



# Irish Land-Agri Food Funding & Financing Landscape

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# 1. Introduction

The Irish Land-Agri Food sector is a complex system of heavily interdependent value chains. It is constantly being disrupted by innovation, but also is heavily determined by incumbent players with assets (e.g., land, processing facilities, transportation, and long-term relationships) enabling it to operate. Across this system also is a range of finance and funding actors who look to accelerate different organisations and their interventions within the sector. They play a significant role in determining the innovators that succeed as well as the incumbents that maintain the status quo and those that evolve.

To understand better what will be required within Ireland for the country to transition to net zero we must understand the funding and financing landscape. This report provides a view of the various funding and financing actors and current flows in the space. The report does not claim to be a complete mapping of funders and financiers in the space, but a best-efforts assessment of a range of key actors across public and private funding and financing.

This assessment will feed into a funding and financing strategy for the Irish Land Agri-Food Deep Demonstration. The Irish Agri-food Deep Demonstration which is working simultaneously will look to identify and activate a portfolio of interventions that can assist in moving the sector to a sustainable system. Deep Demonstrations are large-scale projects that EIT Climate-KIC assists challenge owners in facilitating using our 'systems innovation as a service model'.

The Deep Demonstration goes through the following phases: (a) defining an intent, (b) framing the field of innovation to utilise and building understanding around how innovation might achieve the vision for transformation, (c) composing and activating a portfolio of interventions and (d) driving actionable intelligence throughout.

## 2. Funding & Financing Recipients

Various actors within the value chain intervene within it in very different ways. Whilst their interventions differ dramatically, they can be broadly categorised to allow us to better understand their role within the changing system. This in turn allows us to more broadly understand the potential effect they can have individually or in combination within the system. It also gives us clues to the type of investors that could support them.

To create systems change we need an array of different organisations to drive the type of change we are looking to see. The various funding recipients within the system can be broadly categorised as:

- Incumbent / Entrant
- Stage of development
- Value chain actor

These three elements are important as they dictate the type of funding and financing each organisation typically attracts.

### Incumbents & Entrants

Categorising organisations into one of these two helps us better understand their type of activity and the funding they might receive:

- Incumbent businesses innovate and develop their products or services in order to appeal to their most demanding and/or profitable customers, ignoring the needs of those downmarket<sup>1</sup>.
- Entrants typically target ignored market segments and gain traction by meeting their needs at a reduced cost OR innovate new products/services that can outcompete incumbents.

### Stage of Development

The stage of development further develops the underlying innovation that might be utilised by an organisation and helps us understand the stage at which they are in their commercialisation journey and hopefully mass adoption. Here we utilise a commercial readiness index (CRI) which helps us further understand what type of finance the organisation might attract. Whilst it is more often used in the energy sector the principles can be useful also to the food & agriculture sector.

