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

GLOBAL RESEARCH ALLIANCE ON AGRICULTURAL GREENHOUSE GASES

The Role of Science in Shaping Policy:

The Irish Experience

GRA LRG Annual Meeting, Berlin, 24th October 2024

Today

1. Research into Policy: Challenges

2. What can we do address this, including our experience

3. Ireland's agri-climate challenge and our research response

4. Examples of research to policy and practice

5. Concluding thoughts

Research into Policy: Challenges

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The Challenge

"The world is moving at unprecedented speed….**fundamental changes** are unfolding: the change in technology which is triggering a societal transformation; climate change which is increasingly urgent; and the geopolitical shift from West to East……these changes are accompanied by **wicked problems & unexpected effects**, as well as potential benefits. The time is short and stakes high.

Evidence, in particular sound scientific evidence, is badly needed to inform policymaking. Science is however not fully ready. It is struggling to cope with the change. It is too entrenched in thematic **silos**, challenged by its own integrity problems, and very often **alienated from society**. All of this, together with the **explosion of data**, in particular fake data, has created a toxic mix, which sometimes results in post-fact policy decisions and distrust of experts"

JRC, 2020

The Challenge

- "**Policymaking is not a regular and linear cycle**"

- "Policy problems are of a different category to scientific problems because they not only have an analytical, scientific dimension, but also a **normative, values-related** one"

- "**Balancing act** between societal values, political priorities, competing interests and scientific knowledge making up evidence"

- "**Continuous interactions** and even then, the final role for evidence in the debate and the decision is far from predictable"

What can we do to improve research into policy?

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Research for public policy and society: building a stronger architecture for Ireland

Mary Doyle

DISCUSSION PAPER

Science for Policy Handbook

Edited by
Vladimír Šucha and Marta Sienkiewicz

ELSEVIER

RIA Research for Public Good (Mary Doyle, Dec. 2020)

For researchers and their institutes:

1. Stronger emphasis on relationship with policymaking as core part of mission
2. Support researchers to engage with policy making system through mentoring and coaching
3. Are there incentives and rewards for researchers to engage in the policy world

For Government Ministries:

1. Statements of Strategy, or other Strategy, should point to the research priorities so that the research community are clear
2. Develop policy capacity – secondments

For funders:

1. Ensure research calls require multi-disciplinary collaboration
2. Support all research career stages
3. Include mechanisms to support connections between research and policy

