

Ireland's Land, Agri-Food System Map

In 2020, Irish Agri-Food System stakeholders came together to develop a ten year vision for the sector called Food Vision 2030. The agreed vision is that:

"Ireland wants to become a world leader in sustainable food systems, leveraging its innovative agri-food sector to meet the highest standards of sustainability – economic, environmental and social – and produce the following effects: a sustainable and competitive sector driven by technology and talent, safe and nutritious food valued at home and abroad and viable and resilient primary producers with enhanced wellbeing."

An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine

eit Climate-KIC
Co-funded by the European Union

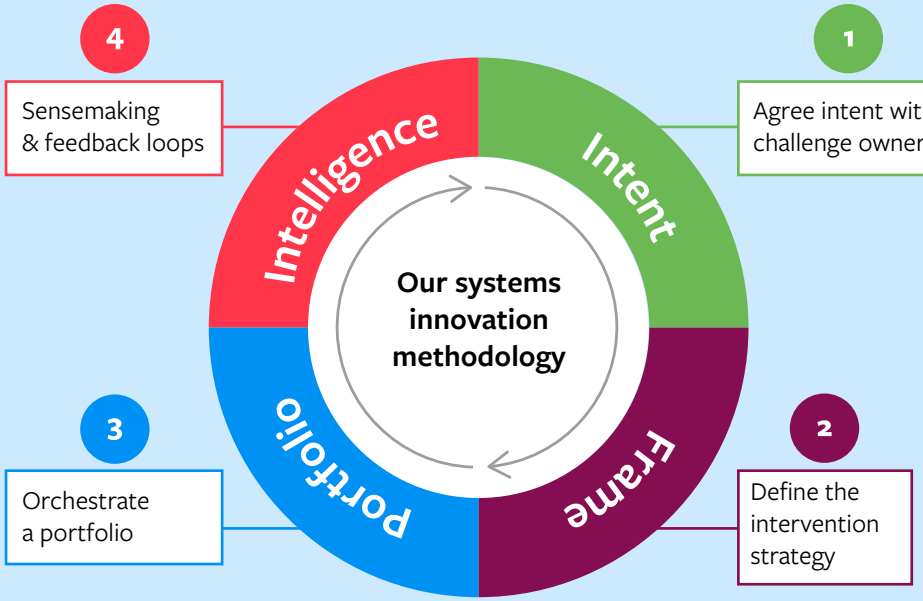
The Department of Agriculture, Food, and the Marine has partnered with EIT Climate-KIC to work with public and private stakeholders in the Irish Land Agri-Food sector to **help the sector deliver on the above vision.**

EIT Climate KIC - Europe's largest climate innovation partnership are applying their **'Deep Demonstration' model of innovation to the entire agri-food and biobased value chain**, from soil to farm to fork to society.

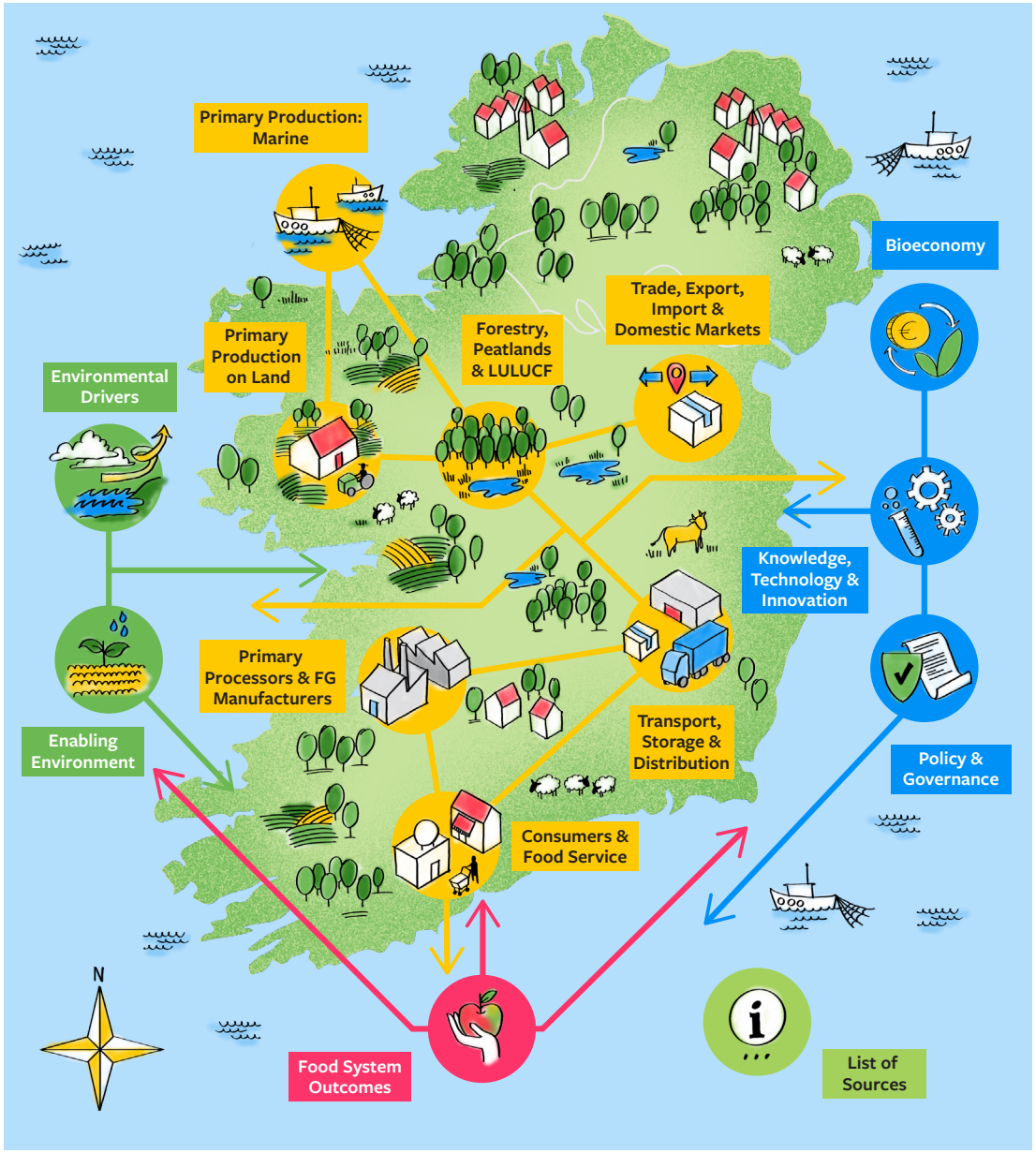
Deep Demonstrations **accelerate learning about how to change a system in the context of urgency, complexity, uncertainty, inequality and diversity**. The Deep Demonstration process starts with **gaining a detailed understanding of the system**, which is documented in the form of a systems map. The system map used in this project is based on a food systems framework that includes the following four key components: **Socio-Economic Drivers, Environmental Drivers, Food System Activities, Food System Outcomes**.

The mapping of the system **provides the context to identify the multiple levers of change** and potential **points of intervention** needed to move from the current state to the desired end state. This system map documents the Irish Land, Agri-Food system as of January 2023 and while the system itself will continue to evolve and adapt, **this map represents a baseline at a moment in time**!

Deep Demonstration Approach:



1. Ireland Land-Agri-Food System



Food Vision 2030 sets out a vision for Ireland to become a world leader in **Sustainable Food Systems** (SFS) by 2030.

The sector is Ireland's oldest and largest indigenous sector. It produces food and ingredients with a global reputation for quality and safety.

Ireland's agri-food exports were a record **€15.4 billion** in 2021, a 50% increase in 10 years. **Agri-Food exports** represented **9.4%** of Irish merchandising exports and the sector had a trade surplus of **€5.6 billion.**



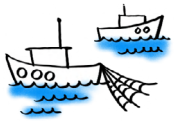
Employed **170,400** people, representing **7.1%** of the total workforce.



Responsible for **4.5 million hectares** of agricultural land.



Investment on Irish farms increased by **36%** in 2021 to over **€1.39** billion.



2,000 fishing vessels & aquaculture sites.



2,000 food production and beverage enterprises.



135,000 farms.



770,000 hectares of forestry.

2. Primary Production on Land

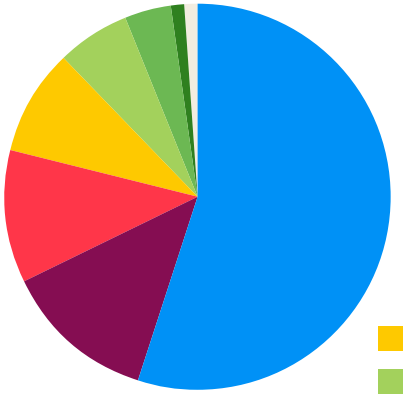
Investment on Irish Farms

- The investment on Irish farms **increased by 36%** in 2021 to **over €1.39 billion**.
- There are **34,800 viable farms** nationwide in 2021.
- **Average family farm income** for 2021 was **€34,367**, a record year, and **up by 26%** on 2020.

Overall Number of Farms and where located

Land Area & Use

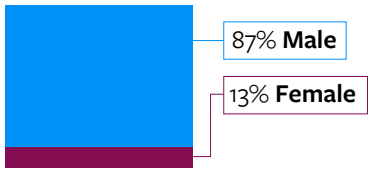
Split by Farm Type



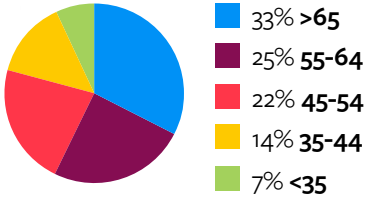
- 55% **Beef Farms**
- 13% **Sheep Farms**
- 11% **Dairy Farms**
- 4% **Tillage Farms**

9% **mixed field crops** | 1% **mixed crops and livestock** | 6% **mixed grazing** | 1% **Other**

Farmer Gender Split



Farmer Age Profile



Livestock Numbers across all of Ireland

Input Prices Change



- 25.1% **Fertilisers**
- 15.2% **Energy**
- 10.3% **Feeding Stuffs**
- 9.2% **Agriculture input price index**
- 4% **Lubricants**

- Over **50,000 tonnes of protected urea** were sold in 2020/2021 compared to just 7,100 tonnes in 2017/2018.
- **Ground limestone usage was up 50% in 2021** compared to 2020 at 1,333,100 tonnes.
- Compound feed production in Ireland for 2021 was **5.5 million tonnes**.

Horticulture and Potatoes



Investments in climate action measures were significant again this year, especially **due to the rising input costs associated with energy**. **Conversion to more efficient lighting systems; increasing insulation on mushroom tunnels; commissioning of photovoltaic systems; and the purchase of equipment to facilitate precision agriculture**, were just some of the projects undertaken at farm level.

CHALLENGES

1. Diversification of income streams for farmers.
2. Reducing methane emissions.
3. Increasing carbon sequestration.
4. Ensuring a just transition for all impacted farmers.
5. Managing the challenges and opportunities from LULUCF.

2. Primary Production on Land

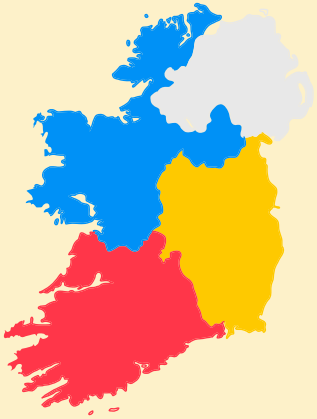
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Overall Number of Farms and where located



All of Ireland (Republic)
Average size of Farms: **33.4 ha**
Total # of farms **135,037**

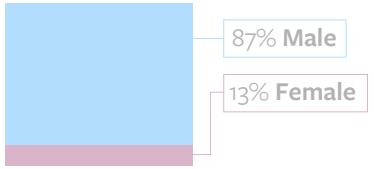


Eastern & Midlands
Average size of Farms: **39.4 ha**
Total # of farms **24,000**

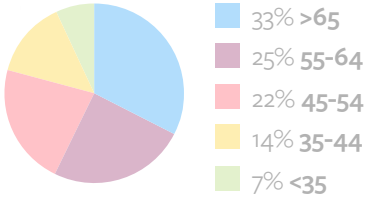
Southern
Average size of Farms: **38.8 ha**
Total # of farms **53,000**

Northern & Western
Average size of Farms: **25.8 ha**
Total # of farms **57,000**

Farmer Gender Split

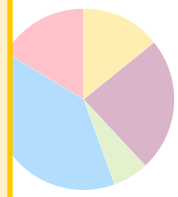


Farmer Age Profile



Livestock Numbers across all of Ireland

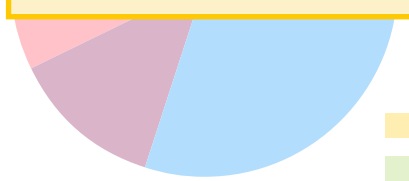
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Horticulture and Potatoes



4% **Tillage Farms**

- 9% **mixed field crops**
- 1% **mixed crops and livestock**
- 6% **mixed grazing**
- 1% **Other**



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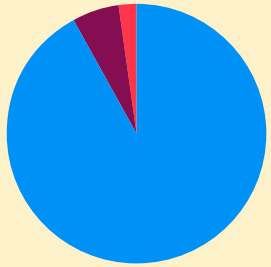
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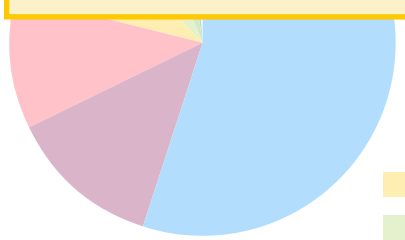
Land Area and Use



4,500,000 ha **All of Ireland (Republic)**



- 4,150,000 ha **Grassland**
- 265,592 ha **Cereal**
- 92,298 ha **Other crops, fruit & horticulture**



11% Dairy Farms

4% Tillage Farms

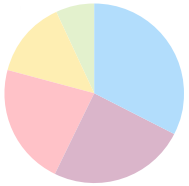
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Farmer Gender Split



- 87% **Male**
- 13% **Female**

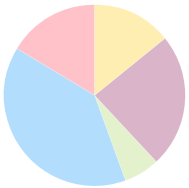
Farmer Age Profile



- 33% **>65**
- 25% **55-64**
- 22% **45-54**
- 14% **35-44**
- 7% **<35**

Livestock Numbers across all of Ireland

Input Prices Change



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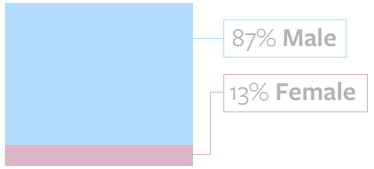
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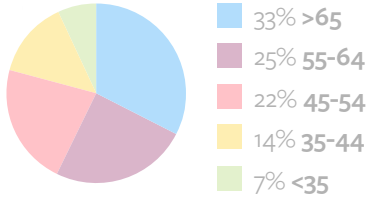
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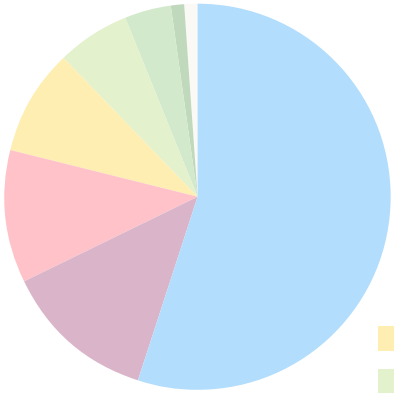
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Land Area & Use

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Input Prices Change

Split by Farm Type



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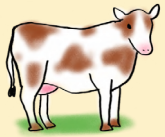
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Split by Farm Type

X

Beef Farms

Number of farms: **74,200**
Average investment on farms: **€8,419**
Average farm size - hectares: **21**
Average age of farmers: **58**
# of viable farms: **32%**



Sheep Farms

Number of farms: **17,400**
Average investment on farms: **€8,156**
Average farm size - hectares: **17**
Average age of farmers: **56**
# of viable farms: **33%**



Dairy Farms

Number of farms: **15,300**
Average investment on farms: **€45,000**
Average farm size - hectares: **55**
Average age of farmers: **52**
# of viable farms: **85%**

Tillage Farms

Number of farms: **4600**
Average investment on farms: **€25,714**
Average farm size - hectares: **42**
Average age of farmers: **57**
# of viable farms: **72%**