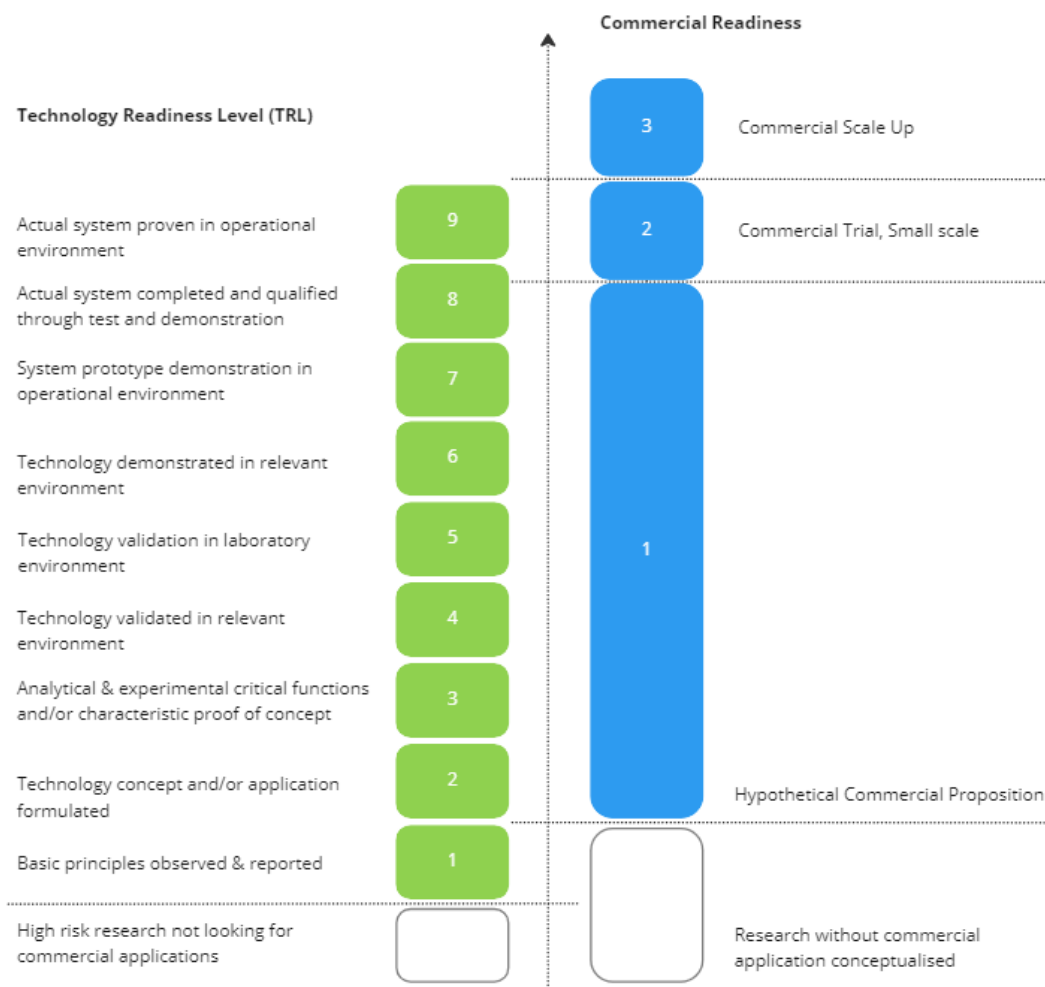


Figure 1: The Technology Readiness Level alongside commercial readiness

It should be noted that different organisations may not reach commercial scalability and may remain small scale due to commercial viability and various other factors.

## Value Chain Actor

Finally, we will look to separate out our funding and financing recipients by:

- Primary Producers
- Other value chain

Whilst there are undoubtedly multiple other areas across the value chain within the Land-Agri Food value chain, primary producers are particularly unique. This is due to the high capital costs of land and environmental complexity of providing guardianship over it, meaning we will approach them separately from a funding and financing perspective.

### 3. Funding & financing actors able to engage in the Irish Land-Agri Food system

Across the space there are a range of different funding & financing actors that look for organisations who can drive different types of outcomes. These are led by their investment mandates in the case of investors or missions and theories of change in the case of funders.

The following sections look to outline the key attributes each funder and financier looks for in a recipient organisation looking to intervene in a system. We start our focus on **other value chain actors** who are **new entrants** (at least potential ones) to the system.

#### 3.1 New Entrant – Other value chain actors

##### High Risk Research & Technology Readiness Levels 1-2

Hypothetical commercial propositions are those that remain unproven in commercial settings and have high risk within them as propositions. This means the type of funding they can attract is more limited. This is particularly evident in an academic setting.

In the early stages there is a requirement for grant funding for research, this is taking place across Ireland in incumbent organisations (Universities, industry & SMEs). In Ireland the identified grant distributors for the Food & Agricultural sector are:

**Science Foundation Ireland** focuses on TRL 1 and 2 with 80% of funding going to basic research projects<sup>ii</sup>. Approximately 50% of the Science Foundation Irelands budget goes towards SFI Research Centres.

The most relevant SFI research centres are:

- **VistaMilk** – focusing on increasing efficiency and effectiveness of the entire dairy production chain<sup>iii</sup>
- **BiOrbic** – focusing on bioeconomy with a focus on the Irish agri-food and marine sector to convert residues from these sectors into higher value products and new business opportunities.<sup>iv</sup>
- **Lero** – focuses on software with Agri-tech & food being one of their key application domains.<sup>v</sup>

- **ICRAG** – focuses on geoscience with a particularly relevant focus on groundwater – hydroecology/hydrology.
- **APC Microbiome** – focuses on the role microbes (microbiome) play in health and disease. This area is growing fast and will increasingly impact the food value chain.
- **MaREI** – focuses on defined global challenges such as the energy transition, climate action and the blue economy<sup>vi</sup>.
- **IPIC** – focuses on developing new light-enabled technologies, one of their key research areas is developing systems for food, beverage and environment monitoring<sup>vii</sup>

Outside of the core research centre funding is specific research project funding, of which around €4.9mn was spent by researchers working on research related directly to food & agriculture out of €47mn in 2022<sup>viii</sup>. An example of specific funded research projects includes the Super Irish Oat project to support the arable industry (€0.5mn). There was also funding into critical measurement of Peatland Hydrology (€0.4mn); the country's most significant carbon sync.