Research > Policy – Our Experience

- Fortunate to have close researcher – policy, and researcher - advisory relationship, high levels of trust, Universities and Teagasc key
- Ongoing regular engagement (CI, CVO, ~378 in scientific stream, ~300 vets)
- Research Call spec's are heavily influenced by policy, including a specific Research to Policy programme (PSSRC)
- Applications must have Knowledge Transfer Plan (outputs, stakeholders, activities) & Impact Statement
- DAFM officials on project oversight boards; Interim and Final project meetings and webinars
- Working groups regularly bring researchers and policymakers together to analyse and co-create
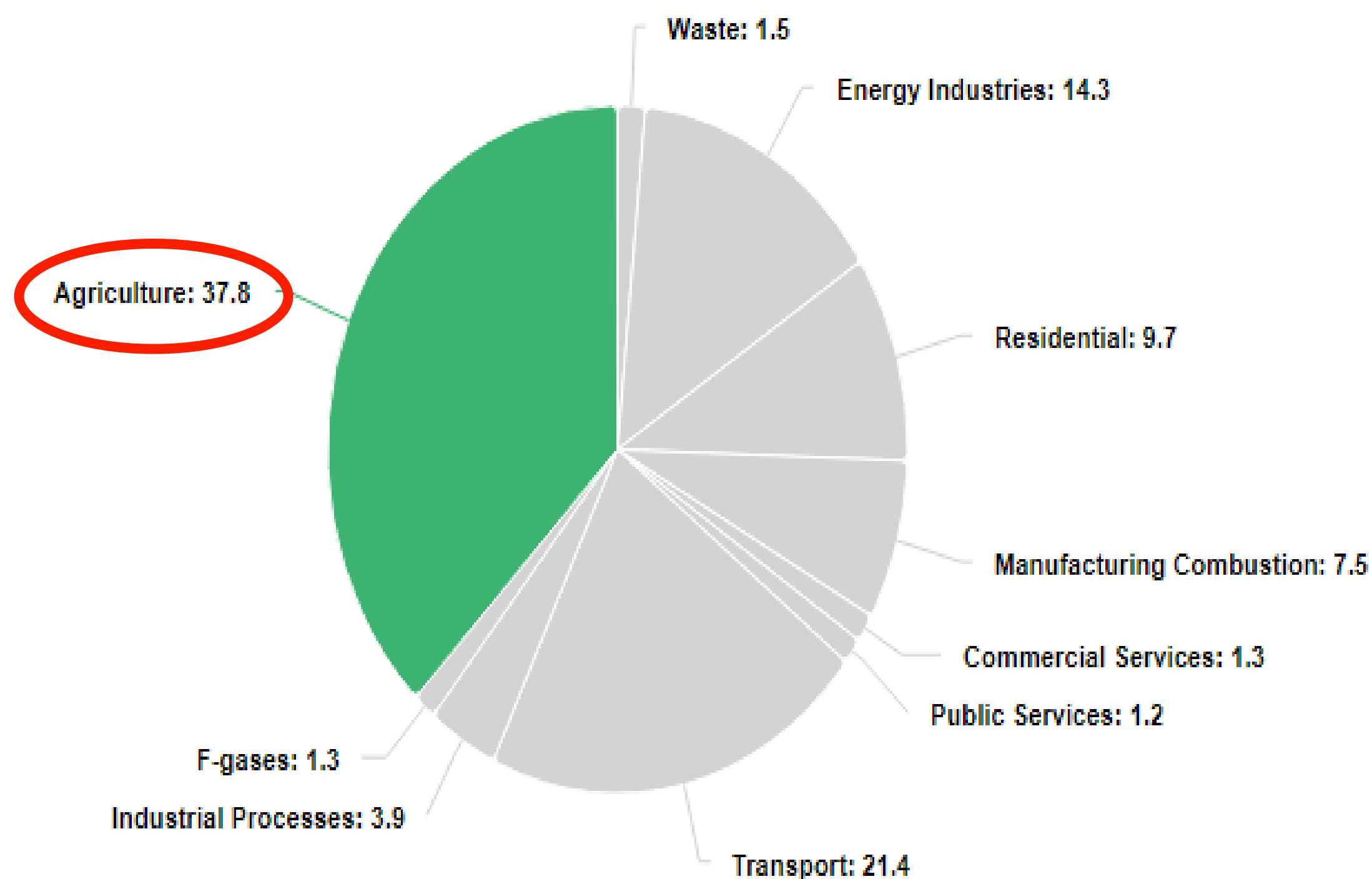- CAP Rural Network

