ireland</u>, <u>2022</u>: <u>Report of the Food Vision Beef and Sheep Group to mitigate Greenhouse Gas Emissions from the Beef Sector. Food Vision 2030. November 30. pdf</u> pp 29–30.

As regards the views of farmer stakeholders, the chair (Professor Thia Hennessy) noted (pp. 5-6) that:

"Significant reservations were expressed by both farm organisations and the meat industry in relation to the financial impact of many of the measures. Measures 8 and 9 were particularly contentious, with some stakeholders rejecting their inclusion in the final report due to the wider economic and social impact of reducing suckler cow numbers. Stakeholders have reserved their position on the final report until there is a

commitment for state funding to support the measures. These concerns and reservations are articulated throughout this report, and it is important to note that INHFA withdrew from the process of the start of the seventh meeting."

The specific reservations by each individual organization can be viewed on pp. 9-11. Twelve enabling factors are identified and assessed.

#### **Assessment**

There is good news and bad news.

A broad judgement is that CAP 2023-2027 and parallel developments will help improve the sector's climate performance, but that this will not be sufficient to deliver the emissions reductions and carbon removals at a scale that will guarantee that Ireland will be a world leader in sustainable food systems by 2030 or meet the net reductions required to ensure carbon footprint competitiveness. I will address the additional policies that will be needed to do so in Blogs 11 (Innovation) and 12 (Policy Integration). This conclusion is based on my assessment of the good and bad news.

#### **Good News**

This comes in two parts: the first are developments happening in parallel to COP 2023-27, and the second is CAP-specific.

#### **Developments in Parallel**

1. Government of Ireland, 2022: Report of the Food Vision Dairy Group October 25. pdf

Although dairy farmers comprise only ~17% of farmers in Ireland, they contribute >40% of total greenhouse gas emissions. The report's merits include the facts that it is: succinct –5 actions proposed; provides a range estimate as to the emissions reductions achieved by each action (as we shall see, this was not done in the CAP 2023-2027 proposals) that in sum come close to achieving a 25% aggregate reduction; address the costs of each, which is hugely important; we are entering an era when budgets of households, businesses and government will all be constrained and value for money will be an essential prerequisite. Effective and vigorous action on these measures will be a key litmus test of seriousness of purpose.

2. <u>Government of Ireland, 2022: Report of the Food Vision Beef and Sheep Group to mitigate Greenhouse Gas Emissions from the Beef Sector. Food Vision 2030.</u>

November 30. pdf

This also represents important progress and uses the same structure as the dairy group.

- 3. A third intimation of progress for dairy is in *Teagasc's Sustainability Report for 2021*, which shows a reduction in dairy's average carbon footprint from 0.91 Kg CO2e per Kg of product in 2016 to 0.85 in 2021; some of this progress in likely to be due to the increased use of Low Emissions Slurry Spreading by dairy farmers, rising from 4% in 2016 to 67% in 2021 (Table 10). Less impressive is that, over the same period, emissions from the average dairy farm rose from 359.0 tonnes of CO2e in 2016 to 454.3 in 2021 and there was no improvement in estimated average carbon footprint of beef or sheep (Details in Table 1, Blog 6)
- 4. A fourth is the incentivising by food processors of actions by farmers that improves their carbon footprint. The Carbery Group is notable: it was name checked enviously by Gillian O'Sullivan as a model for supporting training of their members in sustainability practises at University College Cork[17] and is a leader of the Farm Zero C project [see more on the latter in Blog 11 (Innovation)]. An interesting recent development is the decision by Dairygold to ringfence up to €10 million per annum for a new 'Grassroots Milk Supplier Sustainability Bonus' programme. To qualify for the bonus payments, Dairygold suppliers must commit to six separate requirements, including: a water quality farm visit; the purchase of qualifying protected urea products; a soil health programme; farmer training; milk recording; herd health.[18]

#### CAP 2023-2027

#### General

5. Over the 2023–2027 period, we can expect climate performance to improve, for a few reasons, including: the more than doubling of fertilizer and energy prices, which accelerates farmers' attention to finding ways to farm more efficiently with fewer inputs; the setting of the 25% emissions reduction/removal by 2030 target, which shifts efforts away from the 'we are a special case' to the more productive 'we need to take action'; current developments on the ground (e.g. rapid increase in the use of Low Emissions Slurry Spreading by dairy farmers); signs that some food industry

leaders are taking on the challenge of reducing the carbon footprint of their supply chain; evolution of policy in regard to the Nitrates Directive and to afforestation [both to be addressed in Blog 12 ('Integrating Policies)].