Alongside this DAFM provides targeted national funding for research, with €39.2mn of funding rewarded over 2021 and 2022. This was split between livestock (€12.8mn), crops (€5.6mn), forestry (€4.6mn), aquaculture (€2.7mn) and €10.8mn across a range of cross-cutting areas<sup>ix</sup>.

The **European Research Council** describes itself as doing High Risk Research, which typically does not have views on resulting commercial applicability. However, it can produce breakthroughs that help progress sectors. It has an overall budget of €16Bn between 2021 and 2027 and distributed over €300mn in grants to research projects across Europe in 2022. Of this around €38mn\* was distributed to research with potential links back to the Food & Agricultural sector in 2022. All of this funding was directed to research institutions outside of Ireland.

There are also opportunities that are available from the European Innovation Council on their Pathfinder programme for TRL 1–3<sup>xi</sup>. They run open calls and calls based around specific challenges. This year a 'Clean and Efficient Cooling' and 'Precision Nutrition' challenges are being called.

In addition to public funding, **Philanthropy** is starting to play an increasing role in basic research, particularly through U.S. Foundations. They contribute support for 4.4% of basic science research at universities and non-profit research facilities. This area is not yet well understood in Ireland and needs further research.

## Technology Readiness Level 1-5

In the case of business, **Enterprise Ireland** and **Udaras na Gaeltachta** distribute grant funding to businesses through specific R&D schemes.

The key programmes are:

| Programme                                     | Funding Issuance Organisation | Terms                                                                                        |
|-----------------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------|
| R&D Projects / Experimental Development       | Enterprise Ireland            | No set € limit (between 25-45% of costs)                                                     |
| Commercialisation Fund Programme <sup>1</sup> | Enterprise Ireland            | €15,000 to engage consultant to do commercialisation assessment of innovation <sup>xii</sup> |
| R&D Grant                                     | Udaras Na Gaeltachta          | Not stated                                                                                   |

Other notable programmes for early-stage companies developing technologies include Breakthrough Energy Fellows from **Breakthrough Energy**<sup>xiii</sup> which provides grants to high potential individuals developing early-stage technical solutions. One of the focus areas is agriculture with one of the recipients being TakaChar focusing on developing a portable device to convert post-harvest crop into bioproducts.

## Technology Readiness Level 5-9

As we move up the technology readiness levels there is more funding and financing available. The most significant of these is the EIC Accelerator. The **EIC Accelerator** has two components: the EIC Open Accelerator with a €613mn budget for 2023 and the EIC Accelerator Challenges with €527mn budget. The EIC Accelerator Challenges has a focus area of 'Novel technologies for resilient agriculture'<sup>xiv</sup>. They focus on innovation that is between TRL 5-8 and deploy grant funding of up to €2.5mn and direct investment of typically up to €15mn.

On top of this Ireland has its Disruptive Technologies Innovation Fund which looks to allocation funding to "experimental development" with TRL 3-9. Food is one of the key areas for the fund which has allocated €290mn to date over 4 rounds. Of the €290mn, however only around €8mn was allocated to the food sector<sup>xv</sup>.

At this stage of technology readiness level, we start to see a range of investors that are active in the food & agriculture space also in the form of **venture capital** and private investors. Being able

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<sup>1</sup> Last call closed Friday 10<sup>th</sup> February 2023

to identify investors that are willing to invest at such an early stage of technology readiness is problematic however due to lack of transparency around investment mandate. Venture Capital funds typically position their fund around a theme as agreed with their limited partner investors. There are a range of venture capital funds that are active in the food and agriculture value chain space. They invest across agriculture technology, food technology and alternative proteins:



Figure 2: Agri-food venture capital funds<sup>xvi</sup>

One of the critical areas to drive innovation for Ireland is the alternative protein space. A recently launched Smart Protein Fund from Milltrust Ventures and Earth First Food Ventures shows the opportunity the sector holds.

In addition to food & agriculture focused venture capital funds, there are a number of European focused climate tech and impact ventures funds which also invest within the sector:



Figure 3: Impact and Climate Venture Capital funds<sup>xvii</sup>.

All the above funds look to invest across Europe. To drive further investment into Irish companies the Irish Strategic Investment Fund (ISIF) also allocates capital to venture capital funds with requirements around the investees being Irish domiciled companies. Examples of this are Finistere Ventures investing in the agricultural technology space in Ireland. In addition, the Department of Enterprise, Trade & Employment also launched a €60mn fund with the EIF to invest in Irish innovative companies, with Food & Agri-tech one of the focus sectors. In addition, the ISIF will look to allocate an additional €30mn in co-investments<sup>xviii</sup>.