Irelands Agri Climate Challenge

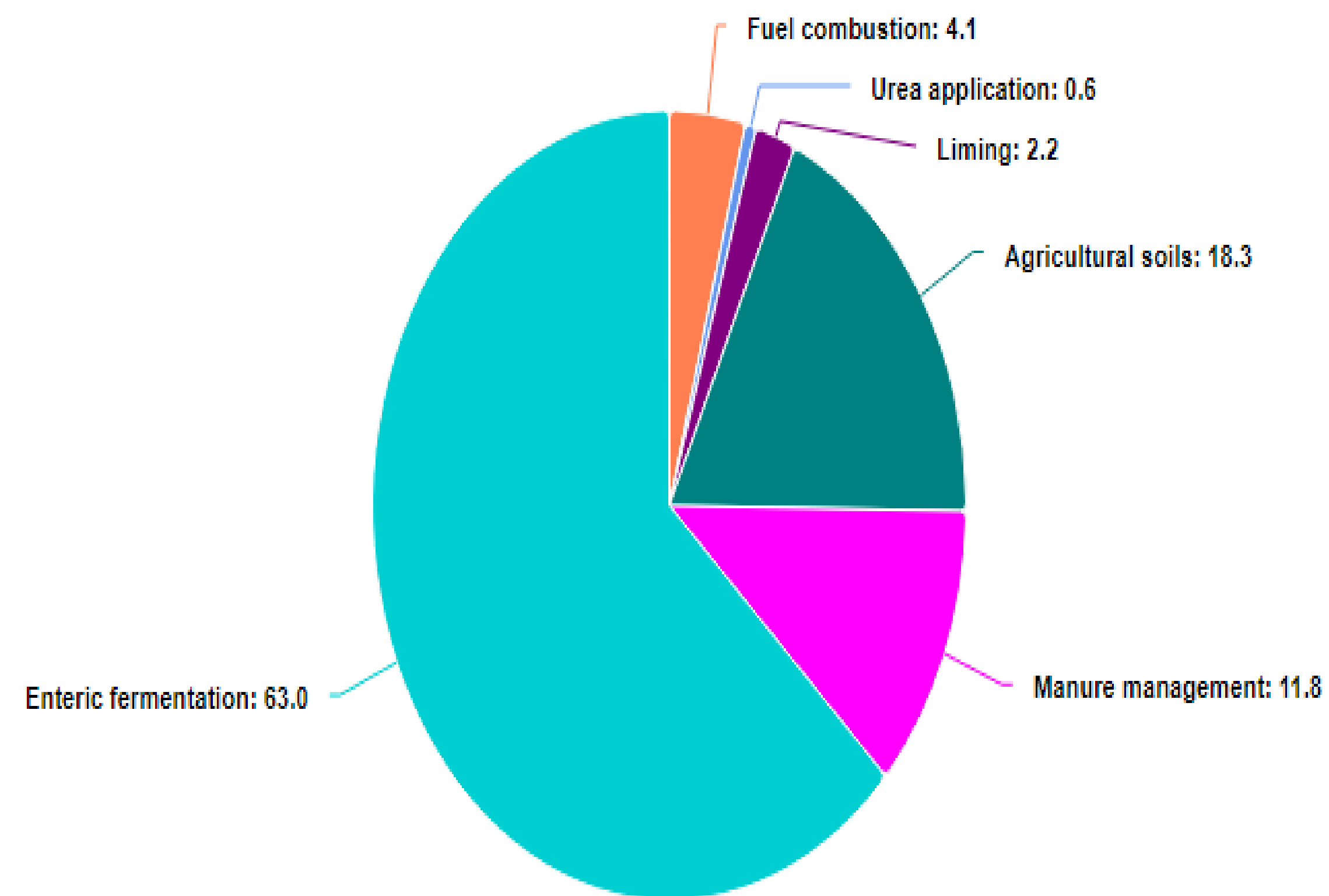**An Roinn Talmhaíochta, Bia agus Mara** | Department of Agriculture, Food and the Marine

Our Agricultural GHG Profile

Agriculture was responsible for 37.8% of greenhouse gas emissions in Ireland in 2023

Agriculture sector emissions share 2023

- Waste: 1.5
- Energy Industries: 14.3
- Residential: 9.7
- Manufacturing Combustion: 7.5
- Commercial Services: 1.3
- Public Services: 1.2
- Transport: 21.4
- Industrial Processes: 3.9
- F-gases: 1.3
- Agriculture: 37.8

Agriculture GHG emissions share by source 2023

- Fuel combustion: 4.1
- Urea application: 0.6
- Liming: 2.2
- Agricultural soils: 18.3
- Manure management: 11.8
- Enteric fermentation: 63.0

Our Agricultural Climate Targets

- Climate Action Plan:
    - 51% reduction in GHGs by 2030 (relative to 2018)
    - **Agriculture reduce emissions -25% by 2030**
    - Land-use Land-use change and Forestry - 626kTCO2e 2030
    - Climate neutral 2050 "a sustainable economy and society where greenhouse gas emissions are balanced or exceeded by the removal of greenhouse gases"

Climate Research

- Typically ~40% of annual research budget
- International dimension important
- DAFM support: 21% of all public good climate research in IE
- Climate research investment +60% since 2020

Examples of Research > Policy

1. Liming & Soil P

o Liming that results in optimal soil pH compared to an un-limed soil: 38% reduction in cumulative emissions

o   Optimal soil phosphorous level compared to a low level: 42% reduction in cumulative nitrous oxide emissions

MACC 2023:

An Updated Analysis of the Greenhouse Gas Abatement Potential of the Irish Agriculture and Land-Use Sectors between 2021 and 2030

Prepared by Teagasc Climate Centre

Gary J. Lanigan, Kevin Hanrahan & Karl G. Richards (eds.)