2. Primary Production on Land

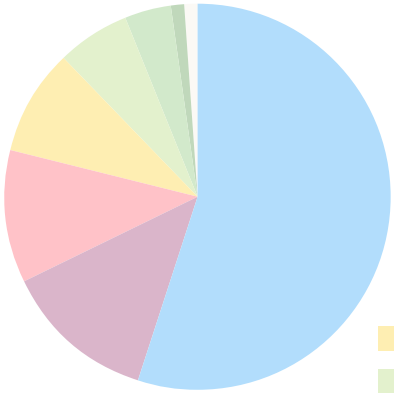
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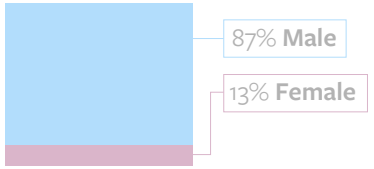
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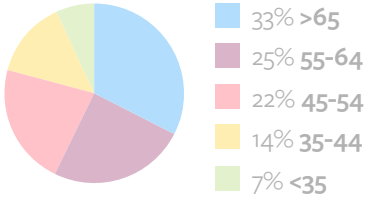
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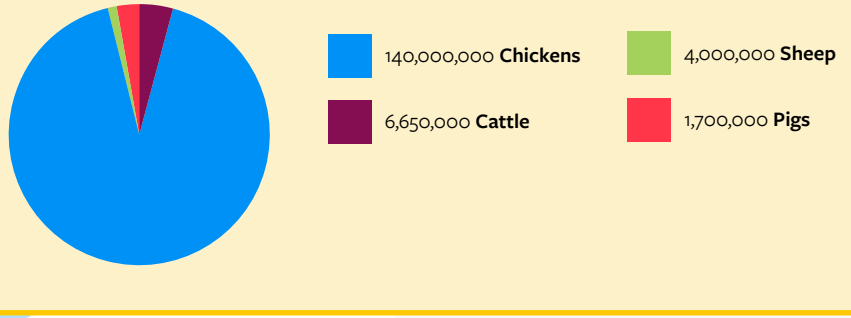
Farmer Gender Split



Farmer Age Profile



Livestock Numbers across all of Ireland



4% **Lubricants**

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Horticulture and Potatoes



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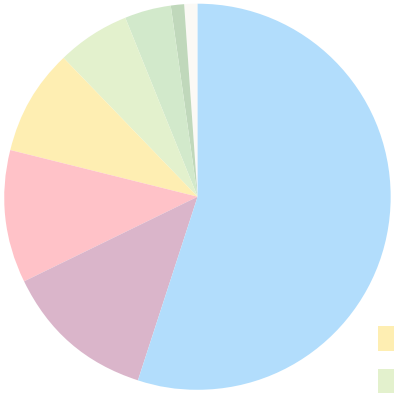
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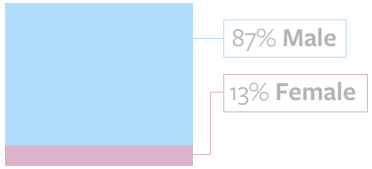
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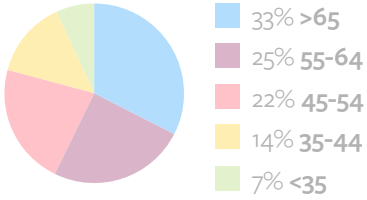
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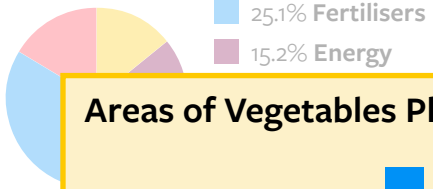


Farmer Age Profile



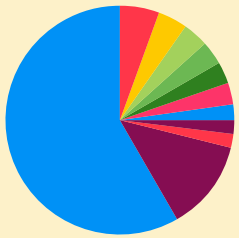
Livestock Numbers across all of Ireland

Input Prices Change



- Over **50,000 tonnes of protected urea** were sold in 2020/2021 compared to just 7,100 tonnes

Areas of Vegetables Planted in Hectars 2021



- 8,838ha **Potatoes**
- 1,949ha **Other Vegetables**
- 866ha **Carrots**
- 623ha **Kale**
- 548ha **Cabbage**
- 510ha **Broccoli**
- 485ha **Peas**
- 441ha **Turnips**
- 359ha **Parsnips**
- 295ha **Swedes**
- 287ha **Caulifowers**

CHALLENGES

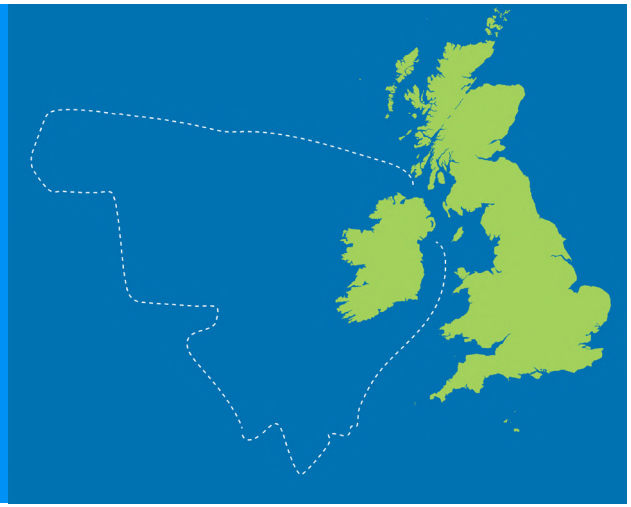
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3. Primary Production: Marine

Resources

Marine territory is 880,000km² (land mass is c.84,000km²).

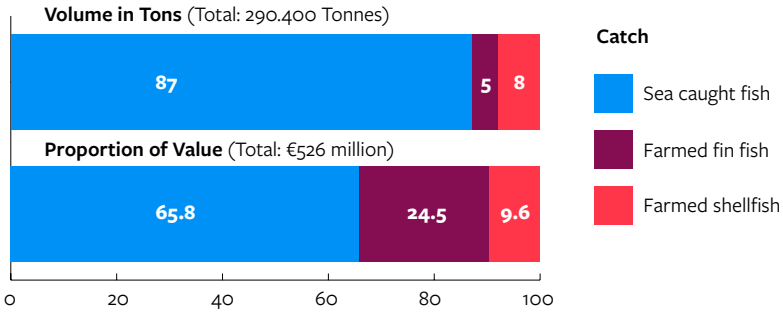
450,000km² of this falls within 200 nautical miles of Ireland's shores making it part of our **exclusive economic zone** (EEZ).



Employment and Fleet

- **2,881** Directly employed in the sector.
- **13,550** Indirectly employed in the seafood sector.
- **20% increase in employment** in blue bioeconomy **since 2016.**
- **2,030** registered vessels in Dec 2021.
- Offshore fleet of just **220 vessels** (length >18m).
- **Net profitability of offshore fleet** is 18%, ranges from 88% for dredgers to -10% for drift and fixed nets.

Production



- **309** Aquaculture units (farms)
- **40,000 tonnes** of seaweed harvested annually

Markets

Marine R&D

Key Organisations

Offshore Energy

- Target of **5GW** for Offshore wind **by 2030.**
- **42GW potential** (fixed and floating) for offshore wind.
- **31GW** potential for wave energy.

CHALLENGES

1. Relatively small sector of the agri-food system.
2. Potential of seaweed in feed, fertiliser and food not well understood.
3. No clear policy for sustainable seaweed harvesting.
4. Bottlenecks in the planning system constricting growth potential.

3. Primary Production: Marine

Resources

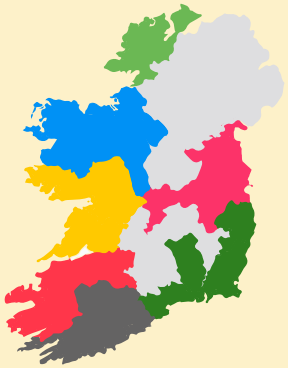
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Employment and Fleet

Breakdown of Employment by Region



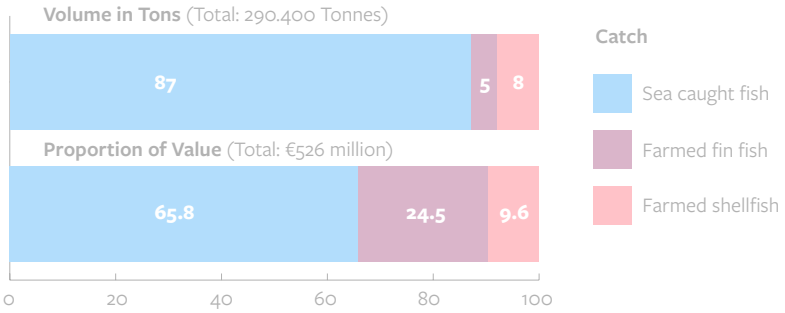


- 16% **North**
- 4% **North West**
- 6% **West**
- 4% **South West**
- 7% **South**
- 5% **South East**
- 6% **North East**

CHA

1. Relat
2. Pote
3. No clear policy for sustainable seaweed harvesting.
4. Bottlenecks in the planning system constricting growth potential.

Production



- **309** Aquaculture units (farms)
- **40,000 tonnes** of seaweed harvested annually

Markets

Marine R&D

Key Organisations

Offshore Energy

- Target of **5GW** for Offshore wind **by 2030.**
- **42GW potential** (fixed and floating) for offshore wind.
- **31GW** potential for wave energy.

3. Primary Production: Marine

Resources

Marine territory is 880,000km² (land mass is c.84,000km²).

450,000km² of this falls within 200 nautical miles of Ireland's shores making it part of our **exclusive economic zone** (EEZ).

Employment and Fleet

- **2,881** Directly employed in the sector.
- **13,550** Indirectly employed in the seafood sector.
- **20% increase in employment** in blue bioeconomy **since 2016.**
- **2,030** registered vessels in Dec 2021.
- Offshore fleet of just **220 vessels** (length >18m).
- **Net profitability of offshore fleet** is 18%, ranges from 88% for dredgers to -10% for drift and fixed nets.

Production

Volume in Tons (Total: 290,400 Tonnes)



Catch

Sea caught fish

Markets

Domestic Sales Value **€406M**



€316M Retail Value

€90M Food Service Value

Top Selling Species

3%

€120M Salmon

4%

€46M Cod

The Business of Seafood

-11.6% Growth

2019 — 2020

Export Markets | **Import**

Brexit resulted in a **€43 million** loss in quota value (15%) to the Irish Fleet

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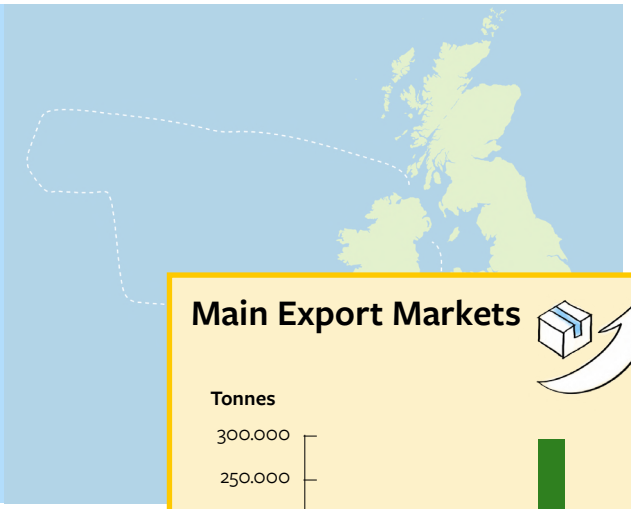
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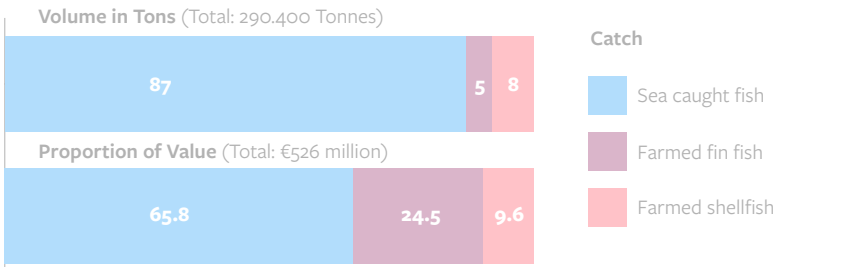
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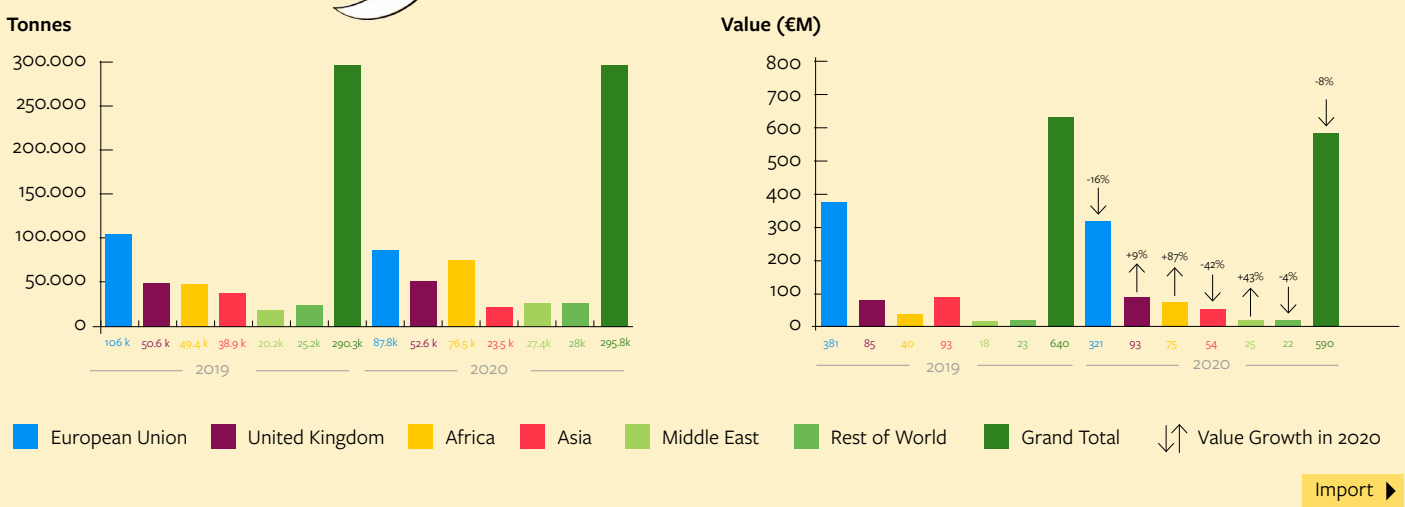
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Main Export Markets



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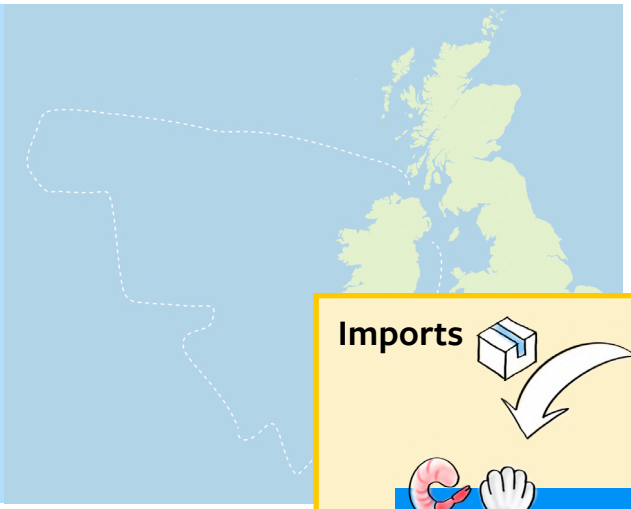
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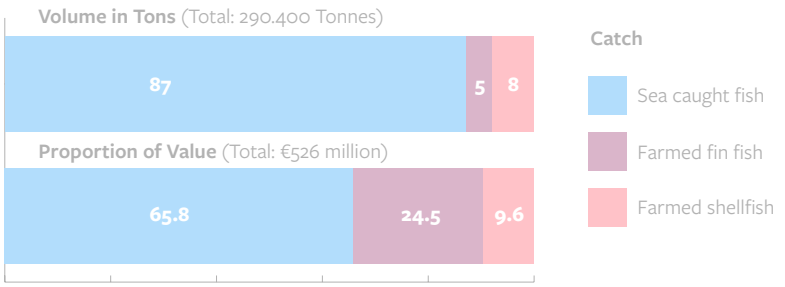
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Imports

x



16 Port Companies handle **90%** of Ireland's imports and exports.

Main Export Markets

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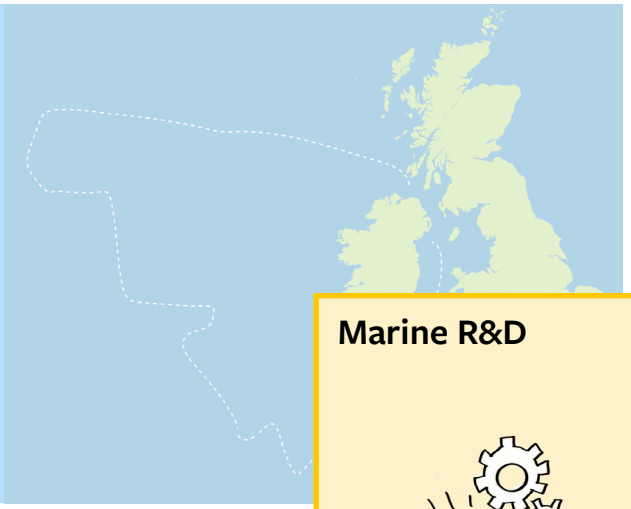
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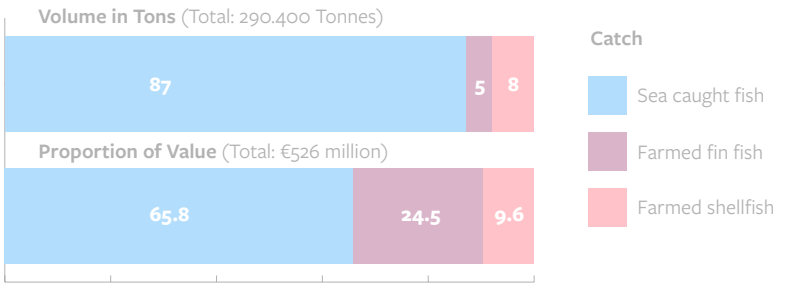
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Production



Marine R&D

Space for pre-commercial floating wind, wave and tidal technologies is provided through a suite of world class test facilities including:

- Lir National Ocean Test Facility (Cork)
- Smartbay Marine Renewable Energy Test Site – Small scale (Galway Bay)
- Atlantic Marine Energy Test Site (AMETS) – large scale (Mayo)

Phase one of a new Aquaculture Information Management System (AQUAMIS) launched in 2022.