Some of the key trends to be aware of in this space is that the high expected return potential in the venture capital space is often not in line with companies that have higher uncertainties around their speed and capital requirements to move through technology readiness levels. This means that whilst it may look healthy in terms of investment into the space, some of the more valuable climate solutions struggle to get the capital they need without clear intellectual property advantages.

## Commercial Scale-up

As companies move past the various different hurdles of getting to technical maturity and start to generate multiple €mn revenues a new group of investors are deploying capital within the growth equity space. Some of the notable funds with a heavy emphasis on sustainability are:



Figure 4: Climate focused Growth Capital funds<sup>xix</sup>

Outside of these growth equity funds there are multiple other options for companies looking to scale, including bank loans and debt issuance. Ultimately attracting capital at these stages becomes easier in the traditional capital markets once revenue targets are hit and momentum has taken hold.

One area where it is unclear of financing opportunities is large processing facilities which have high up-front capital costs. These are typically not where venture capital and growth equity play due to their return profile. We see this in conversations around alternative protein scale-ups who are looking to deploy their technology in scaled up facilities. They need to secure in advance off-take agreements and can struggle to obtain financing given the new nature of the market. The EIB will likely play a financing role in such projects, however supplementary grant funding is less clear in terms of availability. More will be discovered as strategically important projects are identified through the deep demonstration portfolio.

## 3.2 Incumbent – Other value chain actors

For incumbents within the food value chain within Ireland the transition will be challenging due to the high previous capital expenditure around their business-as-usual practices. There is however a range of public funding and financing available.

**Enterprise Ireland** has a range of grant funding available for manufacturing and internationally traded services companies. Broadly the grant funding opportunities can be bucketed into:

- Climate planning grants – to help companies plan and put in place strategies to transition.
- Emission reduction grants
  - Energy monitoring
  - Carbon reducing technologies in manufacturing combustion processes
  - Innovation projects<sup>xx</sup>

On top of this there is grant funding, preferential tariffs and incentive schemes available through the **Sustainable Energy Authority of Ireland**. Particularly pertinent schemes are the 'Support Scheme for Renewable Heat – Installation Grant' which provides a grant for up to 30% of capital expenditure costs for heat pumps and an ongoing feed in tariff to support this transition to renewable heating<sup>xxi</sup>. There is also grant funding of up to €2,400 for solar installations as part of a Micro-generation Support Scheme<sup>xxii</sup>.

On top of this there are a number of energy efficiency loans schemes available from **AIB, Capital Flow and Bank of Ireland** of between €10,000 – €150,000 on a 1–10 year term. The loans preferential terms are made possible through European Investment Bank (EIB), Council of Europe Development Bank (CEB) and the Funding & Debt Management Unit of the National Treasury Management Agency (NTMA) and is important due to the long paybacks on some of the energy efficiency interventions required.

### 3.3 New Entrant – Primary Producers

In the case of farm and forestry owners there are a couple key attributes of the space particularly relevant when considering funding and financing:

- High upfront capital costs
- Illiquid market for land
- Long-time horizons on breakeven

This makes disruption of the space at scale difficult through direct investment into agricultural land and forestry from investors as well as individual farmers looking to enter the market.

There are only two notable **real asset investors** in the forestry space in Ireland:



*Figure 5: Real Asset Forestry investors in the Irish market<sup>xxiii</sup>*

SLM Partners has a €30mn dedicated Irish Forestry Fund which purchases largely existing forestry and some grazing land. The fund also importantly received grant funding from the EIB (€750k) for technical assistance. This allowed the fund to dedicate funding to training Irish foresters around continuous cover forestry using selective harvesting, carbon modelling and

evaluation work around the impact on deer. This is a strong example of a blended finance approach to try and ensure an economically viable investment combined with high levels of ongoing sustainability.

Gresham House has recently announced the launch of new forestry fund with an initial €60mn of investment capital<sup>xxiv</sup>. The goal is to purchase and convert land into forestry. It should be noted that this investment fund has been hugely controversial within Ireland<sup>xxv</sup>. This is not a trend that is limited to Ireland with the British Public Pension Scheme, Nest, also looking to allocate £1.2Bn into natural capital. The scheme is already engaged in market warming activities with numerous fund managers<sup>xxvi</sup>. It was also announced that Real Asset Investor, Stafford recently achieved a first close of \$242mn from British Local Government Pension funds into their Carbon Offset Opportunity fund investing into new and existing forestry globally.

Investment from institutional real asset managers into Agriculture land is nascent within Ireland.