Contributing Authors:

Gary Lanigan[1], Kevin Black[2], Trevor Donnellan[1], Paul Crosson[1], Ciara Beausang[1], Kevin Hanrahan[1], Cathal Buckley[1], Ben Lahart[1], Jonathan Herron[1], John Redmond[3], Laurence Shalloo[1], Dominika Krol[1], Patrick Forrestal[1], Niall Farrelly[1], Donal O'Brien[1], J.J. Lenehan[1], Michael Hennessy[1], Michael O'Donovan[1], David Wall[1], Lilian O'Sullivan[1], Tom O'Dwyer[1], Mike Dineen[1], Sinead Waters[1], Nuala NiFlahartha[1], Pat Murphy[1], John Spink[1], Pat Dillon[1], John Upton[1], Karl Richards[1]
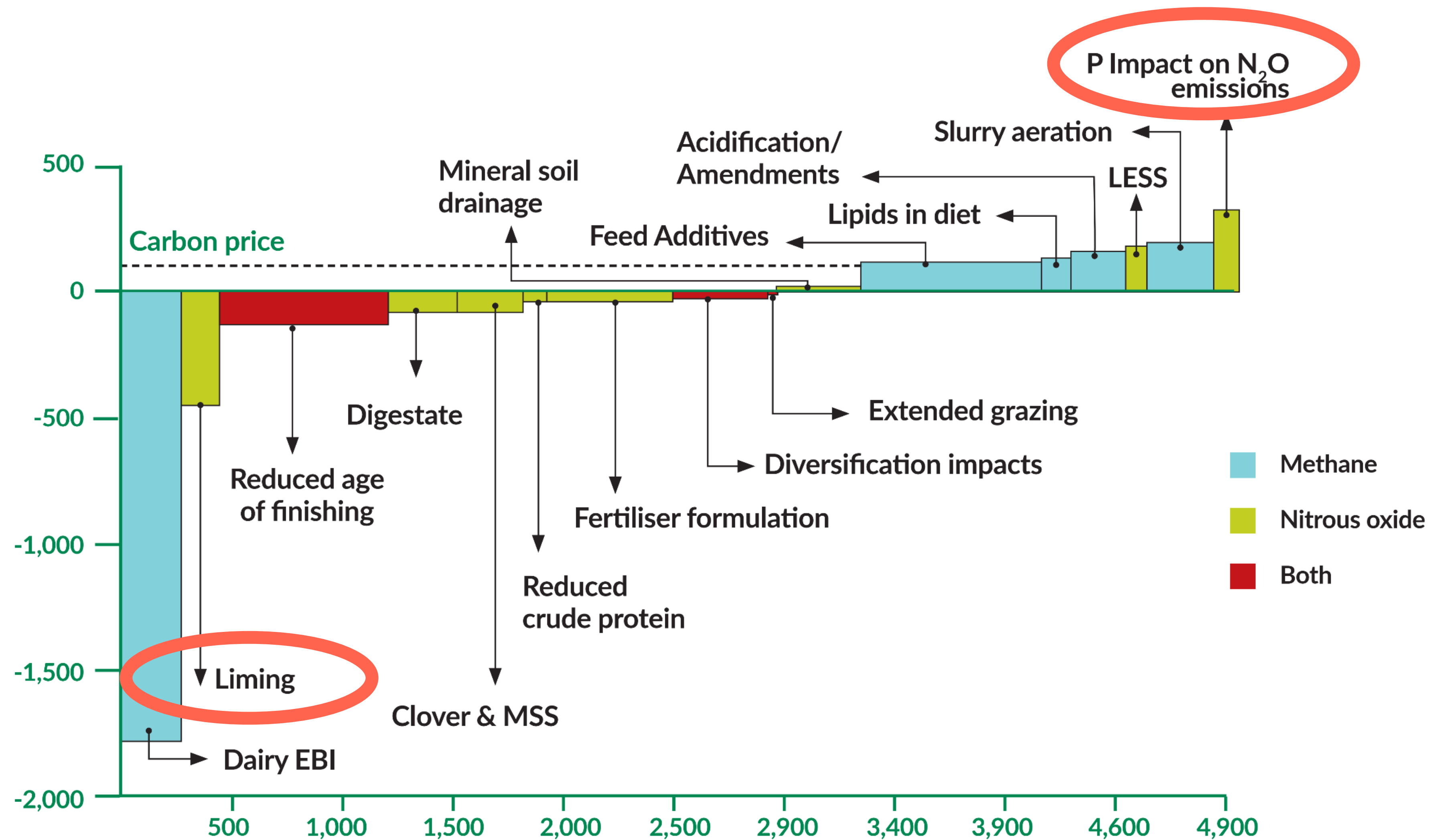
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[3] Forestry Division, DAFM

July 2023

Teagasc, Oak Park, Carlow

Teagasc
AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

Agricultural Mitigation -MACC

IRISH FARMERS JOURNAL

BEEF DAIRY SHEEP AGRIBUSINESS MACHINERY TILLAGE PEDIGREE BUILDINGS PROPERTY KNOWLEDGE

SEARCH Q   SUBSCRIBE

New €16/t liming scheme opens for farmers

Minister McConalogue has launched the €8m National Liming [scheme to] pay farmers to spread lime.

