

Presentation overview

- Irish agriculture - an overview
- GHG policy context – global, EU and Irish
- Development of a national GHG mitigation programme



The Irish Agriculture and Food Development Authority

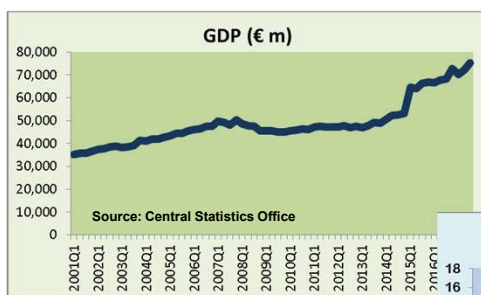
Presentation overview

- Irish agriculture - an overview
- GHG policy context – global, EU and Irish
- Development of a national GHG mitigation programme



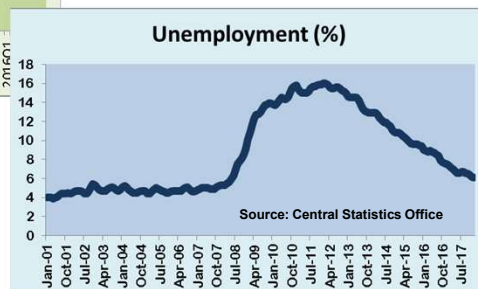
The Irish Agriculture and Food Development Authority

Irish economy has rebounded strongly



- GDP increased 2001 to 2007, decreased during the financial crisis & is now growing rapidly

- Unemployment increased from 4.5% in 2005 to 16% in 2010 and is now at 6%



The Irish Agriculture and Food Development Authority

Agriculture continues to play an important role

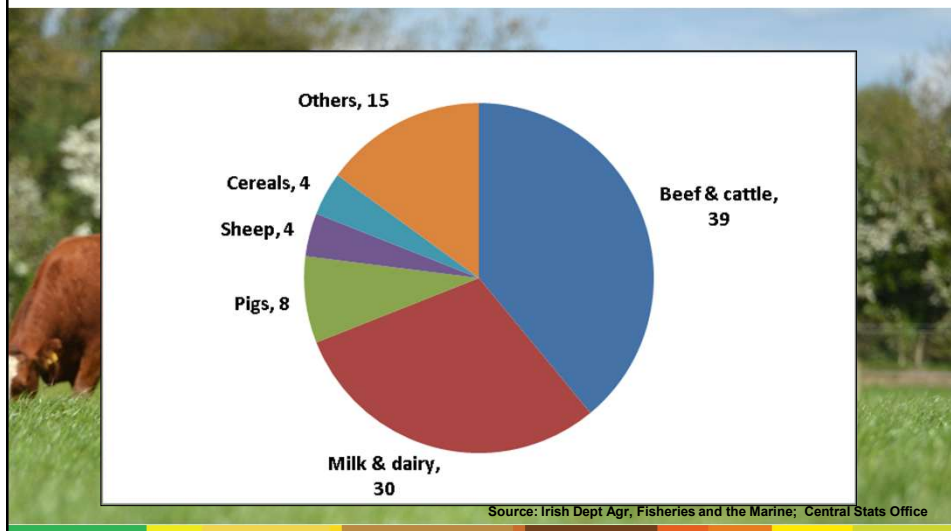
Key Indicators for Primary and Agri-Food Sectors		
	Primary Sector ²	Agri-Food Sector ³
% of GVA at factor cost (2014)	2.4%	7.6%
% of employment (2015 average)	5.5%	8.4%
% of merchandise exports (2015 ⁴)	7.0%	10.7%

- Agriculture accounts for
 - 24% of industry turnover
 - 22% of industry gross output



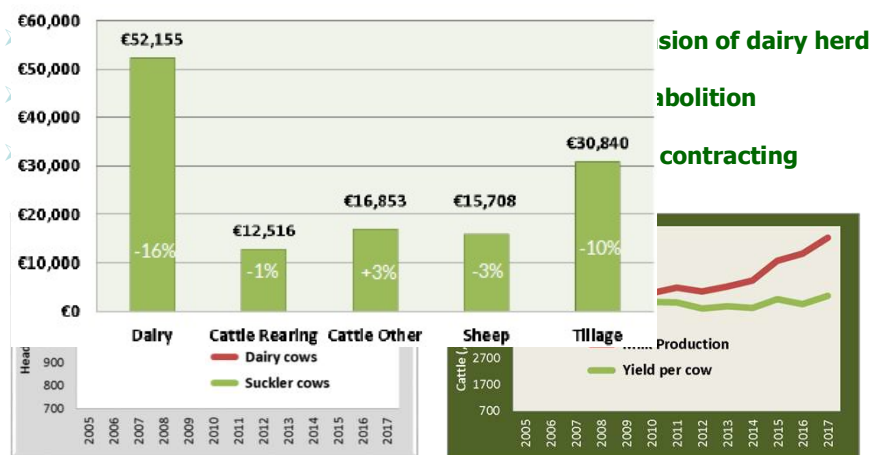
The Irish Agriculture and Food Development Authority