For **new farm enterprises** entry into the market is even more difficult with elevated farm building and land prices preventing new entrants into the space. Registered Farm Partnerships<sup>xxvii</sup> are providing an indirect way in, however the young farmers that work the land do not own it and the returns from the farm are mostly not enough to support the landowner (often previously an active farmer) and the young farmer looking to enter the profession.

There is additional income support for farmers under the age of 40 years old if they are able to take on a farm through the **Complementary Income Support for Young Farmers (CIS-YF) scheme** under the European Agriculture Guarantee Fund and the Irish Government (CAP Pillar I). This provides an additional €178 per hectare (up to 50 hectares). Whilst such support is vital for new entrants into the profession, the real barrier comes in the upfront capital cost of the farm.

With the high up-front costs, the land management of Ireland and the funding and financing will largely come through investment into new practices and diversification of activities of existing landowners (Incumbents) to enable a transition to net zero and ecologically sensitive practices.

### 3.4 Incumbent – Primary Producers

Incumbent Primary Producers across the country do not receive any form of equity investment from investors typically. However, they do receive a range of different grant funding from different government programmes.

These can be broadly broken down into:

- Government – General Farm Subsidies
- Government – Action Payments
- Government – Capital expenditure support
- Private Capital
- Value chain incentives

## Government - General Farm Subsidies

The following payments are designed to subsidise income for farmers across various activities based on land coverage:

| Scheme                           | Sub-Scheme                                                             | Payment                                                 | Basic Requirements                                             |
|----------------------------------|------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------|
| CAP – Pillar 1 <sup>xxviii</sup> | Basic Income Support for Sustainability (BISS)                         | Approximate average €158.66 per hectare                 | Set of conditionality requirements & standards <sup>xxix</sup> |
| CAP – Pillar 1                   | Complementary Redistributive Income Support for Sustainability (CRISS) | Approximate average €43 per hectare (up to 30 hectares) | Set of conditionality requirements & standards                 |
| CAP – Pillar 2                   | Areas Facing Natural Constraints (ANC)                                 | €93 to €250 per hectare                                 | Active farmers on areas facing natural constraints             |

## Government - Action Payments

Action payments are targeted around specific activities to try and promote more sustainable ways of farming the land. A range of these action payments are vital in moving towards a more sustainable way of farming.

| Scheme         | Sub-Scheme                                                    | Payment                                                       | Basic Requirements                                                  |
|----------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------|
| CAP – Pillar 1 | Pillar 1 – Eco-Scheme                                         | €77 per hectare                                               | Participate in 2 agricultural practices a year (of a potential 8)   |
| CAP – Pillar 1 | Pillar 1 – Coupled Income Support for Protein Aid             | €583 to €350 per hectare (50% for protein/cereal mixed crops) | Plant peas, beans and lupins (proposed soya and protein/cereal mix) |
| CAP – Pillar 2 | Agri-climate rural environment scheme (ACRES) – ACRES General | Up to €7,311 p/a                                              | Environmental enhancements through land management                  |
| CAP – Pillar 2 | Agri-climate rural environment scheme                         | Up to €10,500 p/a                                             | Environmental enhancements through                                  |

|                                                  |                                                            |                                                                                                         |                                                                                                                               |
|--------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
|                                                  | (ACRES) – ACRES Cooperation                                |                                                                                                         | land management across farms                                                                                                  |
| CAP – Pillar 2                                   | Straw Incorporation Measure (SIM)                          | €250 per hectare (cereal crops), €150 per hectare (oilseed rape)                                        | Tillage farmers to plough straw into soil after harvest to increase soil carbon content                                       |
| CAP – Pillar 2                                   | Organic Farming Scheme                                     | Variable                                                                                                | Convert or continue to produce organic                                                                                        |
| CAP – Pillar 2                                   | Suckler carbon efficiency programme                        | €225 per hectare (first 15 hectares) and €180 per hectare there after                                   | Breed bulls with high quality beef heritage                                                                                   |
| Cap – Pillar 2                                   | Dairy beef welfare scheme                                  | TBC                                                                                                     | Breeding calves with a high DBI Index                                                                                         |
| Cap Pillar 2                                     | Sheep Improvement Scheme                                   | €12 per eligible breeding Ewe                                                                           | Targeted interventions in lameness control, parasite control, genetic improvement, flystrike and appropriate supplementation. |
| Irish Forestry Scheme                            | Irish Forestry Scheme                                      | Cost coverage to plant forest + over €1,100 per hectare p/a over 20 years (dependent on type of forest) | Plant certain trees over farmland <sup>xxx</sup>                                                                              |
| LIFE – Wild Atlantic Nature Life <sup>xxxi</sup> | Results Based Agri-environment payment scheme <sup>2</sup> | Up to €225 per hectare p/a                                                                              | Habitats are scored on an annual basis + overall farm score                                                                   |
| LIFE – Wild Atlantic Nature Life                 | Results Based Agri-environment payment scheme              | Up to €700 for over 1,000m length of river channel p/a                                                  | Floodplain management is evaluated each year + overall farm score                                                             |