Niamh Gunn

NEWS > NEWS

15 March 2023

IRISH FARMERS JOURNAL

BEEF DAIRY SHEEP AGRIBUSINESS MACHINERY TILLAGE PEDIGREE BUILDINGS PROPERTY

SEARCH Q

€10m scheme for soil sampling on farms

Minister for Agriculture Charlie McConalogue launches €10m pilot soil sampling and analysis programme.

Rachel Donovan

NEWS > NEWS

21 September 2021

2. Clover and Multispecies Swards

o MSS: reduce nitrogen fertiliser requirement by 60%, reduce methane output by 12%, animals reach target slaughter weight 35 days earlier, and potential for a 68% increase in net margin compared to conventional perennial ryegrass swards

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July 2023

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IRISH FARMERS JOURNAL

SEARCH 🔍   SUBSCRIBE

BEEF   DAIRY   SHEEP   AGRIBUSINESS   MACHINERY   TILLAGE   PEDIGREE   BUILDINGS   PROPERTY   KNOWLEDGE

Farmers to be paid €50/ac for multi-species sward scheme

The measure aims to establish approximately 12,000ha of multi-species grassland.

Rachel Donovan

NEWS > NEWS

25 March 2022

3. Genetics - EBI

o For every €10 increase in EBI, there was a 0.32% decrease in methane emissions

o 20% highest emitting animals genetically are expected to emit 30% more methane per day compared to the 20% lowest emitting animals