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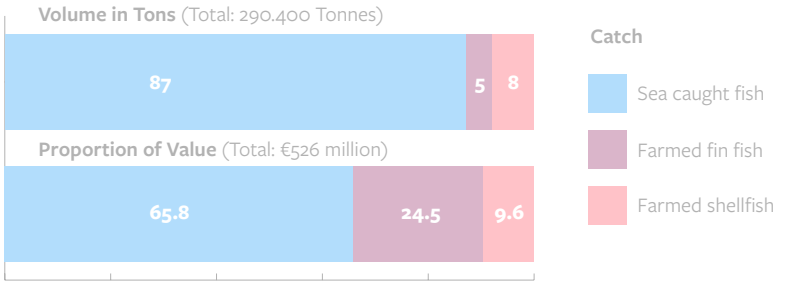
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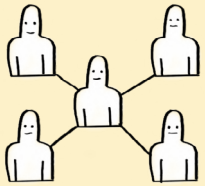
Production



Key Organisations

Department of Agriculture, Food and the Marine

State Agencies:
- BIM – Ireland Seafood Development Authority
- The Sea-Fisheries Protection Authority,
- Udaras na Gaeltachta
- Aquaculture & Fisheries Development Centre



Others:
- The Marine Institute
- MaREI – Research Centre for Energy, Climate and the Marine.
- Circular Bioeconomy Cluster South West
- Marine Ireland Industry Network
- Killybegs Fishermen's Organisation

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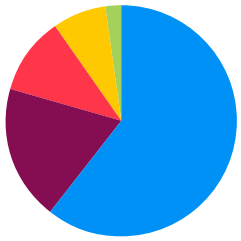
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4. Forestry, Peatlands & LULUCF

Land Use, Land Use Change & Forestry (LULUCF)

- **Ireland has deferred a decision on its LULUCF emissions reduction targets to the end of 2023.**
- **Awaiting the finalisation of a National Land Use Strategy.**

Overall Land Use



- 60.7% **Grassland**
- 18.8% **Wetlands (incl. Peatlands)**
- 11% **Croplands**
- 7.3% **Forest**
- 2.2% **Other**

1990–94



- 56%
- 16%
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- 4.4%

2021

Organic Farming

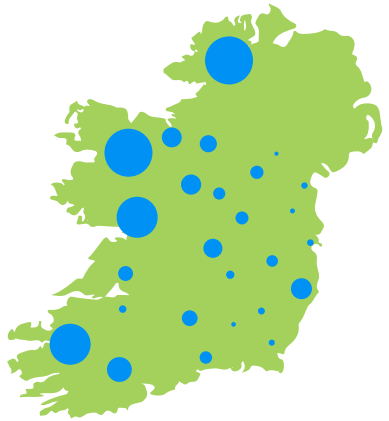
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Peatlands

Almost 16% of national territory covered by Peat bogs and Moors & Heathlands in 2018.

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Forestry

Forest Ownership

Afforestation

State Investment

CHALLENGES

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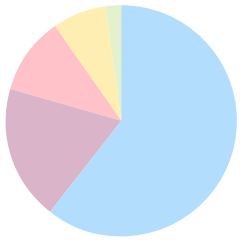
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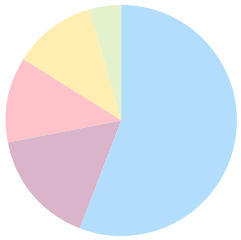
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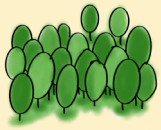


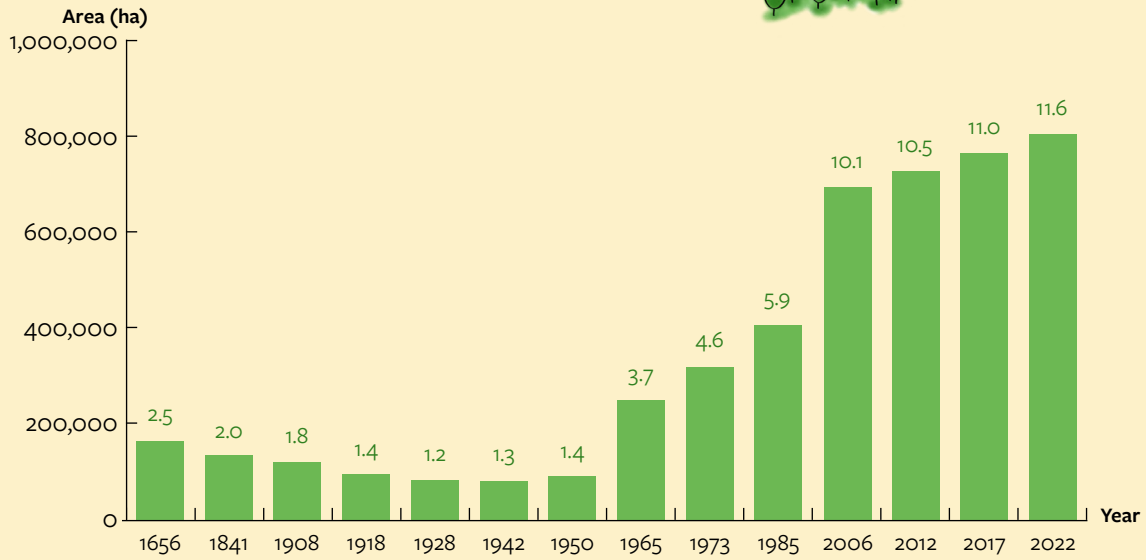
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2021

Forestry

Forest Cover has grown impressively since the foundation of the state.





% of Total Land Area

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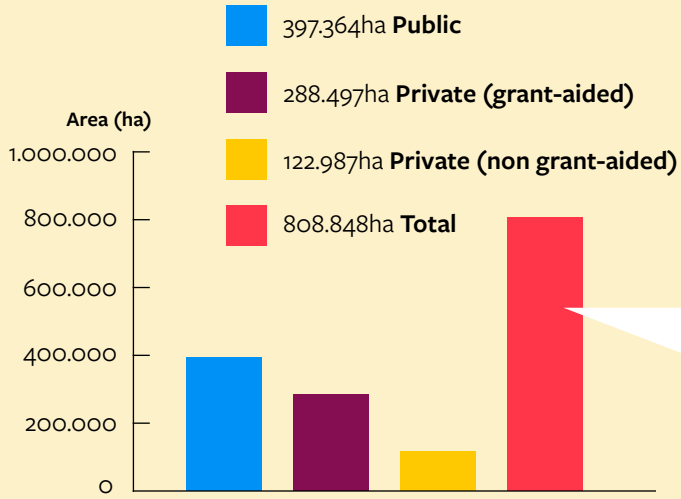
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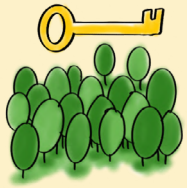
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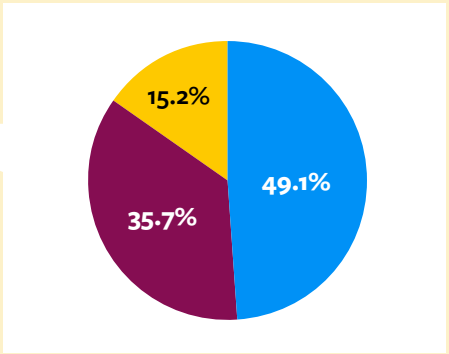
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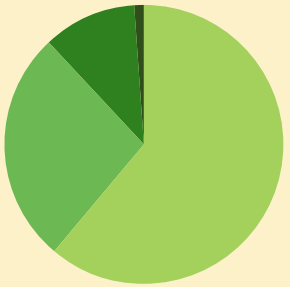
Forest Ownership

Forest Ownership in Ireland (NFI, 2022)









- **Conifers** = 61% **of Forest Area**
- **Broadleaves** = 27%
- **Open Forest Areas** = 10.9%
- **Temporarily unstocked area** = 0.9%

CH

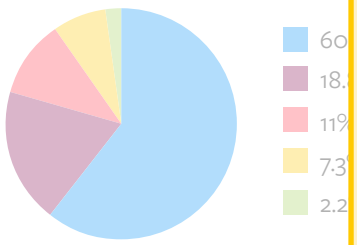
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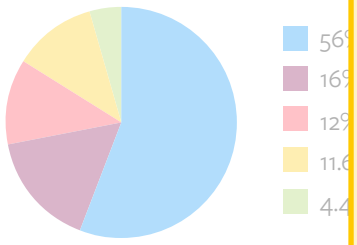
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2021

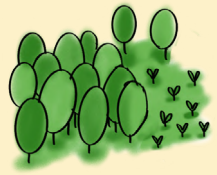
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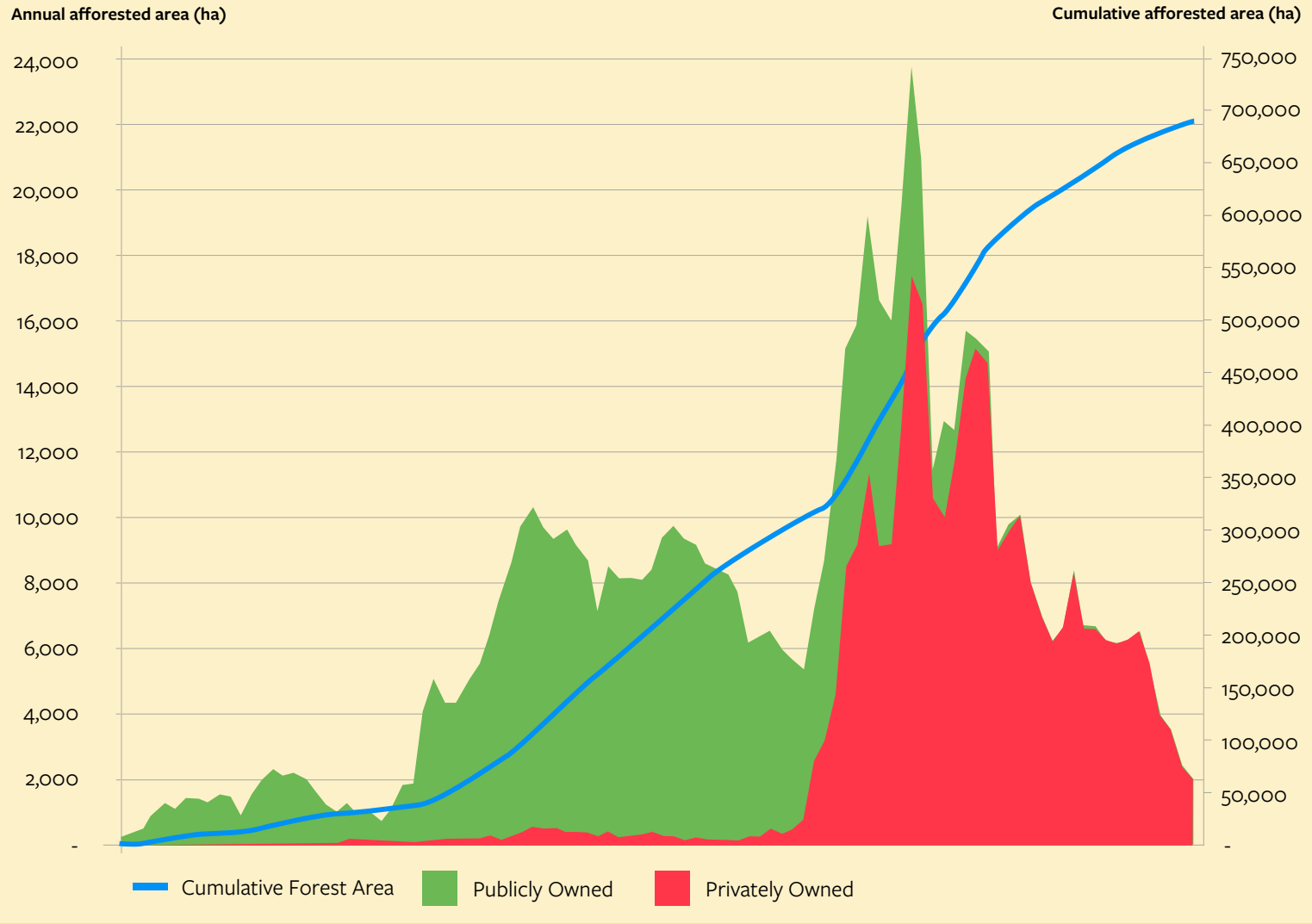
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Afforestation

Annual State and private afforestation (1922-2021)

- Target of 18% land cover by 2050.
- Annual planting rates of 18,000 hectares per year required to meet this.
- Current planting rates of just 2,000 hectares/year in 2021.
- All afforestation is currently on private land.



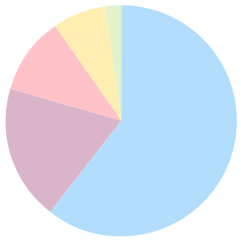


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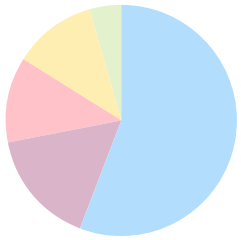
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Forestry

Forest Ownership

State Investment



- 40% decline in total investment by the state since 2009 to just under €70 million in 2021.
- €1.318 billion announced for new forestry scheme in 2022.
- Premiums for planting trees to be increased by between 46% and 66% and extended to 20 years for farmers.

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5. Primary Processors & Finished Goods Manufacturers – Cooperatives & Associations

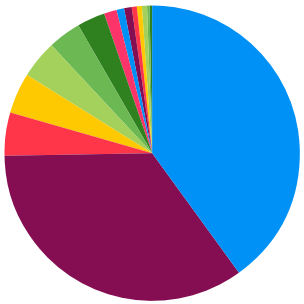
Origin Green

Origin Green: "The worlds' only national food and drink sustainability programme. It enables the industry to set and achieve measurable sustainability targets that respect the environment and serve local communities more effectively"

- Over 300 Irish Food and Drink companies are verified members
- These companies represent 90% of Ireland's Food and Drink exports and >70% of domestic retailers
- Commit to setting and reporting on sustainability targets with incremental improvements year on year.

Cooperatives

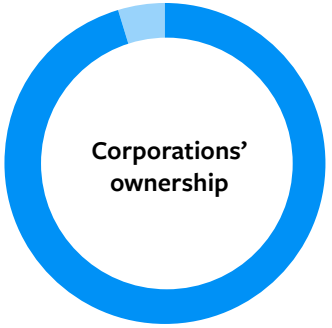
- About 25% of all cooperatives in Ireland are directly related to the Agri-Food sector.
- Most water schemes are in rural areas



- 384 **Other**
- 332 **Group Water Schelmes**
- 46 **Dairy Supply Societies**
- 42 **Livestock Marketing Societies**
- 38 **Promotional (Livestock Breeding A)**
- 35 **Fishing Services**
- 31 **Agricultural Supply Societies**
- 11 **Pig and Lamb Fattening (Livestock Breeding B)**
- 8 **Farm Relief Services**
- 8 **Forestry Services**
- 6 **Turf Societies**
- 6 **Egg & Poultry Societies**
- 4 **Meat Processing Societies**
- 4 **Horticulture Societies**
- 1 **Renewable Energy Societies**

Food and Drinks

Food and Drinks Enterprises and Employees 2018



- 1,352 **Domestic owned**
- 53 **Foreign owned**



- 52,591 **Employed**
  - 32,070 Domestic
  - 20,521 Foreign
- 2,488 **Self-Employed**
  - 2,488 Domestic
  - × Foreign

CHALLENGES

1. Market demand for reporting emissions per unit production instead of total emissions reductions
2. Maintaining Ireland's 'Green, Family Farm' brand
3. Developing new cooperatives/producer associations that put power in the hands of producers

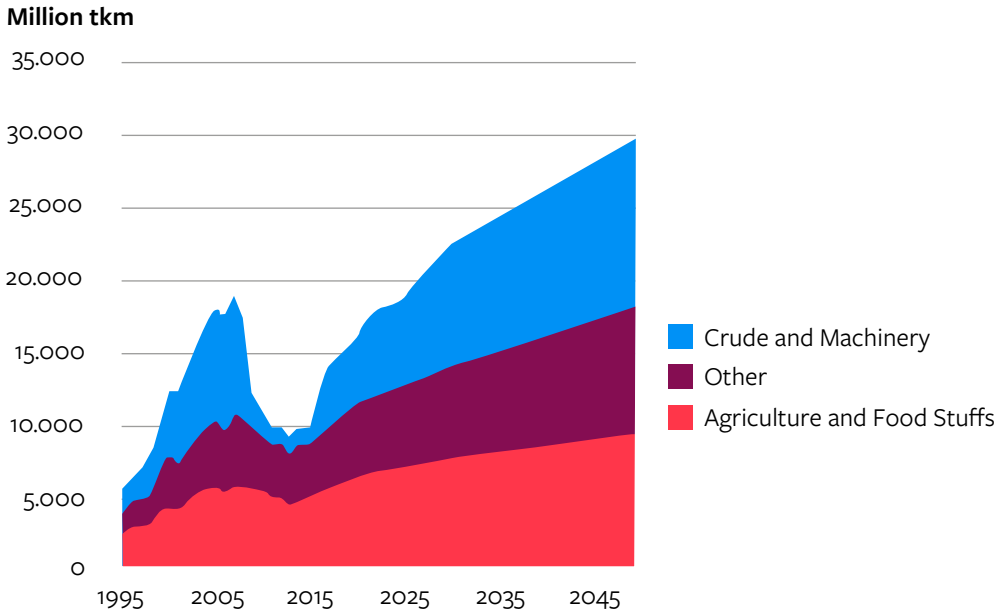
6. Transport, Storage & Distribution

In 2019, Irish registered goods vehicles made 14.5 million laden journeys and transported a total of 159.4 million tonnes of freight.