A pasture-based agri-industry



The Irish Agriculture and Food Development Authority

Surge in dairy production



The Irish Agriculture and Food Development Authority

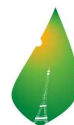
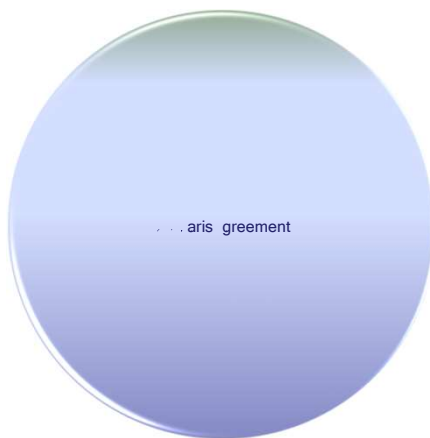
Presentation overview

- Irish agriculture - an overview
- **GHG policy context – global, EU and Irish**
- Development of a national GHG mitigation programme



The Irish Agriculture and Food Development Authority

Policy Actors

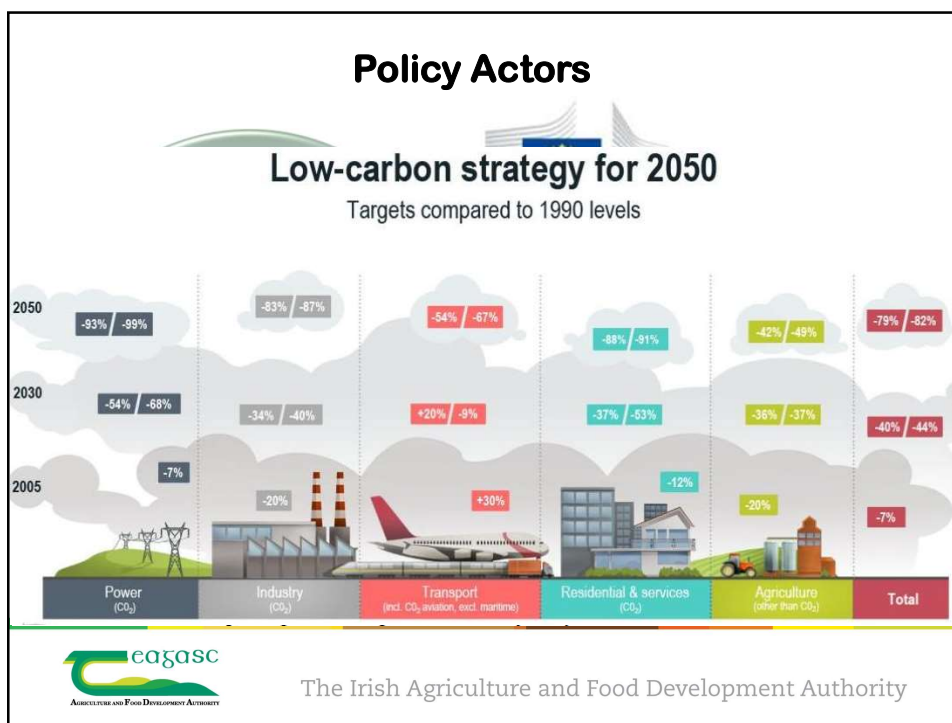


PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21-CMP11

- **Limit global temperature increase to 1.5°C**
- **EU commitment: -40% by 2030 relative to 1990**



The Irish Agriculture and Food Development Authority



Game changer – EU council decision Oct 2014



European Council

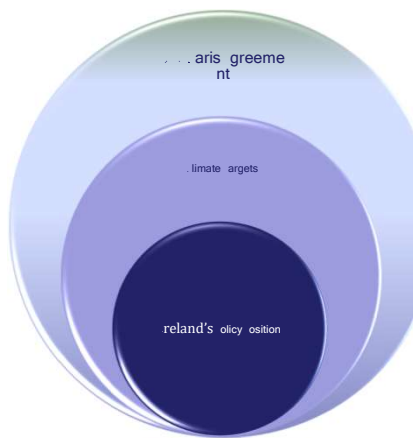
Brussels, 24 October 2014

- 2.14 the multiple objectives of the agriculture and land use sector, with their lower mitigation potential, should be acknowledged, as well as the need to ensure coherence between the EU's food security and climate change objectives. The European Council invites the Commission to examine the best means of encouraging the sustainable intensification of food production, while optimising the sector's contribution to greenhouse gas mitigation and sequestration, including through afforestation. Policy on how to include Land Use, Land Use Change and Forestry into the 2030 greenhouse gas mitigation framework will be established as soon as technical conditions allow and in any case before 2020.