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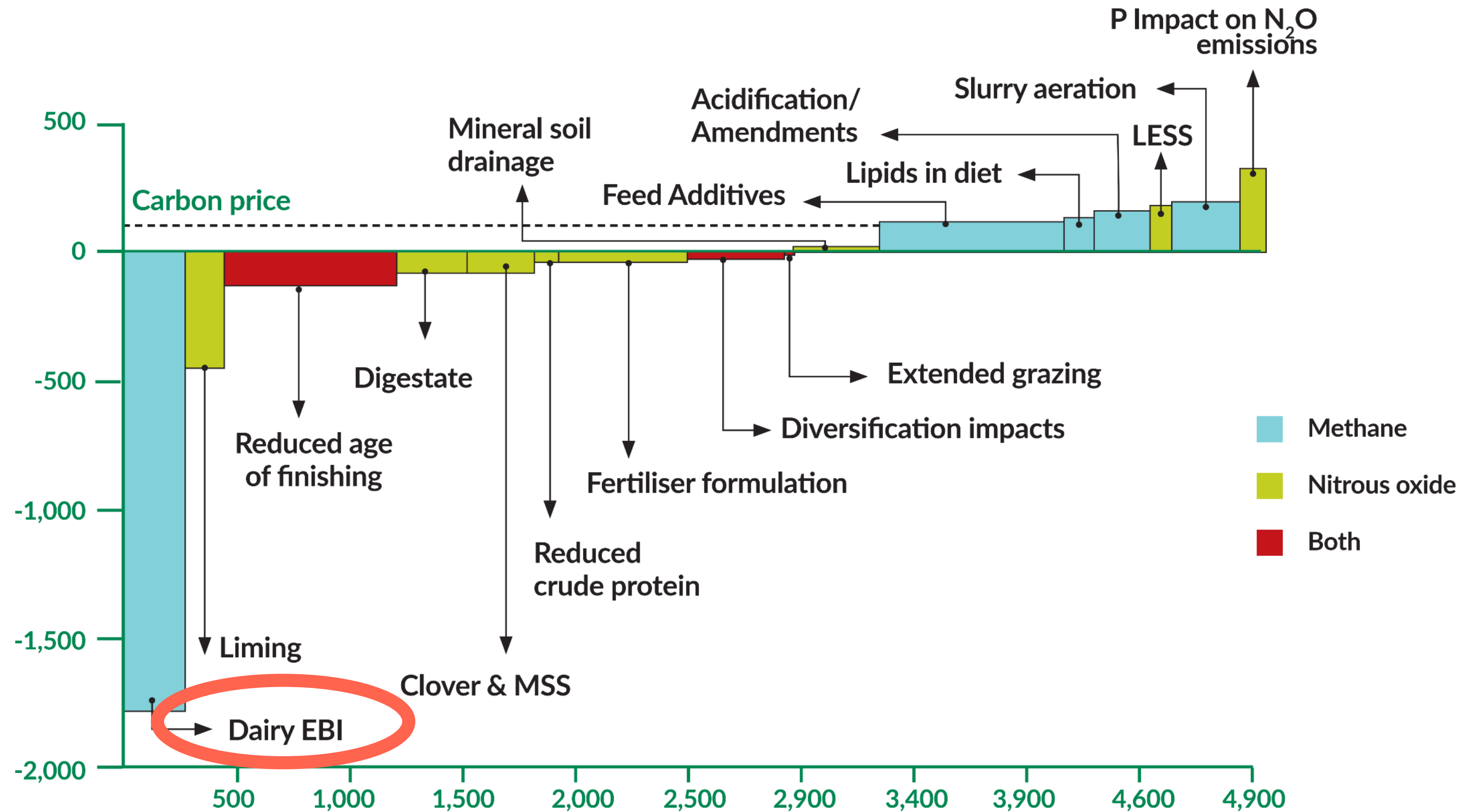
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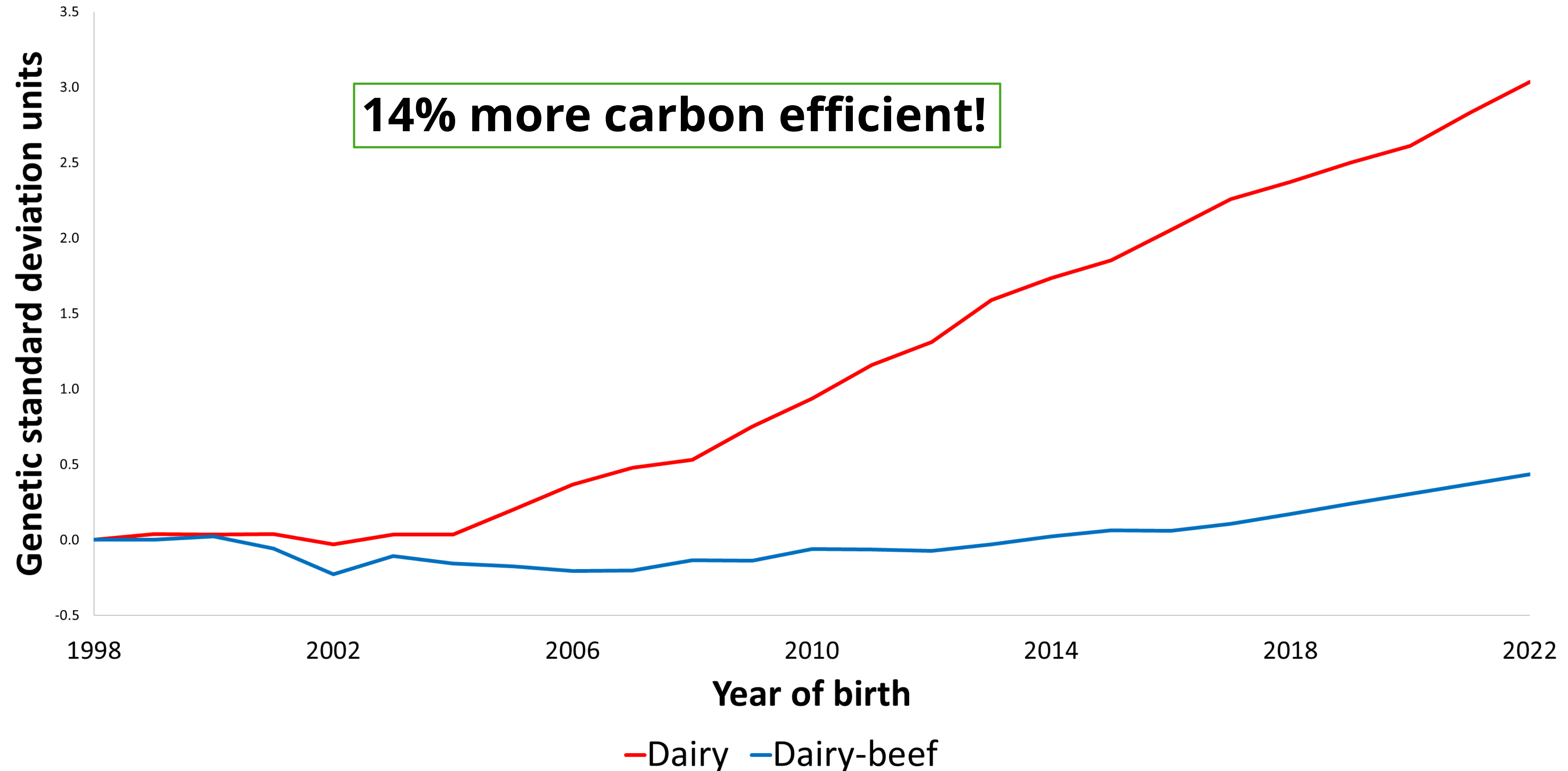[3] Forestry Division, DAFM