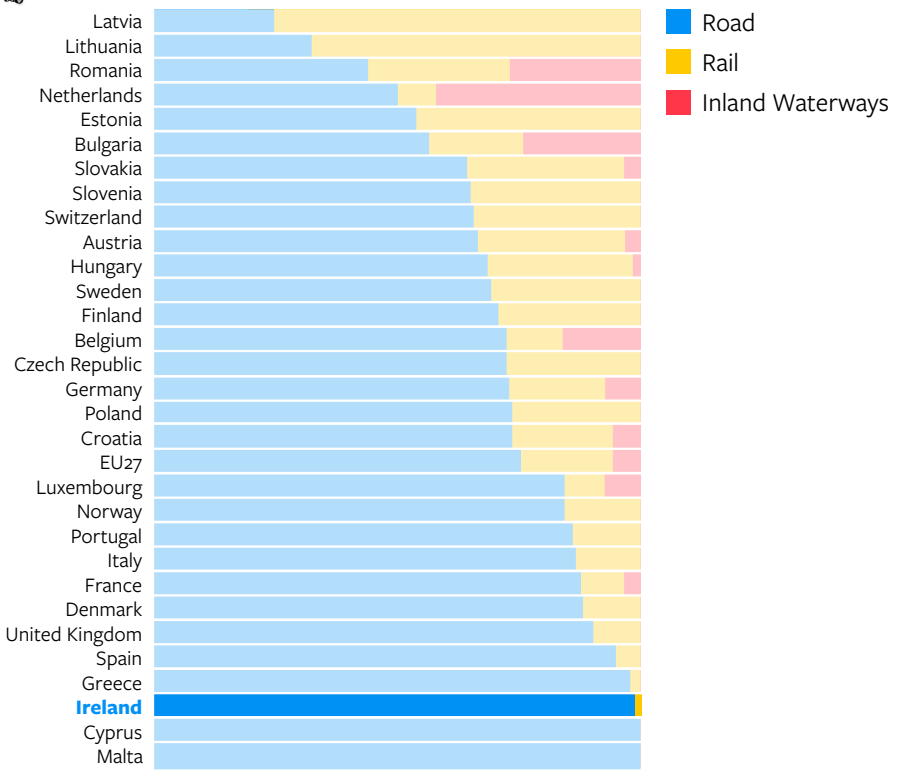
The greatest share of total freight activity in terms of tonne-kilometres related to the carriage of foodstuffs (24.4%).

In 2019, there were 3,799 licensed hauliers in Ireland.

Forecast Growth for next 20+ Years



Modes of Transport used for Freight



Europe's Position on Alternative Fuels & Greenhouse Gas Emissions

Ireland Adoption across all Transport

CHALLENGES

1. Investment in the infrastructure needed to support a shift to alternative fuels.
2. Incentivising small operators to convert to new low emissions trucks such as; Electric or Alternative fuels.
3. Encouraging collaboration across stakeholders to reduce less than full truckloads on the roads.

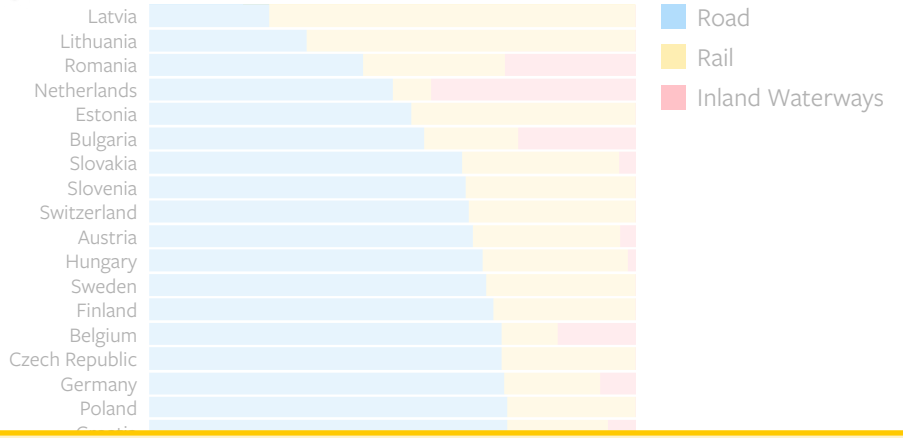
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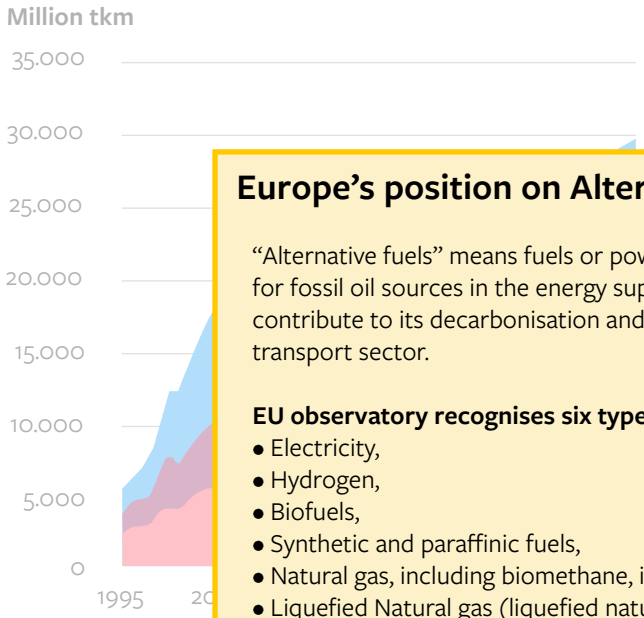
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Modes of Transport used for Freight



Forecast Growth for next 20+ Years



Europe's position on Alternative Fuels

"Alternative fuels" means fuels or power sources that serve, at least partly, as a substitute for fossil oil sources in the energy supply to transport and which have the potential to contribute to its decarbonisation and enhance the environmental performance of the transport sector.

EU observatory recognises six types of alternative fuels:

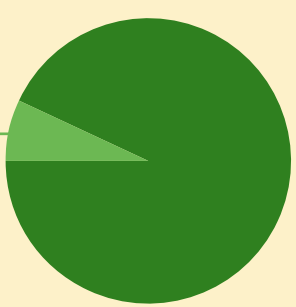
- Electricity,
- Hydrogen,
- Biofuels,
- Synthetic and paraffinic fuels,
- Natural gas, including biomethane, in gaseous form (compressed natural gas (CNG)),
- Liquefied Natural gas (liquefied natural gas (LNG)),
- Liquefied petroleum gas (LPG).

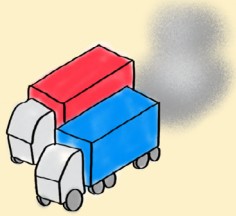
Greenhouse gas emissions from transport in Ireland

7.2%

Road Freight

(agri-food included)





CHALLENGES

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2. Incentivising small operat
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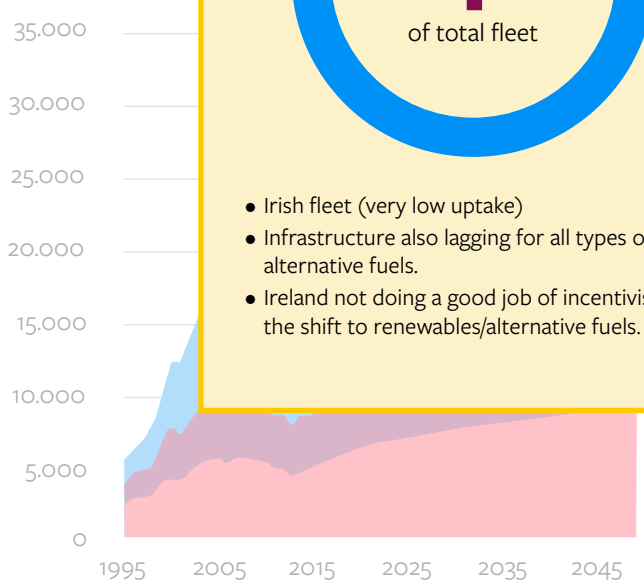
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carriage of foodst

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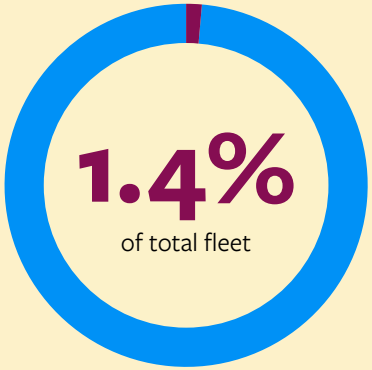
Forecast G

Million tkm



Ireland adoption across all transport

Alternative fuels vehicles share

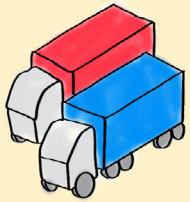


- Irish fleet (very low uptake)
- Infrastructure also lagging for all types of alternative fuels.
- Ireland not doing a good job of incentivising the shift to renewables/alternative fuels.

Ireland's Haulage Fleet

At the end of December 2020:

- there are **377,890** licensed commercial goods vehicles,
- of the total **39,922** were HGVs weighing **3.5 tonnes**
- Almost all HGVs in Ireland are **diesel-fuelled.**
- The national HGV fleet is ageing with **45% of all HGV 10 years or older.**
- The majority of Ireland's licensed hauliers consist of **small operators**, most with a fleet of **less than 5 HGVs**.
- Those operating internationally have an **average of almost 6 HGVs** per operator.
- Those operating nationally have an **average of 4 vehicles** each.
- **53%** of Ireland's hauliers operating domestically have only **1 HGV.**



Cyprus
Malta

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7. Consumers, Food Service & Retail

Household Consumption

Household consumption (Personal Consumption Expenditure) of food and drink was **€10.5 billion in 2018**.

1. The largest product category was drink, amounting to **€2.6 billion** (Alcoholic drinks accounted for €1.7 billion of this).
2. **€2 billion** on meat.
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Out of Home Consumption

Food and drink consumed in pubs and restaurants.
Households spent approximately:

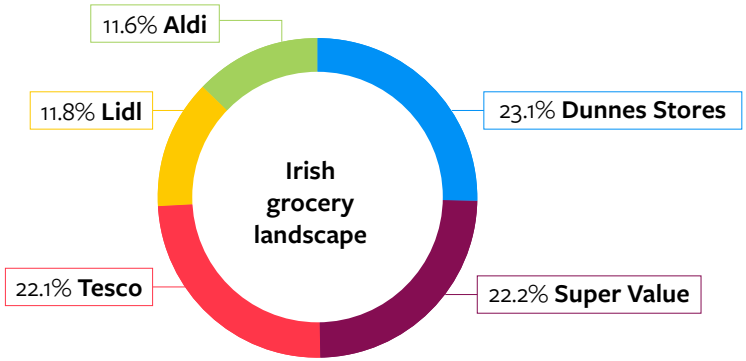
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Buying Insights

Food & Packaging Waste

Food Retailer Landscape

The Irish grocery landscape is dominated by five core players:



A number of convenience stores have a significant presence in the marketplace:

Musgrave operates
Centra, Daybreak

BWG Foods operate
Spar, Mace, Londis

Independent operators
Gala, Costcutter, Fresh The Good Food Market

Petrol Forecourt players
Applegreen, Maxol Circle K (being the largest)

Obesity in Ireland

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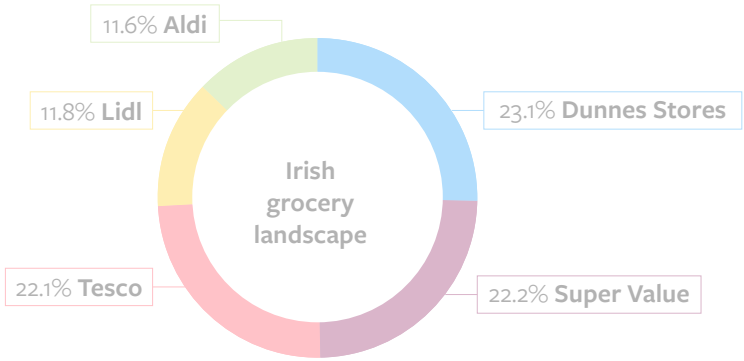
Buying Insights



- **62% want more sustainably produced food**. However, **only one-third (37%) willing to pay more** for it.
- **Almost one-third (32%)** making a conscious effort to **eat less meat and dairy.**
- **Over two-thirds (71%) don't do any grocery shopping online**, contrasting with significant growth of online shopping seen in other sectors.
- **1 in 3 order takeaway** at least once a week, versus **1 in 10 dining out.**
- **44% believe** there is **no difference in quality and taste between own-brand and branded food** products.
- **Around half (49%)** see **price as primary deciding factor** when purchasing food and groceries, but **health credentials becoming increasingly important.**

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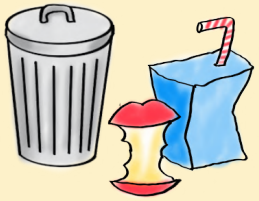
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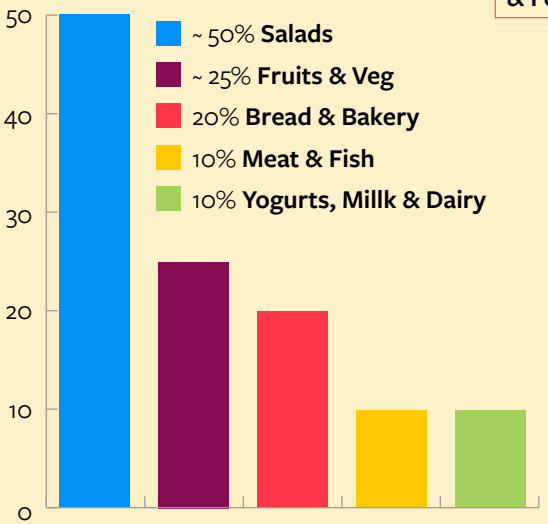
Food Retailer Landscape

Food Waste

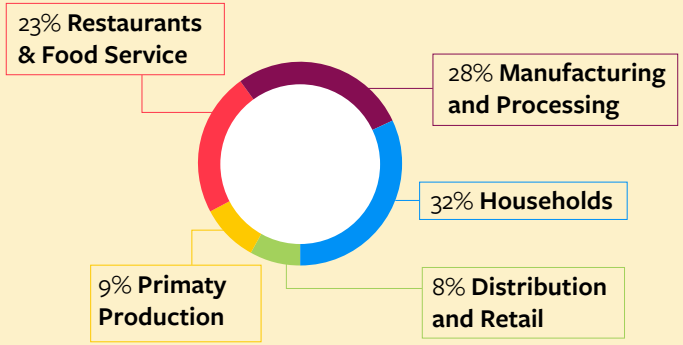
- In Ireland, we produce around **1 million tonnes of food waste each year** and of this amount, **Irish households generate 250,000 tonnes**.
- The average Irish household throws out **150kg of food each year** and a **significant amount** of this food is **still suitable for human consumption**.
- Food waste is a significant **contributor to climate change** generating around 10% of global greenhouse gas emissions.
- **Throwing out food is a waste of money**. The average Irish household can save around €700 a year by avoiding food waste.