Developments proposed in CAP 2023-2027

#### 6. Increase in Funding

Total annual average expenditure on climate and environmental activity is expected to rise from €234 million in 2014-2020 to €700 million in 2023-2027. The increase is mainly a product of the new stream of funding in Pillar 1 ('Eco-schemes'), the increase in funding in ACRES (from €219 million to €300 million annually) and large rises in expenditure on both Organic Farming and Suckler Efficiency.

#### 7. More CO2e-effective use of the Funding:[19]

The Eco-Scheme slice of Pillar 1 will provide €297 million annually to support farmer action in two of eight options. Options 3 ('Limiting Chemical Nitrogen Usage') and 5 ('Use of GPS-controlled Fertilizer Spreader') will be attractive to dairy farmers on commercial grounds, because of the sharp rise in fertilizer costs; dairy is the main source of greenhouse gas emissions growth by the farming sector and Irish climate policy for agriculture will fail unless action to reduce emissions at scale is not fully embraced by its farmers (but see caveat below concerning additivity).

8. The ACRES strand in Pillar 2 is an improvement on GLAS: the European Innovation Projects (EIP) are integrated into this strand, and they showed how to (a) design and deliver 'pay for performance' and (b) engender grass roots farmer engagement in the design and delivery of outcomes. The ACRES programme allows for both individual and group action; there are large economies of scale and scope in proving a mix of public goods, and the latter provides a vehicle for groups to capture these. (But see a key weakness identified below, namely the capping of performance funding per farm).

Because much of the ACRES' funding will take place in areas where most of the Natura 2000 sites are located, there is a real opportunity to make a step change contribution to biodiversity conservation in Ireland where it is most threatened. [20]

The development of Farm Sustainability Plans (which will be required of farmers participating in ACRES) will allow the coherent assessment of options at scale, including the complementarities and trade-offs that are involved in the delivery of income and the four public goods (air quality, biodiversity, climate, water quality)

9. More binding Good Agricultural and Environmental Conditions (GAEC).

These include Numbers 3 Protection of wetland and peatland (from 2024), 4 Establishment of buffer strips, and 5 Minimum share (4%) devoted to nature.

#### **Bad News**

#### 1. The 'Free Rider' Problem

The emissions reduction opportunities provided by CAP 2023-2027 are all 'opt in'. Farmers can decide not to participate.

This 'opt in' feature could undermine progress because of what economists call the 'free rider' problem. If some farmers reduce their emissions at scale, all farmers will benefit, if the former's efforts deliver a carbon footprint for the sector that is competitive in key markets and reduces total emissions such that Ireland will meet its aggregate reduction commitments. But the incentives are very perverse.

However, free riders (who take minimal greenhouse gas reduction or carbon removal action) in this scenario share in the benefits but do not incur any of the costs. There is a likelihood that the 'tragedy of the commons' will be the outcome – some of those farmers who decide to take on reducing emissions and storing carbon at scale may hesitate to stay the course if they see that it could be pointless if many of their fellow-farmers fail to do so. This stands in contrast with what the government is proposing in New Zealand, where all farmers above a certain size threshold will be required to participate in its emissions levy programme (more on this in Blog 7)

I think of Jimmy Cotter a dairy farmer in Coachford, County Cork. He has reduced his emissions from baseline by 15% by: making his herd and therefore his milk output (Kg of milk solids) more CO2e efficient by cross breeding with Jersey cows; fertilizing with protected urea; reducing fertilizer application by introducing clover into his swards;

installing solar panels.[21] He probably has enough courage and strength of character to say the course, but will others follow his lead if they see many of their fellow farmers free riding?