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Evolution of the EBI

The power of genetics

14% more carbon efficient!
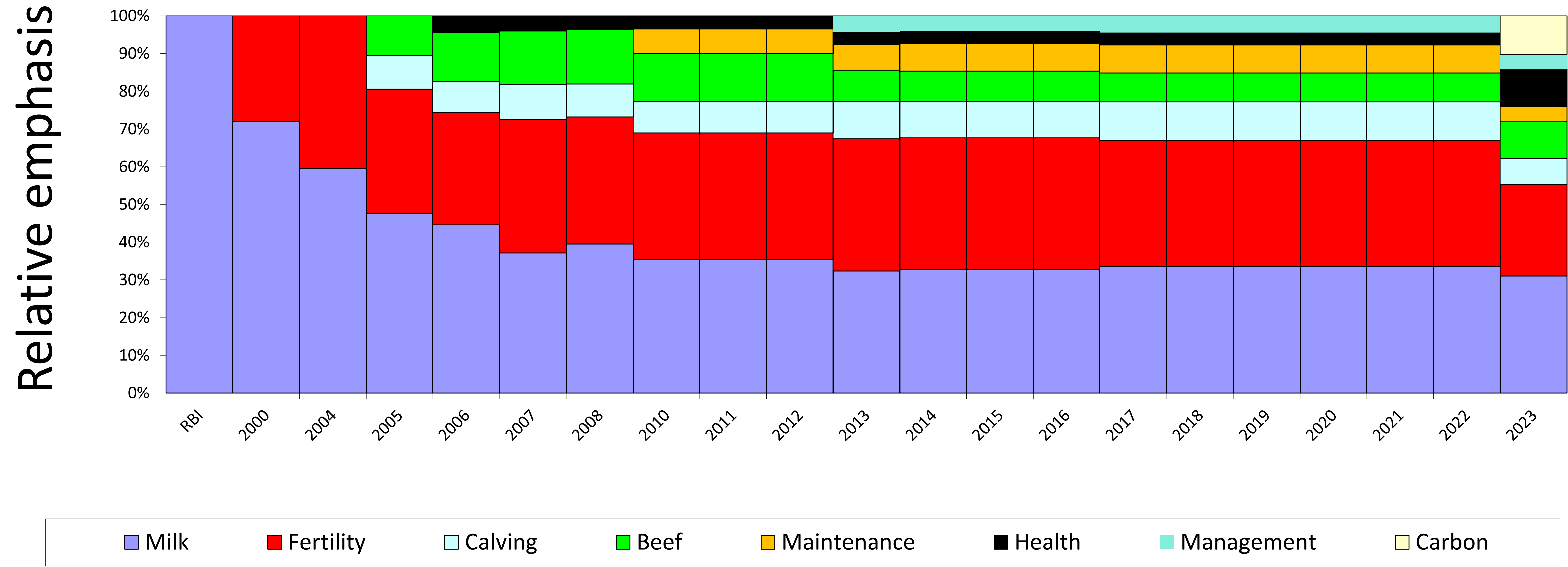
4. Genetics – Sheep Breeding

o   Large differences in daily methane emissions between ewes, with 17% of these traced to genetics

o   Genetically identified highest 20% of emitting animals are expected to emit 15% more methane per day compared to the lowest 20% emitting animals