<sup>2</sup> This is one of the more significant outcome-based payments schemes underway amongst others across smaller geographical boundaries

|                                  |                            |          |                                                                                                                                     |
|----------------------------------|----------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------|
| LIFE – Wild Atlantic Nature Life | Supporting Action payments | Variable | Specific actions such as fencing, invasive species control, livestock drinking facilities, peatland reactivation and drain-blocking |
|----------------------------------|----------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------|

## Government – Capital Expenditure Support

There are multiple grant support schemes for capital investment for primary producers. The following schemes have been identified:

| Scheme | Sub-Scheme                                       | Payment                                                                              | Basic Requirements                                                            |
|--------|--------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| TAMS 3 | Solar Capital Investment Scheme                  | 60% grant rate with a €90,000 investment ceiling that is separate from other schemes | Must be for investment into solar PV arrays on farm – with selection criteria |
| TAMS 3 | Animal Welfare, Nutrient Storage Scheme (AWNSS)  | 40% grant rate with a €90,000 investment ceiling                                     | Must fall under set of specified investments                                  |
| TAMS 3 | Tillage Capital Investment Scheme (TCIS)         | 40% grant rate, with a €90,000 investment ceiling                                    | Must fall under set of specified investments                                  |
| TAMS 3 | Pig and Poultry Capital Investment Scheme (PPIS) | 40% grant rate, with a €500,000 investment ceiling                                   | Must fall under set of specified investments                                  |
| TAMS 3 | Dairy Equipment Scheme (DES)                     | 40% grant rate, with a €90,000 investment ceiling                                    | Must fall under set of specified investments                                  |
| TAMS 3 | Young Farmer Capital Investment Scheme (YFCIS)   | 60% grant rate, with a €90,000 investment ceiling                                    | Must fall under set of specified investments                                  |

|        |                                                       |                                                                                       |                                              |
|--------|-------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------|
| TAMS 3 | Women Farmer Capital Investment Scheme (WFCIS)        | 60% grant rate, with a €90,000 investment ceiling                                     | Must fall under set of specified investments |
| TAMS 3 | Organic Farming Capital Investment Scheme (OCIS)      | 60% grant rate, with a €90,000 investment ceiling                                     | Must fall under set of specified investments |
| TAMS 3 | Farm Safety Capital Investment Scheme (FCIS)          | 60% grant rate, with a €90,000 investment ceiling                                     | Must fall under set of specified investments |
| TAMS 3 | Low Emission Slurry Spreading Equipment Scheme (LESS) | 60% grant rate, with a €90,000 investment ceiling that is separate from other schemes | Must fall under set of specified investments |

The specified investments for each scheme sit across all of the agricultural producers within Ireland. The increased % grant rate for young farmers and women farmers will improve the dynamism within the industry also. However, the number of investment structures for ruminants sits at 65 out of the 115 potential investment categories. When combined with the general subsidy payments this creates strong incentives for new entrants to move into the already most lucrative dairy industry. This may create stranded assets if the ruminant industry does not find a way to fully decarbonise.

In addition, an innovative loan scheme launched with the Irish Strategic Investment Fund, Rabobank and Finance Ireland that aims to protect farms from price volatility was the 'Glanbia MilkFlex Fund'<sup>xxxii</sup>. Launched in 2016 for dairy farmers; the loan repayments can vary according to movements in milk price. This provides an additional layer of protection to dairy farmers around price volatility; however, it should be noted that the dairy sector is the most economically viable of the sectors today making such lending arrangements possible.

## Private Capital

On top of the government support there is also support from banks in the form of long-term loans through the recently launched **Growth and Sustainability Loan Scheme**<sup>xxxiii</sup>. The fact that the loans, which are between €25k and €3mn and importantly up to €500k is unsecured is vital to Farm and Forestry Operators and Owners. It will allow significant investments to be made in diversification of farming activities away from high emission areas. It should be noted however that Irish farms applying for medium and long-term loans was at on 5% in 2017.

We are also starting to see money come from the private sector in the form of **carbon credits** and **nature credits** (currently largely nascent).

The carbon credit market globally currently sits at around \$1.33Bn as of the end of 2022<sup>xxxiv</sup>. Whilst very little of the issuance is coming from European reforestation and restoration projects, we are starting to see investors who are running forestry funds in Europe issuing out carbon credits as part of their operations.