Foods that we waste the most in %



Foods waste across value chain



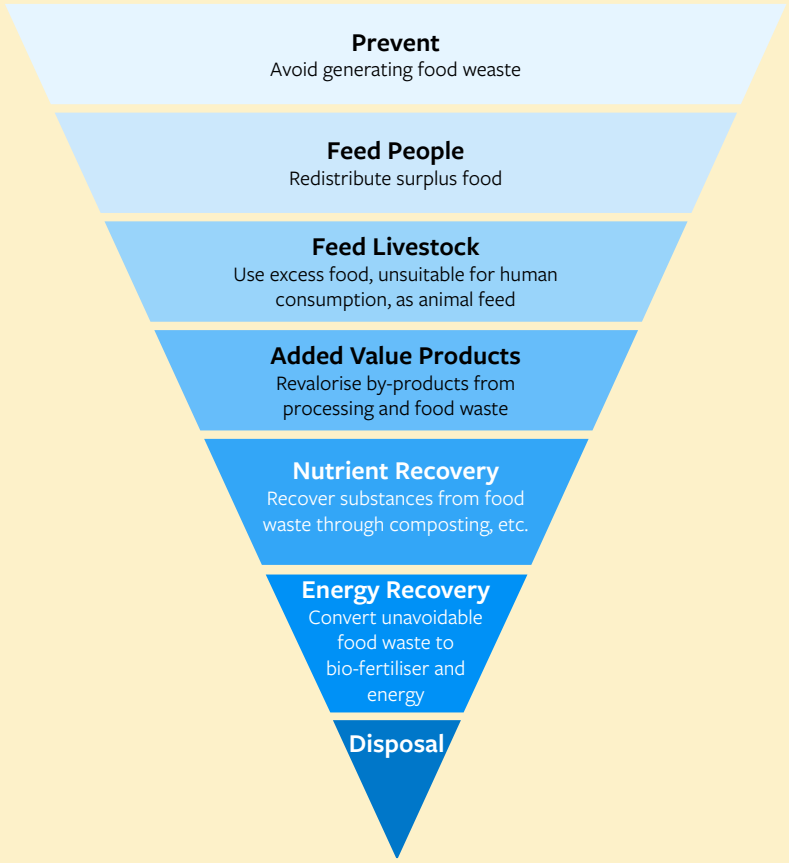


Potatoes are the vegetable we waste the most.



Bananas and apples are the fruit we waste the most.

Recycle Pyramid with focus on Food Sector



Landfill or incineration are last resort for food waste

Packaging Waste

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7. Consumers, Food Service & Retail

Household Consumption

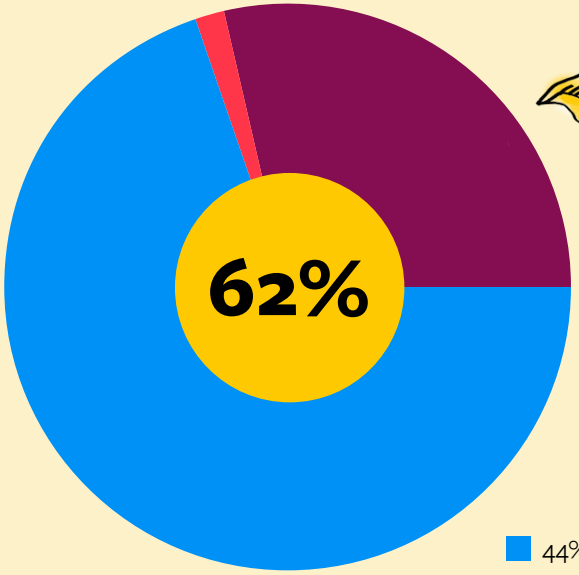
Food Retailer Landscape

Packaging Waste in Ireland*

Treatment

In 2020, almost a third of our packaging waste was sent for incineration with energy recovery. We need to divert more of this to recycling to meet our recycling targets. The share of plastic going to energy recovery is continuing to grow, this limits progress on plastic recycling and adds to our carbon emission.





- 44% **Exported for recycling**
- 18% **Recycled in Ireland**
- 1% **Repaired (wooden packaging)**

*not specific to Food



over 1 million tonnes

of package waste were generated in Ireland for the fourth year in a row.



one third

of all waste collected at kerbside is packaging.

Food Waste

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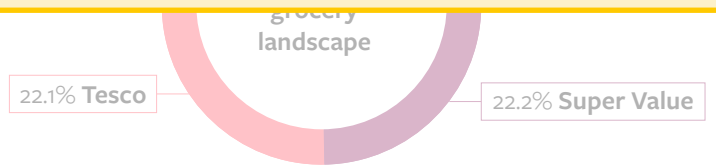
Food & Packaging Waste

Food Retailer Landscape

KPMG's recent 'Next Generation Retail 2022' study found:

- The vast majority (80%) of shoppers rate **'price'** and **'convenience'** as the **main reasons why they choose one store over another**,
- with **price sensitivity** 'much more pronounced' **among a younger cohort** of shoppers.
- just **20% of respondents** rank **'buying Irish'** or **'supporting local retailers'** as a key consideration of where to shop.
- The cohort which is using the **online grocery channel** most is the **35–44-year-old group**.





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Household Consumption

Food Retailer Landscape

Obesity in Ireland

X

Key Facts



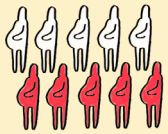
60%

of adults are living with overweight or obesity.



>1in5

children and young people living with overweight or obesity.



1in2

pregnant women overweight or obese at booking visit.



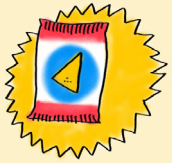
3in4

adults over 50 living with overweight or obesity.

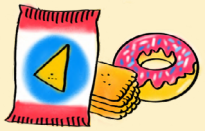
Healthy - Sustainable Diet

- Only one in four (26%) report that they eat five or more portions of fruit and vegetables daily.
- Just over one in five (22%) report that they do not eat fruit or vegetables every day.
- Three out of every four (73%) eat breakfast every day, with those living in more deprived areas less likely to do so.
- Younger people are less likely to eat breakfast – four out of every ten (40%) of 15–24 year olds do not eat breakfast every day.

Diet and Nutrition



Pre-school children are exposed to over **1000 ads** for unhealthy foods each year.



18% of children's calories and **21%** of their fat intake is from biscuits, snacks and confectionary.



Only **one in four** adults (age +15) eat five portions of fruit and vegetables daily.



More than **one in seven** adults drink sugar sweetened drink daily.

A key recommendation for a more sustainable diet is one that contains less animal-sourced foods and more plant-based foods, conferring both environmental and human health benefits.
Sustainable diets have been defined as: **"diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources"** (FAO 2012).

Less than 25% of National Dietary Guidelines (NDGs) in the G20 countries - recommend reducing or moderating meat intake and few countries make specific recommendations for whole grain consumption.

5. Consumers need to understand where their food comes from and appreciate the true cost of the food that they eat.

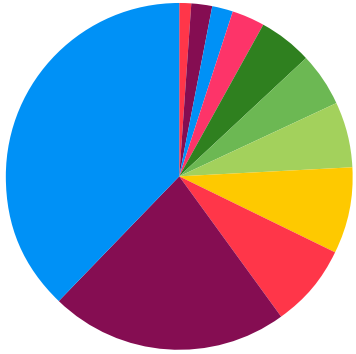
8. Trade, Export, Import & Domestic Markets

Export Value

- The value of agri-food exports for 2021 totalled **€15.4 billion**.
- Agri-food exports accounted for **9% of total exports** in 2021.
- There was a trade surplus in agri-food products of **€5.6 billion** in 2021.
- Irish food is exported to over 180 countries globally.

Where we Export to Overall

Top 10 Agri-food Destinations 2021



38% **United Kingdom**
22% **Other**
8% **United States**
8% **Netherlands**
6% **France**
5% **Germany**
5% **China**
3% **Italy**
2% **Spain**
2% **Belgium**
1% **Nigeria**

What is Exported

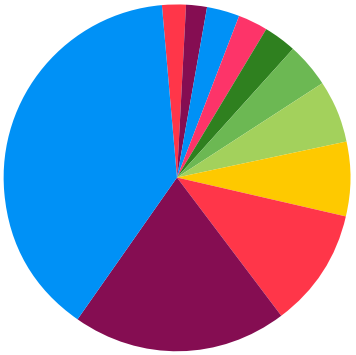
Import Value

- Agri-food accounted for **9% of Ireland's total imports** in 2021.
- Agri-food imports were over **€9.7 billion** in 2021.

Where it was Imported from

- In 2021, agri-food goods were imported into Ireland from over 150 countries worldwide.
- Ireland's top five import countries were the United Kingdom, the Netherlands, Germany, France and the United States, which together accounted for 66% or €6.5 billion of Ireland's total imports for the year.
- The top five agri-food categories by value accounted for 51% of total agri-food sector imports in 2021 totalling over €4.9 billion.

Top 10 Agri-food Imports by Countries 2021



39% **United Kingdom**
20% **Other**
11% **Netherlands**
7% **Germany**
6% **France**
4% **United States**
3% **Belgium**
3% **Argentina**
3% **Spain**
2% **Poland**
2% **Italy**

What was Imported Overall

CHALLENGES

1. Consumers and governments in several key export markets are shifting to diets with less animal products.
2. The Irish brand as sustainable could be undermined if the sector does not reduce their emissions.
3. The high dependence on UK for both exports and imports could pose a risk to Ireland in the future, especially as they are no longer in the EU.
4. The profile of the products exported is focused predominantly on animal products.
5. Development of more direct trade flows direct to the EU via sea and not across the UK.

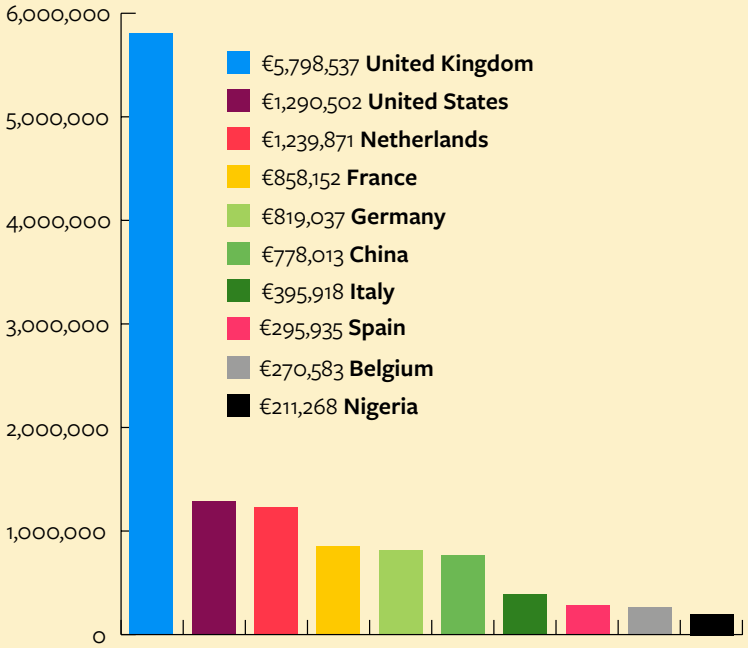
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Where we Export to Overall

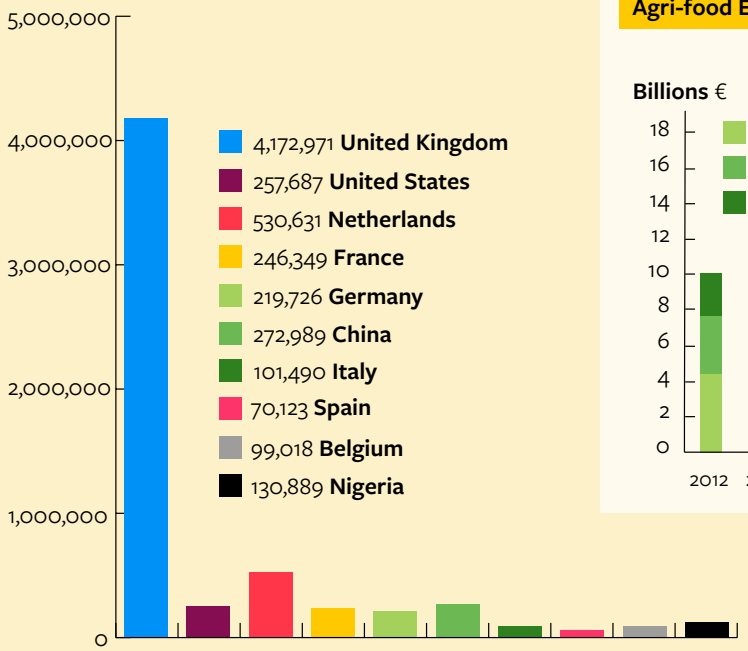


Top 10 Export Countries by Value and Volume

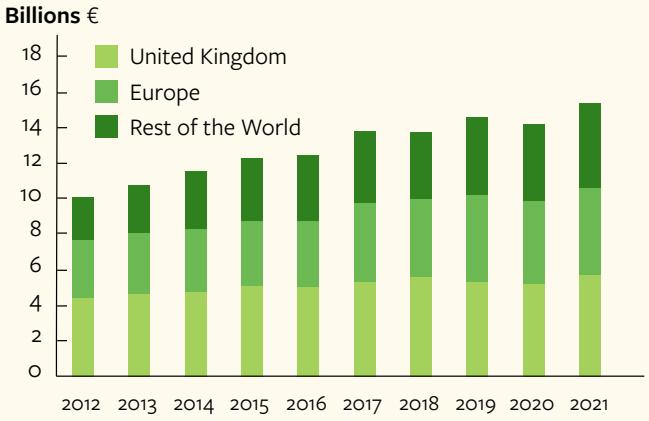
Euros



Tonnes



Agri-food Exports by Region



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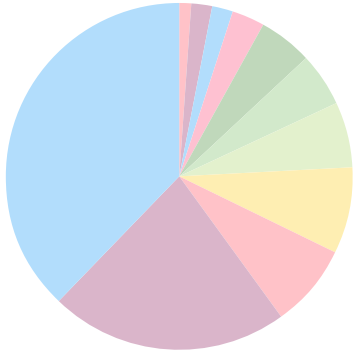
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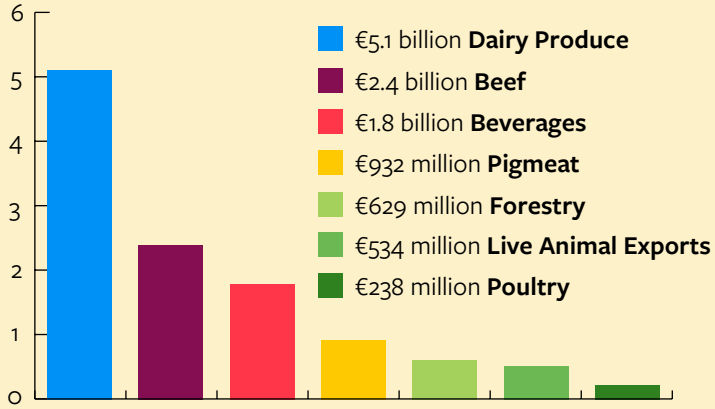
What is Exported

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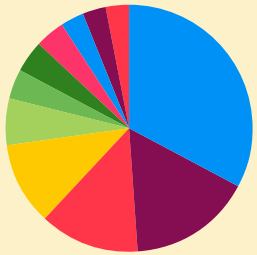
Agri-food Exports by Category, 2021



- Approximately **90% of Irish beef**, sheepmeat and dairy produce, produced in Ireland is exported each year.
- The **top eight agri-food categories** by value accounted for **81%** of total agri-food sector exports in 2021, totalling **€12.5 billion**. The remaining 18 categories accounted for **19%** of exports at a value of **€2.9 billion**.



€5.1 billion **Dairy Produce**
€2.4 billion **Beef**
€1.8 billion **Beverages**
€932 million **Pigmeat**
€629 million **Forestry**
€534 million **Live Animal Exports**
€238 million **Poultry**



33% **Dairy Produce**
16% **Beef**
13% **Other**
11% **Beverages**
6% **Pigmeat**
4% **Forestry**
4% **Fish**
4% **Cereal & Cereal Preparation**
3% **Live Animals**
3% **Animal Foodstuffs**
3% **Coffee, Tea, Cocoa & Spices**

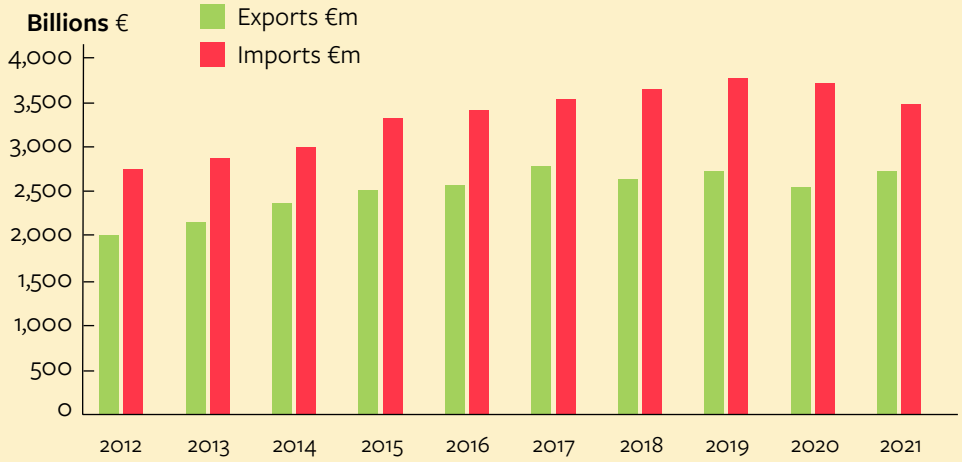
Prepared Consumer Foods Trade Deficit ▶

8. Trade, Export, Import & Domestic Markets

What is Exported

Prepared Consumer Foods Trade Deficit

The Prepared Consumer Foods sector (are value-added food and beverage products) accounted for over €2.7 billion in agri-food sector exports in 2021, and **€3.4 billion in imports**. This resulted in a **trade deficit of €733 million**.