o   Publication of worlds 2nd national genomic evaluation for CH4 in sheep

o   New CH4 breeding value part of the breeding indexes from 2024

Signpost Advisory Programme

- Launched in July 2023, dedicated advisers
- Aims to provide 50k farmers with a free plan to reduce emissions, support to implement
- Use AgNav to baseline emissions and generate the plan
- 12,149 farmers registered to date, 9,374 with a plan
- >120 demo farms
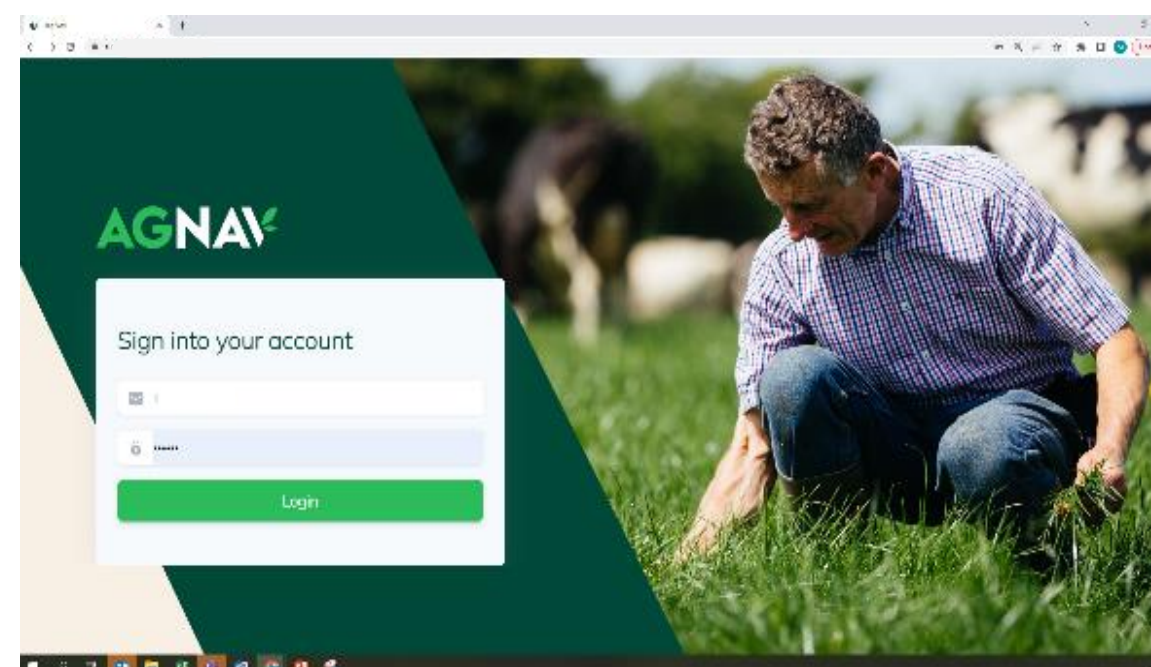
Regulation – Nitrates Action Programme

- Limits to use of chemical fertiliser N
- All farmers with grassland stocking rate above 100kg N/ha have to apply slurry using LESS
- Above 130, all arable, must soil sample
- Max crude protein content 15% in concentrate feed

Rialtas na hÉireann
Government of Ireland

An Overview of Ireland's Fifth Nitrates Action Programme

Communicate

Press release

Ministers host National 'Agriculture and Climate Change: Science in Action' Conference

From Department of Agriculture, Food and the Marine
Published on 15 November 2023
Last updated on 3 January 2024

- 500 delegates from across the agri-food sector come together to hear the latest science and policy developments relating to agriculture and climate change

- announcement of €3.8 million in new research funding for collaborative projects on climate and agriculture, as well as upcoming announcement of €8.8 million of further research funding

Agriculture & Climate Change

Science into Action

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

Concluding thoughts

- Scientific excellence is key
- Need to build and maintain ongoing relationships, trust important
- Proactive, targeted transfer and communication
- Can't operate in silos, multi-disciplinary, be aware of facts v interests v values (the latter are hard to influence with science!)
- Accept political realities & the nature of the policy making cycle
- Policy makers - information overload, working with imperfect data, non-peer reviewed, tight timeframe – make specific recommendations rather than generalities or 'more research'!
- GRA Science to Policy WG - First science to policy communication note on GHG emission metrics for June 2025 Council meeting. WG to develop a process identifying future topics

INTERNET

https://www.gov.ie/en/collection/9bd2a-research-and-codex/

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