#### **Specific**

2. For intensive farmers, there will be negligible additivity to their emissions reduction efforts triggered by the Pillar 1 Eco-Scheme. This scheme provides €297 million annually for two of eight options, which include 'Limiting Chemical Nitrogen Usage (Option 3), and 'Using a GPS Controlled Fertilizer Spreader' (Option 5). Given current and prospective fertilizer prices, it would be very surprising if most such farmers were not to act on these on purely commercial grounds – the financial returns will exceed the costs.

3. For the less intensive farmers – mainly beef and sheep –while there is the very welcome 'pay for performance' principle in ACRES, it is weakened in terms of delivering outcomes at scale by the fact that the payments per farm are capped. The problem this poses is expressed as follows by Brendan Dunford, who, with Sharon Parr is the co-founder of the Burren Programme, acknowledged locally and internationally as a very successful conservation model:

"The average farmer would be going from €8,500 back to €7,000 if you look at it as the Burren Programme plus GLAS compared to the results-based payments under ACRES. We feel that paying farmers to deliver these outcomes is a really good investment; we don't see it as compensation, so if you are delivering more let's pay more. At a time when we should be showing huge environmental ambition, we unfortunately seem to be showing a little bit less." [22] After 13 years at the helm, both Dunford and Parr have resigned. This epitomizes a key generic weakness: whenever the policy system is faced with the trade-off between delivering climate and other conservation outcomes at scale or spreading the funding more thinly to more farmers, it opts for the latter.

It looks like a partial repeat of the weakness of the preceding 2014–2020 Green Low Carbon Agri-Environment Scheme (GLAS). In its assessment thereof, the Irish Government's Economic Evaluation Service noted that "Survey data indicates that some of the actions incentivised under GLAS may already be in place on participating farms with additionality ranging from 20% to 67%", i.e., many farmers would have taken the actions anyway as part of their regular farming routine. [23]

- 4. There is vagueness about the mission(s) to be delivered in terms of climate and other public goods, which is reflected in the opaqueness of the outcomes climate and otherwise to be delivered, which stands in sharp contrast with the style of the Food Vision Dairy Group
- 5. It does not prioritize payoff to effort. Successful climate policy in other sectors focusses most attention on reducing emissions from those installations that emit the most, and design and deliver policies that do so. In CAP 2023–2027, most of the attention and funding is devoted to beef and cattle farming, which also requires the preparation of Farm Sustainability Plans and enables and fosters group action. None of these features are yet evident as regards climate policy for dairy. It may be that there was a decision to hold off on specifics pending the recommendations of the Food Vision Dairy Group report. The bad news is that the instruments to drive the latter's recommendations do not feature prominently in the CAP 2023–2027 roll out.
- 6. Relative to climate policies for other sectors, the policy instrument mix mobilised in CAP 2023-2027 is too narrow. More information on the practise in other sectors is elaborated in Blog 9; and in Blogs 11 and 12 I focus on how this damaging asymmetry could be addressed in the case of ruminant farming in Ireland.
- 7. The same policy-instrument gap applies to the Food Vision (dairy and beef) reports. It is clear from the reaction of most farm organizations that, in both cases, their policy focus is on one instrument, namely the lack of commitments around (public) funding for the implementation of the measures. It is interesting that in both cases, there is no overt advertence to the commercial interest in delivering a lifecycle carbon footprint per Kg of product in the future that is competitive with what their main suppliers in our key markets are likely to be delivering. This hiatus is especially notable in the case of beef and lamb, where there has been no improvement in the average footprint over the past 7 years:

#### Table 14 Trends in Carbon Footprint (Kgs CO2e/Kg Product) Dairy, Beef, Sheep) 2016-2021

Activity	Unit	2016	2017	2018	2019	2020	2021

•	CO2 INTENSITY							
	Cow milk	Kg Milk FPCM (LCA)	0.91	0.96	0.92	0.89	0.86	0.85
	Reet	Kg liveweight	11.9	12.0	12.6	11.7	11.7	12.0
	Sheep	Kg liveweight	10.5	10.5	11.3	10.2	11.8	11.4

Source: <u>BUCKLEY AND DONNELLAN 2022. 2021-Sustainability-Report Teagasc October.pdf</u> pp78-83 (Also <u>Table 1, Blog 6</u>).