Prepared Consumer Foods Exports by Category 2021

Meat preparations represent the majority of Prepared Consumer Foods exported from Ireland.



- 33% **Meat Preparation**
- 11% **Other Food Preparations**
- 11% **Chocolate-based Products**
- 10% **Other**
- 8% **Waters & Juices & Soft Drinks**
- 7% **Pizza/Quiche**
- 6% **Extracts, Sauces, Soups**
- 6% **Bread**
- 4% **Dairy Preparation**
- 4% **Sugar-based Products**



Agri-food Exports by Category, 2021

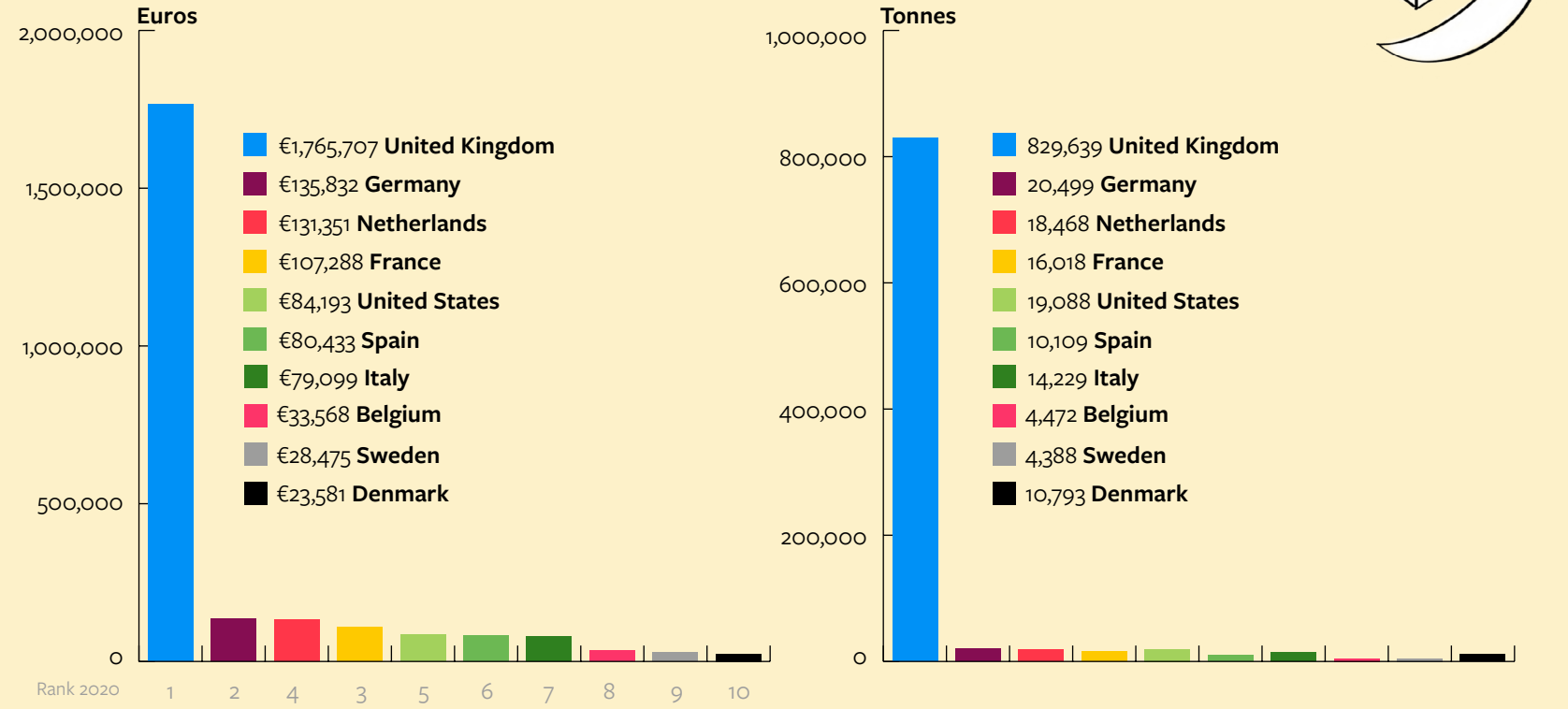
Top 10 Export Countries by Value and Volume for the Prepared Consumer Food Sector

5. Development of more direct trade flows direct to the EU via sea and not across the UK.

8. Trade, Export, Import & Domestic Markets

What is Exported

Top 10 Export Countries by Value and Volume for the Prepared Consumer Food Sector



The key market for Prepared Consumer Foods (PCF) exports is the United Kingdom.
In 2021 **65% of PCF exports went to the United Kingdom** and this has been relatively constant over the past ten years.

◀ Prepared Consumer Foods Trade Deficit

Agri-food Exports by Category, 2021 ▶

CHA

1. Consumers and governments in several key export markets are shifting to diets with less animal products.
2. The Irish brand as sustainable could be undermined if the sector does not reduce their emissions.
3. The high dependence on UK for both exports and imports could pose a risk to Ireland in the future, especially as they are no longer in the EU.
4. The profile of the products exported is focused predominantly on animal products.
5. Development of more direct trade flows direct to the EU via sea and not across the UK.

2021.

er 150 countries worldwide.
, the Netherlands, Germa-
for 66% or €6.5 billion of

of total agri-food sector

3% Belgium
3% Argentina
3% Spain
2% Poland
2% Italy

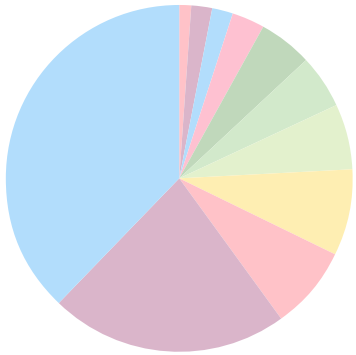
8. Trade, Export, Import & Domestic Markets

Export Value

- The value of agri-food exports for 2021 totalled **€15.4 billion**.
- Agri-food exports accounted for **9% of total exports** in 2021.
- There was a trade surplus in agri-food products of **€5.6 billion** in 2021.
- Irish food is exported to over 180 countries globally.

Where we Export to Overall

Top 10 Agri-food Destinations 2021



- 38% **United Kingdom**
- 22% **Other**
- 8% **United States**
- 8% **Netherlands**
- 6% **France**
- 5% **Germany**
- 5% **China**
- 3% **Italy**
- 2% **Spain**
- 2% **Belgium**
- 1% **Nigeria**

What is Exported

CHALLENGES

1. Consumers and governments in several key export markets are shifting to diets with less animal products.
2. The Irish brand as sustainable could be undermined if the sector does not reduce their emissions.
3. The high dependence on UK for both exports and imports could pose a risk to Ireland in the future, especially as they
4. The profile of the products exported is focused predominantly on animal products.
5. Development of more direct trade flows direct to the EU via sea and not across the UK.

What was Imported Overall

X

What was Imported Overall

- ↑ **Animal Foodstuffs Imports** €1.1 billion.
- ↑ **Forestry Imports** €449 million.
- ↑ **Vegetable Oils & Fats Imports** €334 million.
- ↓ **Dairy Produce Imports** €840 million.
- ↓ **Live Animal Imports** €312 million.
- ↓ **Fruit & Vegetable-based Products** €438 million.

↑ 2021 increase
↓ 2021 decrease

Agri-food Imports by Category



- 24% **Other**
- 13% **Cereal & Cereal Preparations**
- 11% **Animal Foodstuffs**
- 10% **Beverages**
- 9% **Dairy Produce**
- 8% **Fruit & Vegetables**
- 6% **Coffee, Tea, Cocoa & Spices**
- 6% **Misc Edible Products & Preparations**
- 5% **Forestry**
- 4% **Fruit & Vegetables Preparation based Products**
- 4% **Poultry**

Import Value Page 2 ▶

8. Trade, Export, Import & Domestic Markets

What was imported Overall

Prepared Consumer Foods Imported What & Where from

Meat Preparations €414 million.
Waters, Juices & Soft Drinks €393 million.
Fruit and Vegetable-based Products €378 million.
Other Food Preparations €32 million.
Fruit-based Bakery Products €84 million.
Chocolate-based Products €327 million.

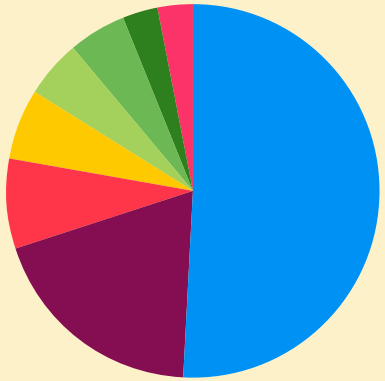


Prepared Consumer Foods Imports by Category, 2021



- 12% **Meat Preparation**
- 11% **Waters & Juices & Soft Drinks**
- 11% **Fruit & Vegetable-based**
- 10% **Cereal-based Products**
- 10% **Extracts, Sauces, Soups**
- 10% **Chocolate-based Products**
- 8% **Other Food Preparations**
- 8% **Other**
- 7% **Sugar-based Products**
- 5% **Dairy Preparation**
- 4% **Biscuits**
- 4% **Breads**

Prepared Consumer Foods Imports by Source, 2021



- 51% **United Kingdom**
- 19% **Other**
- 8% **Germany**
- 6% **Netherlands**
- 5% **Belgium**
- 5% **France**
- 3% **Italy**
- 3% **Poland**

Import Value Page 1

CHAL

1. Consume
2. The Irish
3. The high
4. The profi
5. Development of more direct trade flows direct to the EU via sea and not across the UK.

9. Knowledge, Technology & Innovation

Key Research Institutions

Science Led
- Department of Agriculture, Food and the Marine
- Teagasc
- Irish Universities
- Marine Institute
- Science Foundation Ireland
- Environmental Protection Agency
- Irish Research Council
- Higher Education Authority

Industry Led
- BIM – Ireland's Seafood Development Agency
- Enterprise Ireland
- Technology Centres
- Technology Gateways

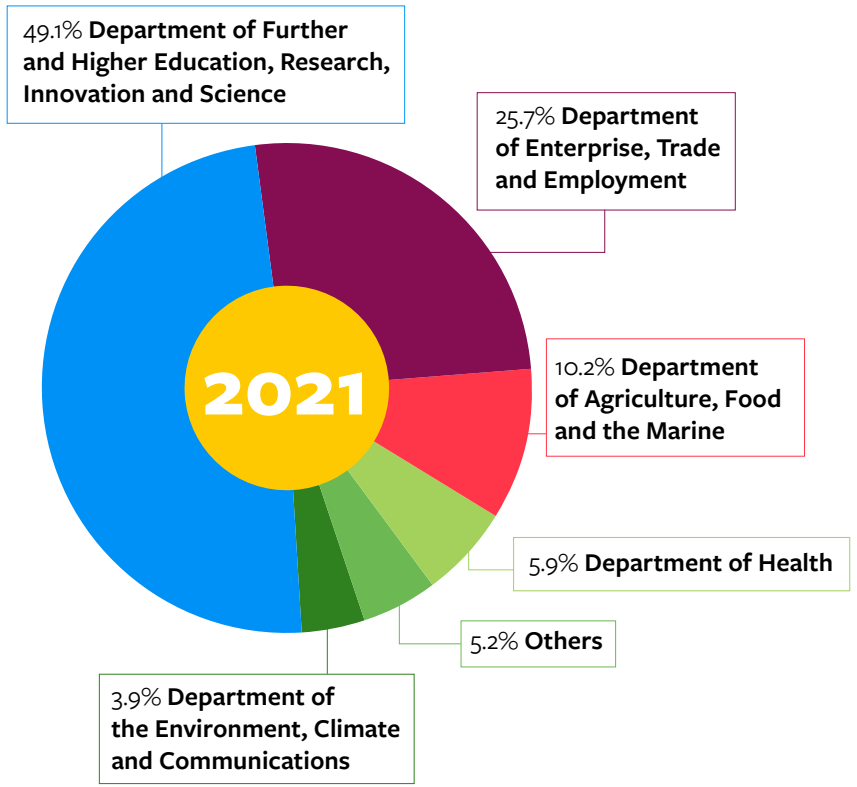
Consumer & Regulatory
- Bord Bia
- Food Safety Authority of Ireland
- National Standards Authority of Ireland

European Funding
- European Innovation Projects (EIPs)
- Life Projects
- Horizon Europe
- Interreg
- European Maritime and Fisheries Fund
- Common Agricultural Policy

Agri-Food Accelerator Programmes:
- **Bord na Mona** – Accelerate Green
- **AgTech UCD** – Agccelerator
- **NDRC National Accelerator Programme** – Dogpatch Labs
- **Bord Bia/Enterprise Ireland/Teagasc** – Food Works
- **Enterprise Ireland** – High Potential Start-ups Programme (Food)
- **EPA:** Green Enterprise, Innovation for a Circular Economy

Government Budget Allocations for R&D 2020-2021

- Food & Beverage Company investment in **R&D in 2018 = 0.63%** of turnover
- This was **91% of public investment**
- Target of **1% of turnover** by 2030



CHALLENGES

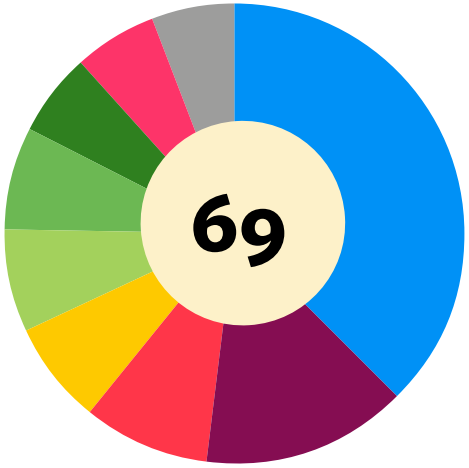
1. Complexity and diversity of state funding for research and innovation.
2. Low margins in the agri-Food sector can inhibit investment in R&D.
3. Clear pathways to scaling and impact.

10. Policy and Governance

Governance

Governance Within Department of Agriculture, Food and the Marine (DAFM):

Number of Divisions by Section



- 26 **One Welfare One Health**
- 10 **CAP Pillar I and II Coordination**
- 6 **Strategic Communications**
- 5 **Seafood and Marine**
- 5 **BREXIT**
- 5 **Governance**
- 4 **Environment**
- 4 **Agri-Food Strategy**
- 4 **Project Management Office (PMO)**

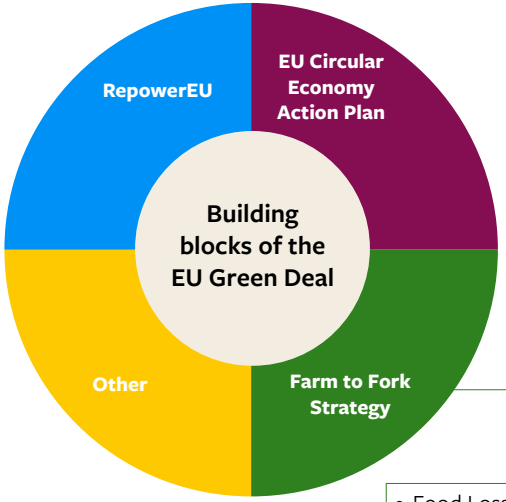
Common Agricultural Policy 2023-2027

Key Irish Policies and Policy Inputs

External Policy Environment

The EU Green Deal aims to:

1. Make **Europe the first Climate Neutral** continent by 2050.
2. Reduce greenhouse gas emissions by **55% by 2030**, compared to 1990 levels.
3. Plant **3 billion additional trees** by 2030.



- Food Loss & Waste Prevention
- Sustainable food production
- Sustainable food consumption
- Sustainable food Processing & Distribution

CHALLENGES

1. EU policy is driving changes in Irish policy, but implementation of actions to achieve actual sustainability outcomes is still lagging.
2. CAP is ambitious in its aims, but many farmers will be able to access payments without the need to implement much on their farms.
3. There is a willingness to make the system more sustainable, but institutions and policies will need to change to align with systemic challenges.
4. There are many good strategies and plans, but very limited accountability for implementation.
5. There are many stakeholders across the marine, land, agri-food system making coordination a real challenge.