Nature credits are less developed but there are interesting developments taking place across in Europe with platforms like Credit Nature who have launched a Nature Impact Token, which has been selected by NatureScot (Scotland's Nature Agency) to make nature recovery investable. The token gives an investor the rights to a set of land management commitments and an ex-ante forecasted uplift in ecosystem integrity. This means upfront payments for ecosystem restoration with the investor having the rights to sell on any carbon or nature credits from the land in the future once realised.

## Value Chain Incentives

One of the most powerful ways in which producers can be encouraged to adopt sustainable practices is when those practices are recognised by downstream value chain processors and ultimately the consumer.

This is where **standards** can create clear rules of the road and can help drive price premiums for producers if managed correctly. In Ireland the overarching Good Agriculture and Environmental Condition (GAEC) EU legislation provides a foundation to standards for producers. This has been further developed in certain sectors through the Sustainable Quality Assurance Schemes from Bord Bia and Origin Green for beef, lamb and dairy with tillage working on a standard also. The evolution of this process will be key to Ireland leading on sustainability standards across different foodstuffs.

There seems to also be some evidence of processors providing small **sustainability incentives** with Milk cooperatives like Tir Lan and their Living Proof initiative starting to incorporate sustainability measures into milk prices with a 0.5 cent per litre Sustainability Action Payment. Farms qualify for the payment if they declare at least 7 sustainability actions from a list of 18<sup>xxxv</sup>. However, for context the January price for milk in January 2023 was 60.08 cents per litre<sup>xxxvi</sup>, meaning the payment represents 0.83% of the total potential price per litre a farmer may receive.

One of the other key initiatives which will drive greater engagement across the value chain is the **Corporate Sustainability Reporting Directive (CSRD)** which will drive far greater transparency across value chain operators. With this directive moving into law in 2024 this will increase focus from corporates within the value chain<sup>xxxvii</sup>. Alongside this directive the **Science Based Targets Initiative** led by a group of environmental non-profits allows companies across the food and agriculture value chains to set emission targets in line with a 1.5-degree future. Across Ireland's significant corporates within the sector Kerry Group, Tir Lan, ABP Food Group and Dawn Meats

have set targets of between 1.5C – 2C. This is part of their commitment as members of Origin Green, which has over 300 accredited food and drink companies, 50 of which have attained 'Gold' standard certification. This means they have achieved exceptional standards in tackling their scope 1, 2 and 3 emissions. The development in Ireland and internationally of target setting by large companies will help catalyse change across value chains. The space is moving quickly also with Danone claiming they will "source 100% of ingredients produced in France from regenerative agriculture by 2025".

## 4. Conclusions

Ireland has a highly developed funding and financing ecosystem from public and private actors across the non-producer value chain.

From significant research spending across a range of research areas by DAFM and Science Foundation Ireland. In addition, there is grant support for R&D research from Enterprise Ireland as well as blended financing from the EIC Accelerator. What's more the venture capital market is expanding fast around new topics such as alternative proteins providing a good opportunity for Ireland. On top of this the Irish Strategic Investment Fund is deploying capital into venture funds to deploy specifically in Ireland, providing further advantages for local businesses downstream of producers.

As the deep demonstration portfolio of interventions are built out this financial architecture will be tested to see if it is fit for purpose for the Land-Agri Food transition.