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## **Biography**

**Frank Convery** has degrees [B. Ag and M.Ag (Forestry)] from UCD. Encouraged by the late Seamus Sheehy, he went to the US and took a PhD in Forestry Economics (State University of New York). After a distinguished academic career in the US (Duke University) he returned to Ireland as research professor at ESRI before being appointed as Heritage Trust Professor of Environmental Studies at UCD where he led the successful application for the funding of the UCD Earth Institute. He chaired the boards of the Sustainable Energy Authority of Ireland (SEAI) (2002–2007), Comhar Sustainable Development Council (2006–

2010) and served on the Climate Change Committee (2016–2020) chaired by John FitzGerald, and the AgriFood 2030 Committee chaired by Tom Arnold. The latter produced *Food Vision 2030*. From 2014 to 2018, he was chief economist with the Environmental Defense Fund, New York. His passion is finding ways to bring the weight of learning down to where things are done; his ambition for the sector is the same as Food Vision 2030's: "Ireland will become a **world leader** in Sustainable Food Systems (SFS) over the next decade. This will deliver significant benefits…and will also provide the basis for the future competitive advantage of the sector".

#### **Footnotes and references**

- [1] gov.ie Food Vision 2030 A World Leader in Sustainable Food Systems (www.gov.ie) p.9
- [2] CAP at a glance (europa.eu)
- [3] <u>Financing of the CAP | Fact Sheets on the European Union | European Parliament (europa.eu)</u>
- [4] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0815&from=EN, p. 6
- [5] Details at Summary of Ireland's CAP Strategic Plan 2023 2027 pdf, pp 6-8.
- [6] In the EU system, the final decisions are made jointly by the European Parliament and the member states. The former was the key driver for this change, animated in part by the failure of the previous CAP to either reduce greenhouse gas emissions or arrest the decline in biodiversity, and enabled by the European Commission (2019–2024) for whom addressing climate change at scale is a core ambition.
- [7] Details at Summary of Ireland's CAP Strategic Plan 2023 2027 pdf, pp. 10-11
- [8] Consisting of Statutory Management Requirements (SMRs) and standards for the maintenance of land in Good Agricultural and Environmental Condition (GAECs)
- [9] Comprising: Knowledge Transfer (71.1); Straw Incorporation (50.0); European Innov. Projects (36.1); Dairy Beef Welfare (25.0); ACRES training (21.5); Tech Assist (6.5); Collab Farming (2.0); CPD Advisors (1.9); Prod. Organizations (1.5)
- [10] More details at <u>Summary of Ireland's CAP Strategic Plan 2023 2027 pdf</u>, pp. 17-18
- [11] These include: Burren; Donegal; East-Southeast; Midwest-Southern Uplands; North Connacht-Ulster; Northwest Connacht; South Mayo-Connemara; and West Cork-Kerry
- [12] In 2023-2027, these are integrated into the ACRES programme
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- [15] Report of the Food Vision Dairy Group, October 25 (pdf)
- [16] See more in 'Farm groups slam dairy report's exit scheme and 30% nitrogen cut' by Noel Bardon, *Irish Farmers Journal*, October 25 2022. <u>Farm groups slam dairy report's exit scheme and 30% nitrogen cut 25 October 2022 Free (farmersjournal.ie)</u>
- [17] Interview with Damien O'Reilly, CountryWide April 24, 2021. CountryWide (rte.ie)
- [18] Frances McDonnell Agriland, January 20, 2023: <u>Dairygold launches €10m sustainability</u> bonus Agriland.ie
- [19] The signature climate/environment programme in 2014-2020 ('GLAS') had negligible impact on greenhouse gas emissions.
- [20] Over the five-year period, 70% (€2750 million) of Pillar 2 funding (comprising roughly equal amounts for ACRES and Areas of natural constraint) will be mostly transferred to relatively low-income beef and sheep farmers)
- [21] As reported in Ear to the Ground, RTE1 TV, Nov 25, 2021
- [22] Amy Forde, *Irish Farmers Journal*, November 23, 2023. <u>ACRES could 'lead to environmental decline' in the Burren 23 November 2022 Premium (farmersjournal.ie)</u>

[23] McDermott, Cathal, 2019. *The Green, Low-carbon Agri-environment Scheme*, Spending Review 2019 Irish Government Economic Evaluation Service (IGEES) Department of Public Expenditure, and Reform, August.