10. Policy and Governance

Governance

Government Departments linked with the Agri-Food Sector

Government Department	Related State Agencies/Offices
Department of Agriculture, Food and the Marine (DAFM)	• Aquaculture Licences and Appeals Bord • Bord Bia / Origin Green • Bord Iascaigh Mhara (BIM) (Marine) • Coillte (Forestry) • Marine Institute • National Milk Agency • Sea Fisheries Protection Authority • Teagasc • Veterinary Council of Ireland
Department of Enterprise, Trade and Employment	• Intellectual Property Office of Ireland • Local Enterprise Office • Enterprise Ireland • Industrial Development Authority (IDA) Ireland • Competition and Consumer Protection Com-mission (CCPC) • Health and Safety Authority • National Standards Authority of Ireland • InterTrade Ireland
Department of Environment Climate & Communications	• Advisory Committee of the EPA • Bord na Mona • Digital Hub Development Agency • EirGrid • Electricity Supply Bord • Environmental Protection Agency (EPA) • Inland Fisheries Ireland • Sustainable Energy Authority of Ireland
Department of Further and Higher Education, Research, Innovation and Science	• Higher Education Authority • Irish Research Council • Quality and Qualifications Ireland (QQI) • Science Foundation Ireland • Skillnet Ireland
Department of Health	• Food Safety Authority of Ireland • Health Research Board • Health Research Executive (HSE) • SafeFood
Department of Rural and Community Development	• Western Development Commission • Pobal
Department of Housing, Local Government and Heritage	• An Board Pleanala • Ervia (Bord Gais) • Gas Networks Ireland • Irish Water • Land Development Agency
Other Related State Bodies	• National Economic and Social Council • Climate Change Advisory Committee • Inter Departmental Committee on Climate Change • Food Vision 2030 including the sub groups on: › Dairy › Beef & Sheep



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10. Policy and Governance

Common Agricultural Policy 2023-2027

Green Architecture of CAP has 3 Elements

Conditionality

- All CAP payments are based on meeting minimum requirements and standards for the maintenance of land in Good Agricultural and Environmental Condition (GAECs).
- For 2023-27 some new GAECs have been introduced and others have been enhanced. **The GAECs are:**
  - Maintenance of permanent grassland.
  - Protection of wetland and peatland.
  - Ban on burning arable stubble, except for plant health reasons.
  - Establishment of buffer strips along water courses.
  - Tillage management or other appropriate cultivation techniques to limit the risk of soil degradation and erosion, taking into account the slope gradient.
  - Minimum soil cover to avoid bare soil in period(s) and areas that are most sensitive.
  - Crop rotation in arable land.
  - 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.
  - Ban on converting or ploughing permanent grassland designated as environmentally sensitive permanent grasslands (ESPG) in Natura 2000 sites.

Pillar I Eco Schemes

- A voluntary Eco Scheme to build on the GAECs and expand environmental ambition at farm level.

Pillar II Climate & Environment Related Interventions

- Ambitious interventions will deliver significant long-term environmental improvement through participation by a significant number of farmers, with each making a strong improvement on their farm. This broad range of interventions will build on, and complement, achievements under Conditionality and the Eco Scheme. These actions will be supported by new CAP Networks to communicate best practice and strengthen knowledge and innovation networks.

Indicative Financial Allocations for the CAP Interventions

Table 1: Indicative breakdown of Ireland's 2023-2027 CSP by Pillar 1 interventions	
Pillar 1 intervention	**€(m)**
Basic Income Support for Sustainability (BISS)	3,642.5
Complementary income support for young farmers (CIS-YF)	177.9
Complementary redistributive income support for sustainability (CRISS)	593.1
Eco-Scheme	1,482.9
Protein Aid	35.0
Sectoral Intervention in the Fruit and Vegetable Sector	44.7
Sectoral Intervention for the Apiculture sector	0.6
Total Pillar 1	**5,976.7**

Table 2: Indicative breakdown of Ireland's 2023-2027 CSP by Pillar 2 interventions	
Pillar 1 intervention	**€(m)**
Areas of Natural Constraint (ANC)	1,250.0
Agri-Climate Rural Environment Scheme (ACRES)	1,500.0
ACRES Training	21.5
Straw Incorporation Measure	50.0
Organic Farming Scheme	256.0
On farm Capital Investment Scheme	100.0
Suckler Carbon Efficiency Programme incl training	260.0
Early Stage support for Producer Organisations	1.5
Continuous Professional Development for Advisors	1.9
European Innovation Partnerships (EIPs)	36.1
Knowledge Transfer Groups	71.1
Dairy Beef Welfare Scheme	25.0
Sheep Improvement Scheme	100.0
Collaborative Farming Grant	2.0
Technical Assistance	6.5
LEADER	180
Total Pillar 2	**3,861.6**

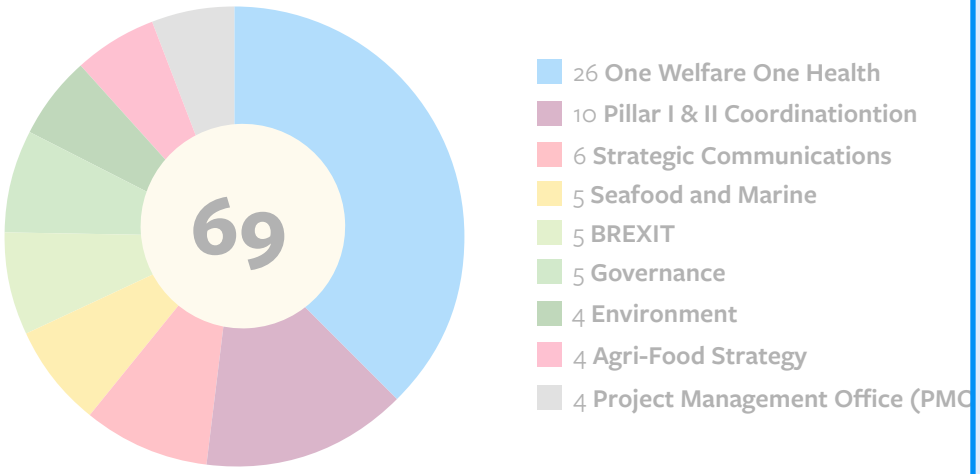
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10. Policy and Governance

Governance

Governance Within Department of Agriculture, Food and the Marine (DAFM):

Number of Divisions by Section



Key Irish Policies and Policy Inputs

X

- **Climate Action and Low Carbon Development (Amendment) Act 2021**
  - Economy wide carbon budgets and sectoral emissions ceilings set in 2022.
  - Climate Action Plan 2023 (published annually) launched in Dec 2022. This plan implements the carbon budgets and sectoral emissions ceilings and sets out a roadmap for taking decisive action to halve our emissions by 2030.
- **Circular Economy and Miscellaneous Provisions Act 2022**
  - Incentivises the use of reusable and recyclable alternatives to a range of wasteful single-use disposable packaging and other items.
  - Re-designates the existing Environment Fund as a Circular Economy Fund, which will remain ring-fenced to provide support for environmental and circular economy projects.
  - Introduces a mandatory segregation and incentivised charging regime for commercial waste, similar to what exists for the household market. This will increase waste separation and support increased re-cycling rates.
  - Places the Circular Economy Strategy and National Food Loss Prevention Roadmap on a statutory footing, establishing a legal requirement for governments to develop and periodically update these 2 policies.
  - Streamlines the national processes for End-of-Waste and By-Products decisions, tackling the delays which can be encountered by industry, and supporting the availability of recycled secondary raw materials in the Irish market, and
  - Consolidates the government's policy of keeping fossil fuels in the ground – by introducing prohibitions on exploration for and extraction of coal, lignite and oil shale
- **National Policy Statement on the BioEconomy**
- **Ireland's Smart Specialisation Strategy**
- **Food Vision 2030**
- **AgClimatise**
- **Marginal Abatement Cost Curve (MACC)**



CHALLENGES

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- Sustainable food production
- Sustainable food consumption
- Sustainable food Processing & Distribution

11. Bioeconomy

Ireland Bioeconomy Approach

The bioeconomy is the part of the economy which uses renewable resources from agriculture, forestry and the marine to produce food, feed, materials and energy, while reducing waste, in support of achieving a sustainable and climate neutral society.

The Whole of Government Circular Economy Strategy is Ireland's first national circular economy strategy. The Strategy is a key addition to Government's drive to achieve a 51% reduction in overall greenhouse gas emissions by 2030 and to get on a path to reach net-zero emissions by no later than 2050

People employed in the bioeconomy in Ireland and value of the sector:

178.7k

Number of people employed in biomass producing and converting sectors

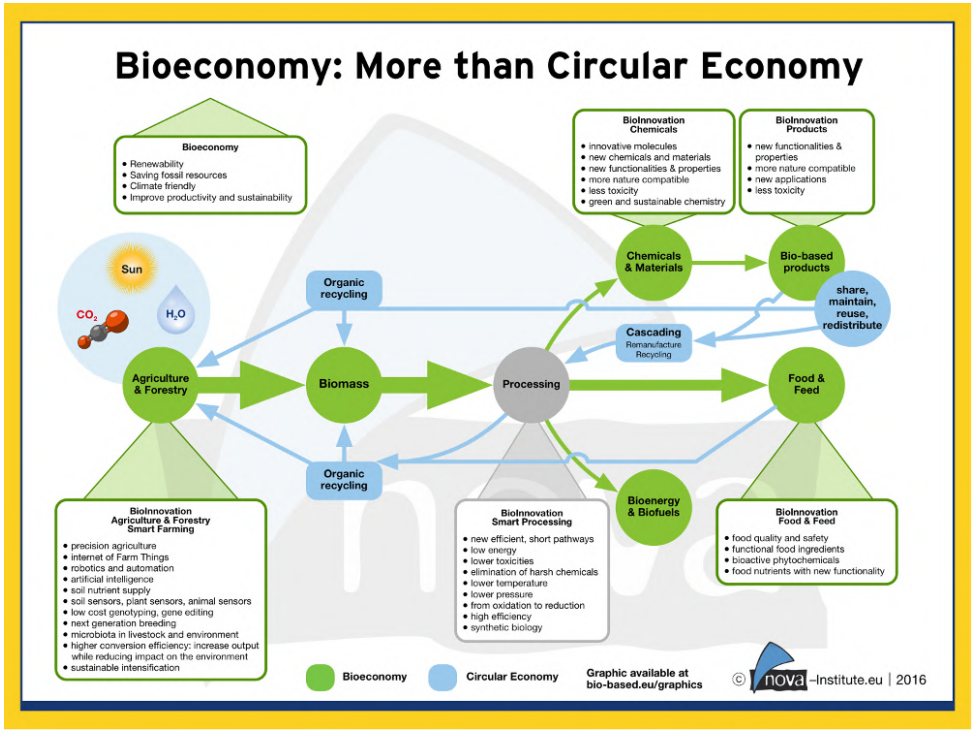
€ 17

Value added of biomass producing and converting sectors (Billion €)

€ 94k

€ 38k EU27

Value added per person employed in biomass producing and converting sectors



The Irish Bioeconomy – Major Components

Flagship Research in Ireland

CHALLENGES

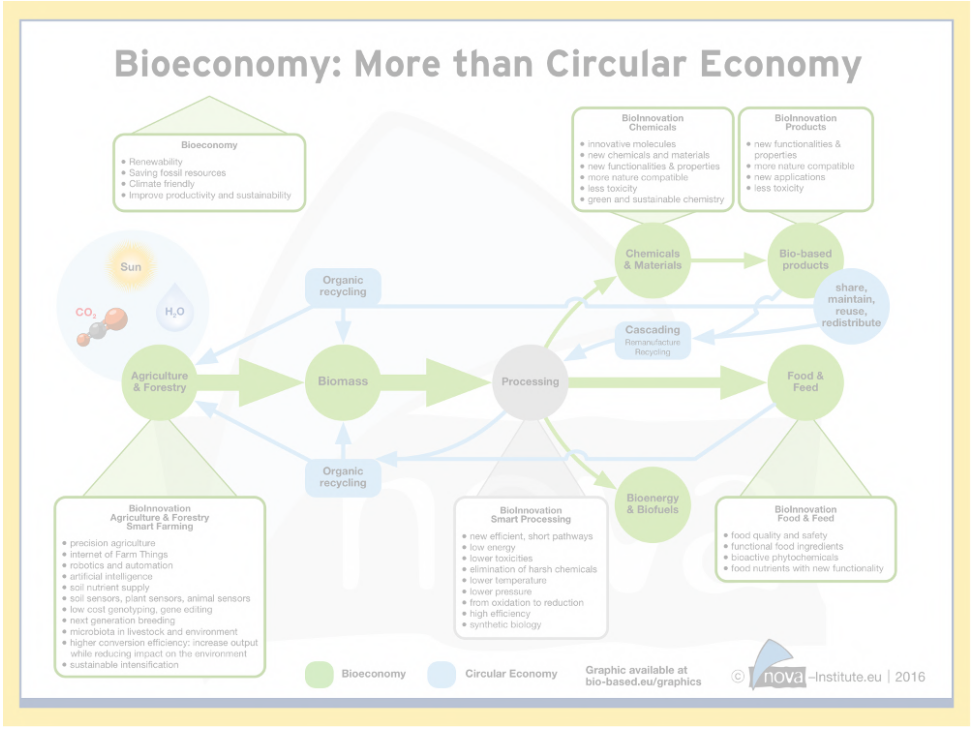
1. Strengthening policy coherence across government with regard to the bioeconomy
2. Establishing a network of commercial entities and public bodies to inform the development of the bioeconomy
3. De-risking engagement in innovation and EU funding opportunities
4. Encouraging the translation of research into real world applications through promoting collaboration between research institutions (academia) and industry, including the use of pilots/demonstrators
5. Addressing barriers to the minimisation and valorisation of organic wastes.

11. Bioeconomy

Ireland Bioeconomy Approach

The Irish Bioeconomy – Major Components

1. **Agriculture, Forestry and Marine**
   - These sectors form a major part of the bioeconomy as they draw on Ireland's natural resources and produce many of the biomass resources upon which Ireland's wider bioeconomy will be based.
2. **Bio-based Materials and Chemicals**
   - Renewable biomass is envisaged to become a major source of inputs for the production of chemicals, plastics, textiles, materials and fuels in the future. This new component of the bioeconomy will depend on the sustainable production and harvesting of biological resources and residual waste flows across multiple sectors, including agriculture, marine, forestry and the waste sector.
3. **Bioenergy and Biofuels**
   - Biomass is likely to become a significant fuel source for the future low carbon economy, at least in the short term. Biomass can be used to produce electricity or thermal energy (bioenergy), or transportation fuels (biofuels). There will, however need to be trade-offs to ensure importing of biomass does not hinder sustainability globally and to manage the demand for biomass for food, high value chemicals and bioenergy.



The Irish Bioeconomy – Major Components

Flagship Research in Ireland

CHALLENGES

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11. Bioeconomy

Ireland Bioeconomy Approach

Bioeconomy: More than Circular Economy

Flagship Research in Ireland

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1. Farm Zero C

Farm Zero C is a collaboration between BiOrbic, Carbery and others to address the challenge of carbon neutral farming. This presents a holistic view of the farm to reduce greenhouse gas emissions and increase the health and resilience of the farm.

A world first for agriculture, BiOrbic, Carbery and their collaborators have undertaken an interdisciplinary programme of work, targeting numerous areas.

SOIL AND GRASSLAND

Capturing carbon within the soil by planting multi-species swards. This allows for reduced use of fertiliser.

ANIMAL DIET AND BREEDING

Trialling different types of diet that change animal digestion, reducing the amount of greenhouse gas emitted through belching.

RENEWABLE ENERGY

Sourcing energy through renewable means where possible to reduce the farm's reliance on carbon emitting fossil fuels.

BIODIVERSITY

Maintaining biodiversity on the farm, taking advantage of ecosystem services for less reliance on pesticides and fertiliser.

LIFE-CYCLE ANALYSIS

Thorough analysis of plant and animal life-cycles on the farm to understand overall carbon emissions.

2. Biorefinery Glas

Biorefinery Glas is a first demonstration of small-scale biorefinery in Ireland, supporting development of new business models and farmer diversification into the circular bioeconomy. Biorefinery Glas is a first step towards changing the role of farmers in the bioeconomy, from suppliers of biomass to producers of finished and semi-finished products.

The project will demonstrate a replicable small-scale biorefinery with farmers in the West Cork Region. Through biorefining, perennial ryegrass is fractionated into a variety of new products in a process which improves the protein efficiency, value and sustainability of our grasslands.

The Project Targets

- a 40% increase in usable protein per hectare
- expects to achieve a 25% reduction in nitrogen emissions in cattle excrement
- additional emissions savings through displacement of soybean feed imports

Grass biorefining will help to create a carbon neutral dairy farm.

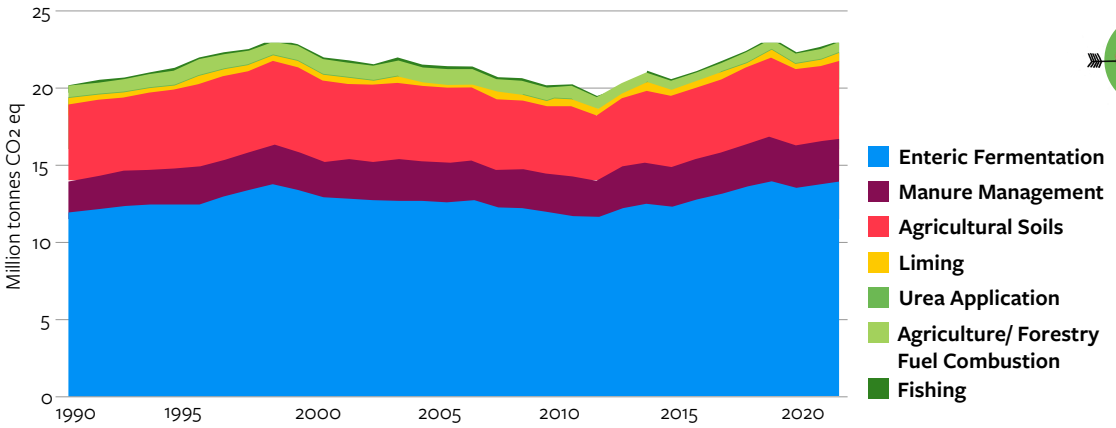
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12. Environmental Drivers

Overview

Trend in Agriculture Emission Source, 1990 – 2021



Source of the Emissions on Farms

In Ireland, agriculture currently contributes **37% of the total GHGs** emitted. GHG emissions on Irish farms come primarily from:

- methane belched by cattle and sheep
- fertiliser use
- animal excrement
- diesel

The latest estimates show that total emissions in the Agriculture sector have **increased by 15.0% from 1990 to 2021** mainly driven by a **17.7% increase** in methane emissions from enteric fermentation and a **29.6% increase** in emissions from manure management.