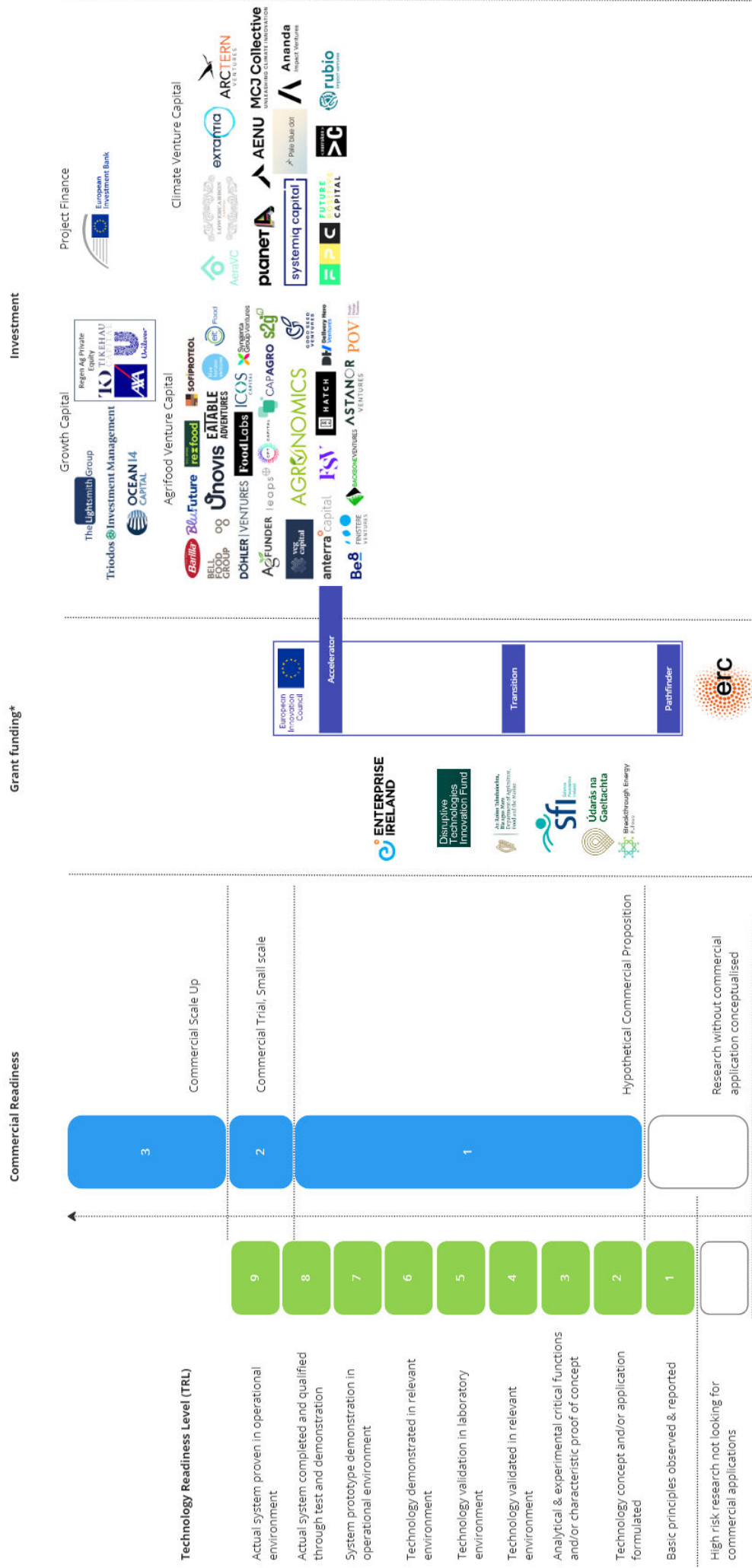


Figure 6: Overview of funding and financing mechanisms across the value chain excluding primary producers for new entrants

Primary Producers however face a very different environment due to their price taker status in the market for their produce and significant barriers to entry for newcomers. This means real asset investors in the market are few and far between for agricultural land, however forestry investors are entering the country as part of a wider institutional investment trend. The sector as a whole is reliant on significant funding programmes from the EU and Irish government in the form of the Common Agricultural Policy (CAP) and the Targeted Agricultural Modernisation Scheme 3 (TAMS 3). The key risk lies in the ability for the ruminant industry to find a solution to its methane problem, the investment capital deployed into this industry may create liabilities and stranded assets on farms otherwise.

The transition will rely also on increased transparency of sustainable produce and practices across value chains and the formation of price premiums to reflect these efforts. Programmes like Origin Green already collects significant amounts of data across its producers and has the ability to develop this further. However, this will need to move towards the creations of real price premiums through greater transparency, value chain coordination and policy support. Below is a selection of additional steps to consider moving forward:

| Area                              | Potential Intervention                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alternative Protein Strategy      | Alternative protein is a significant opportunity for Ireland to diversify away from dairy and meat production and to substitute imported feed products for the remaining dairy and meat producers. Bringing together key stakeholders from the protein demand side to understand key characteristics and alternatives being explored, to generate a strategy around investment deployment and producer alignment will be key. |
| Value chain alignment             | Bringing together retailers and public procurement, processors and producers to map out key value chains, the circularity potential within them and pricing dynamics with a view to bringing commitment from downstream players to pricing in deep decarbonisation of producers.                                                                                                                                              |
| Land Agri-food catalyst projects  | Low carbon food production and processing facilities may require grant funding based on value chain actor discussions to ensure projects are realised. This is of particular relevance where price reductions can be realised over time through learning by doing and scaling.                                                                                                                                                |
| TAMS Scheme – Stranded Asset Risk | Given the heavy reliance on eliminating methane emissions from ruminants which has not been solved to date, it would seem pertinent to monitor the TAMS Scheme to evaluate if it is creating potentially a large number of farms with stranded assets into the 2040s.                                                                                                                                                         |

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