Water Quality

Target Mitigation Measures for Agriculture

- 23Mt CO_2 Eq - baseline agricultural emissions (2018).
- 25% - overall target reduction (5.75 Mt CO_2 Eq) in agricultural emissions by 2030.
- Biogenic Methane: a reduction of at least 10% by 2030 (on 2018 level).
- Nitrous Oxide: Emissions associated with chemical fertiliser use to reduce by more than 50% by 2030.
- Water Quality: reduce nutrient losses from agriculture to water by 50% by 2030.
- Biodiversity: by 2030, 10% of farmed area will be prioritised for biodiversity, spread across all farms throughout the country.
- Air Quality: Ammonia emissions to reduce to 5% below 2005 levels by 2030.
- Forestry: Increase afforestation from existing levels to at least 8,000 ha per year.
- Double the sustainable production of biomass from forests to 2 million tonnes by 2035.
- Organic Farming: At least 7.5% of utilisable agricultural area is targeted to be farmed organically by 2030.
- Seafood: Achieve 30% of marine protected areas by 2030.
- Food Waste: halve the level of food waste per person by 2030.

Practical targets for farmers

- 20% **reduction in chemical N use.**
- 65% of **CAN replaced by protected urea.**
- 90% of **slurry spread by low-emission slurry spreading.**
- 90% of **dairy herds milk recording.**
- 70% of **suckler herds weight recording.**
- 3 month **reduction in age at slaughter.**
- 1.6Twh **biomethane injected into gas grid.**
- Diversification of farming systems/income streams.

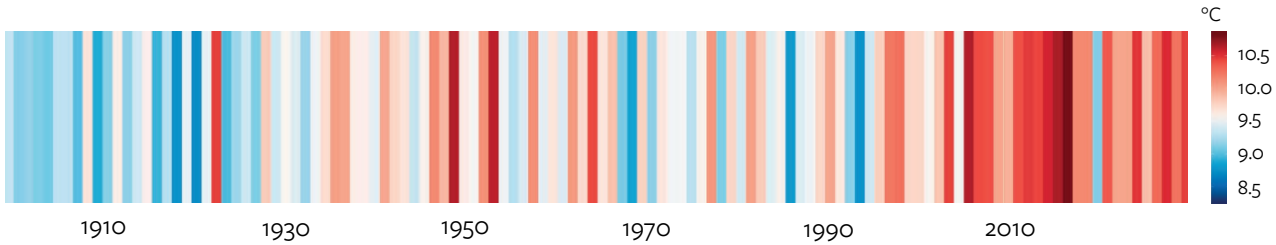
CHALLENGES

1. Monitoring and enforcement of targets.
2. Scaling activities rapidly across the thousands of farmers.
3. Building capabilities in the sector to support the transition.
4. Leveraging technology to support stakeholders and enable the transition.
5. Collaboration across key departments and organisations.

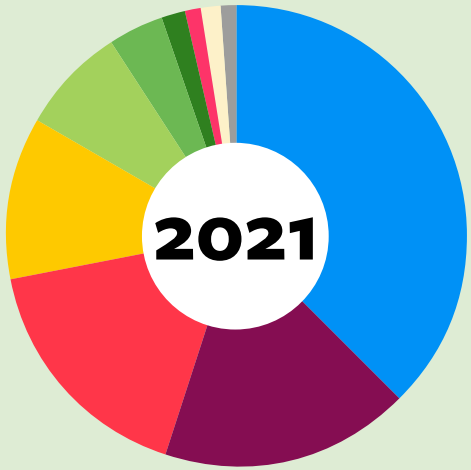
12. Environmental Drivers

Overview

Temperature Change in Ireland since 1901



61.52 Million tonnes CO_2 eq (excl. LULUCF)



- 37.5% **Agriculture**
- 17.7% **Transport**
- 16.7% **Energy Industries**
- 11.4% **Residential**
- 7.5% **Manufacturing Combustion**
- 4% **Industrial Processes**
- 1.5% **Waste**
- 1.3% **Commercial**
- 1.2% **F-Gases**
- 1.1% **Public Services**

3.0%
from 2020 to 2021

Emission growth in Agriculture mainly due to:
- Fertiliser use +5.2%
- Dairy cow numbers + 2.8%
- Milk Production +5.5%

- The trend in greenhouse gas emissions from agriculture is largely determined by the number of livestock and application rates of nitrogen fertilisers.
- Migitating agricultural emissions requires changes in agricultural practices. Limiting application rates of fertilizer would have benefits for climate change and also for water quality.
- As other sectors reduce their total emissions, the proportion coming from agriculture is expected to increase.

Overview Part 2 ▶

CHALLENGES

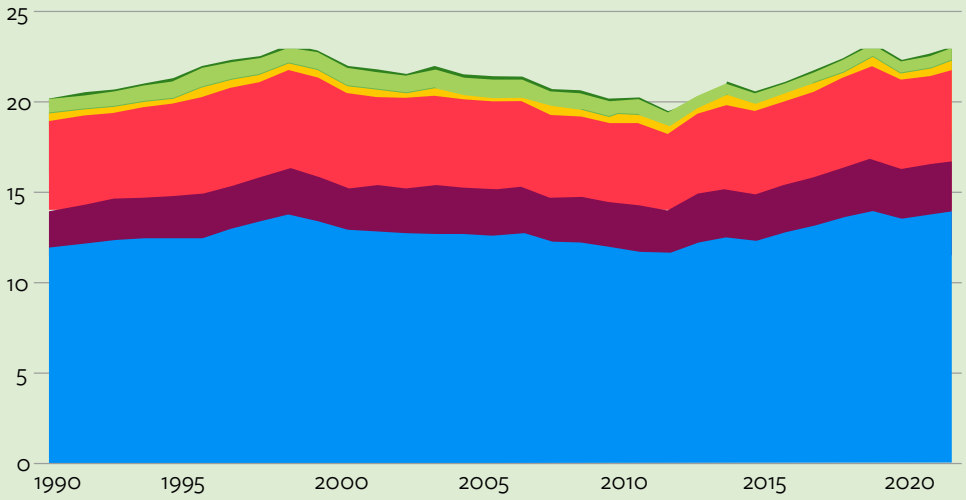
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12. Environmental Drivers

Overview

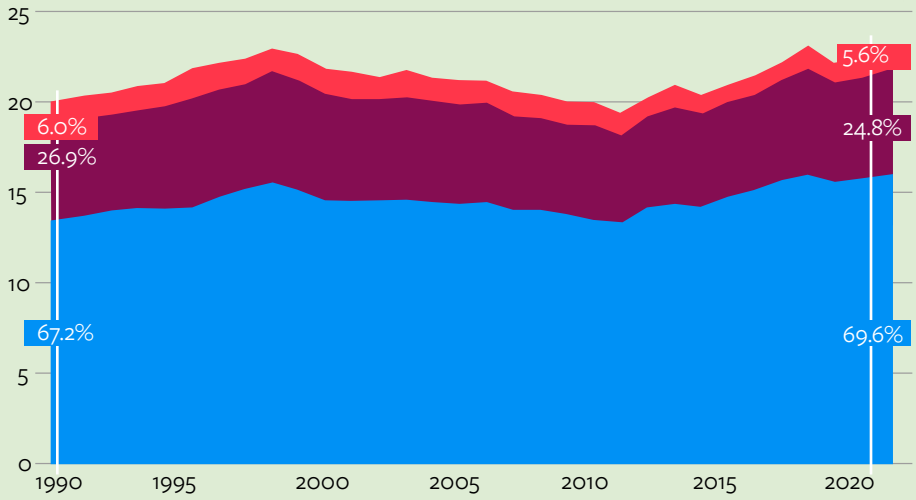
Trend in Agriculture Emission Source, 1990 – 2021

Million tonnes CO_2 eq



- Enteric Fermentation
- Manure Management
- Agricultural Soils
- Liming
- Urea Application
- Agriculture/ Forestry Fuel Combustion
- Fishing

Trend in Agriculture Emission by GHG Type, 1990 – 2021



There are three main GHGs:

- methane (CH_4)
- nitrous oxide (N_2O)
- carbon dioxide (CO_2)

While CO_2 is released mostly from burning fossil fuels, for agriculture, the main GHGs are methane and nitrous oxide.

Overview Part 1

CHALLENGES

1. Monitoring and enforcement of targets.
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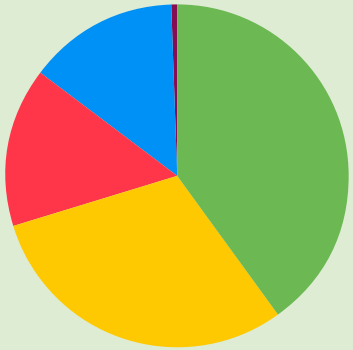
12. Environmental Drivers

Water Quality

Overall, our water quality has declined. The number of water bodies in satisfactory condition in our estuaries and coastal waters has declined by almost 16 percent and 10 percent respectively since the last assessment (2013-2018).

The main causes are:

- Run-off of nutrients, sediment and pesticides from agricultural lands and farmyards.
- Activities such as land drainage, navigational dredging and the presence of barriers such as dams, weirs or culverts in water courses.
- Discharges of poorly treated sewage from urban waste water treatment plants, domestic treatment systems and storm water overflows.
- Run-off of nutrients and sediment from forestry operations.



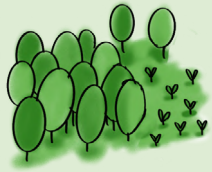
- 14% **High**
- 40% **Good**
- 30% **Moderate**
- 15% **Poor**
- 0.4% **Bad**

When nutrients such as nitrogen and phosphorus enter our waterways they cause an increase in the growth of plants and algae.
This in turn clogs up our water courses, uses up oxygen and harms other aquatic life such as insects and fish.

The percentage of impacted water bodies affected by different activities.
Some water bodies are affected by more than one activity



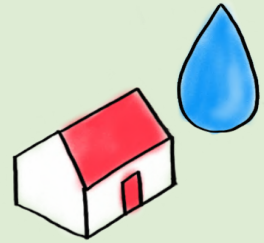
63%
Agriculture



14%
Forestry



7%
Peat Harvesting



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13. Enabling Environment

Origin Green

Origin Green is Ireland's pioneering food and drink sustainability programme, operating on a national scale, uniting government, the private sector and the full supply chain from farmers to food producers and right through to the foodservice and retail sectors.

The programme is the worlds' only national food and drink sustainability programme, and enables the industry to set and achieve measurable sustainability targets that respect the environment and serve local communities more effectively.

Verified Origin Green members account for 90% of our food and drink exports and over 70% of our domestic retail market.

The programme collaborates with:



55,000
Farms



over
300
Leading Irish Food and Drink Companies

Progress under Origin Green

Over a five-year period under Origin Green

- over 290,000 carbon assessments took place on beef and dairy farms.
- Farms that joined the Sustainable Beef and Lamb Assurance Schemes in 2014 saw an average of **6.3% reduction in CO_2** per unit of beef produced by year end 2019.
- Farms that joined the Sustainable Dairy Assurance Schemes in 2014 saw an average of **6% reduction in CO_2 per unit of milk** produced to year end 2019.
- Data for 2016–2021 shows that this **progress has stagnated**.

Origin Green Topics that Farmers are measured against:

- Greenhouse gas emissions
- Biodiversity
- Water use
- Energy efficiency
- Soil management
- Socio-economic factors

Origin Green Topics that Food Businesses are measured against:

- Supplier Sustainability Certification, Supplier Initiatives & Packaging.
- Manufacturing processes & operations (energy-water-waste-emissions-biodiversity).
- Social sustainability (health & nutrition-community initiatives-employee wellbeing diversity & inclusion).

Bord Bia Quality Mark

The European Green Deal

CHALLENGES

1. The streamlining of on-farm audits to reduce the burden on Primary Producers.
2. The Standardisation of Quality Assurance Schemes and Metrics across the different Value Chain stakeholders.
3. Change the current focus on Emission Intensity to a Total Emissions focus.

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Origin Green Topics that Farmers are measured against:

Bord Bia Quality Mark

X

Around **50,000 farmers** and **over 100 processors** are accredited to the Bord Bia Quality Assurance Schemes. The Quality Mark can be used on red meat, poultry, eggs, fruit/vegetables and plants.

Values embodied:

- Farmed with care
- Trust it
- Safe

Bord Bia Quality Mark

The European Green Deal

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The European Green Deal

The European Commission adopted a set of proposals to make the EU's climate, energy, transport and taxation policies fit for reducing net greenhouse gas emissions by **at least 55% by 2030**, compared to 1990 levels.

The EU's goals for the Food sector are:

- to ensure food security in the face of climate change and biodiversity loss.
- reduce the environmental and climate footprint of the EU food system.
- strengthen the EU food system's resilience.
- lead a global transition towards competitive sustainability from farm to fork.

The EU Farm to Fork Strategy aims to accelerate our transition to a sustainable food system that should:

- have a neutral or positive environmental impact.
- help to mitigate climate change and adapt to its impacts.
- reverse the loss of biodiversity.
- ensure food security, nutrition and public health, making sure that everyone has access to sufficient, safe, nutritious, sustainable food.
- preserve affordability of food while generating fairer economic returns, fostering competitiveness of the EU supply sector and promoting fair trade.



diversity & inclusion).

Bord Bia Quality Mark

The European Green Deal

CHALLENGES

1. The streamlining of on-farm audits to reduce the burden on Primary Producers.
2. The Standardisation of Quality Assurance Schemes and Metrics across the different Value Chain stakeholders.
3. Change the current focus on Emission Intensity to a Total Emissions focus.
4. To ensure the implementation of the changes needed to enable the Transition to a Climate Neutral Land-Agri-Food sector in Ireland in the required timeframe.

14. Food System Outcomes



Food Vision 2030

- Current 10 year strategy for the agri-food sector
  - Revised every five years
- Overall aim to be a world leader in sustainable food systems by 2030.
- Four missions agreed by sector stakeholders.



2050 Vision

- Aim for a climate neutral economy by 2050.
- No long term dialogue/planning in place to develop a vision for what the sector will be like in 2050 or for how this might be achieved.

MISSION 1

A Climate Smart, Environmentally Sustainable Agri-Food Sector

- **Goal 1:** Develop a Climate Neutral Agri-Food System by 2050.
- **Goal 2:** Restore and Enhance Biodiversity.
- **Goal 3:** Protect High Status Sites and Contribute to Achieving Good Water Quality and Healthy Aquatic Ecosystems.
- **Goal 4:** Develop Diverse, Multi-Functional Forests.
- **Goal 5:** Enhance the Environmental Sustainability of the Seafood Sector.
- **Goal 6:** Embed the Agri-Food Sector in the Circular, Regenerative Bioeconomy.
- **Goal 7:** Strengthen Origin Green and other Sustainability Supports to Reflect the Higher Level of Ambition for the Agri-Food Sector.

MISSION 2

Viable and Resilient Primary Producers, with Enhanced Well-Being

- **Goal 1:** Improve the Competitiveness and Productivity of Primary Producers.
- **Goal 2:** Improve the Creation and Equitable Distribution of Value.
- **Goal 3:** Increase Primary Producer Diversification & Resilience.
- **Goal 4:** Improve the Social Sustainability of Primary Producers.

MISSION 3

Food which is Safe, Nutritious and Appealing; Trusted and Valued at Home and Abroad

- **Goal 1:** Prioritise Coherent Food and Health Policies to Deliver Improved Health Outcomes.
- **Goal 2:** Enhance Consumer Trust in our Food System, Providing Evidence of a Safe, Ethical Food Supply.
- **Goal 3:** Create Value Add in Food Through Insight, Innovation and Product Differentiation.
- **Goal 4:** Develop Market Opportunities at Home and Abroad.

MISSION 4

An Innovative, Competitive & Resilient Agri-Food Sector, Driven by Technology and Talent

- **Goal 1:** Move to a Challenge-Focused Innovation System.
- **Goal 2:** A Strategic Funding Approach for Research, Development and Innovation.
- **Goal 3:** Develop a Dynamic Knowledge Exchange Environment.
- **Goal 4:** Enhance the Use of Technology and Data.
- **Goal 5:** Maintain and Improve Competitiveness and Resilience.
- **Goal 6:** Attract and Nurture Diverse and Inclusive Talent.
- **Goal 7:** Policy Coherence in Sustainable Food Systems between Ireland's Domestic Policy and its Development Cooperation and Foreign Policy.

CHALLENGES

1. Accountability for implementing recommendations of Food Vision 2030.
2. There is no agreed definition of a sustainable food system in Ireland as yet.
   > Similarly there is no definition of a sustainable farm in Ireland as yet.
3. Baselines and targets have not been set for all indicators.
   > This is a work in progress.
4. Discussion on what the marine/land/agri food sector will look like in 2050 and what this will mean for the various stakeholders in the system has not yet started.

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