The Irish Agriculture and Food Development Authority

Policy Actors



Position 2014
Reduction by 80% by 2050

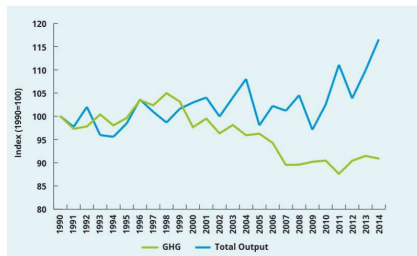
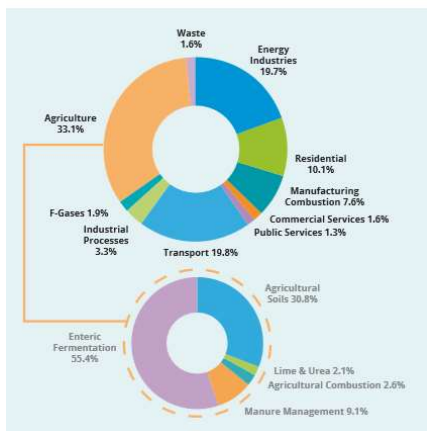
2015
CLIMATE DEVELOPMENT ACT 2015

Development of a mitigation plan and an adaptation framework



The Irish Agriculture and Food Development Authority

Ireland's agricultural GHG emissions profile

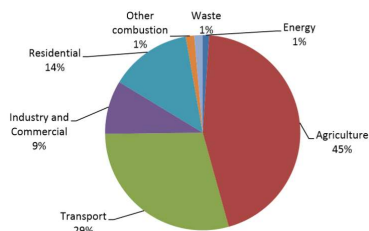


- **Emissions 5%-6% below 1990 levels while output has increased substantially**



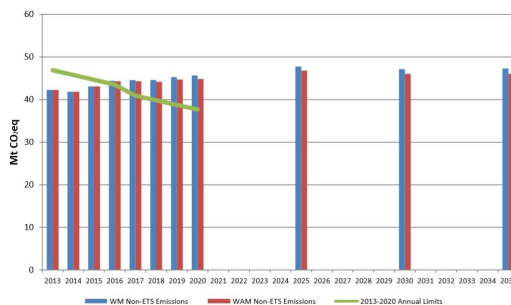
The Irish Agriculture and Food Development Authority

Specific Challenges for Ireland



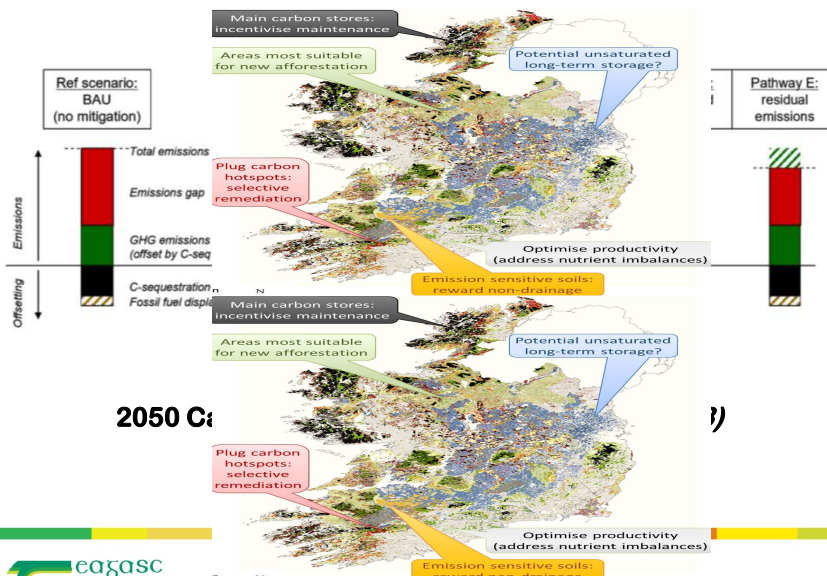
➤ **Agricultural emissions account for 45% of non-ETS sector**

➤ **Emissions from agriculture projected to be 4%-6% below 2005 levels by 2020 (target -20%)**



The Irish Agriculture and Food Development Authority

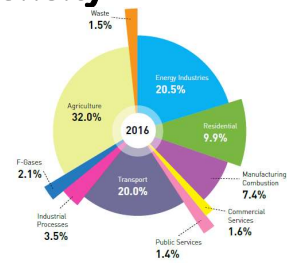
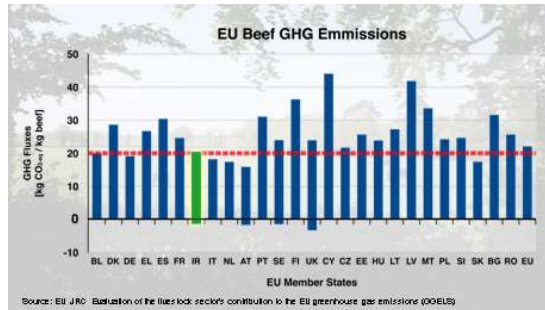
Land-based solutions?



The Irish Agriculture and Food Development Authority

Absolute or Emissions Intensity

- **Total GHG: agriculture accounts for 32% of Irish national emissions (EU = 10%)**



- **Emissions intensity:**
 - lowest dairy and fifth lowest beef within EU**



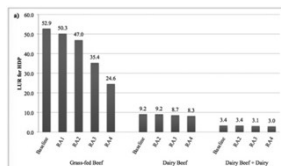
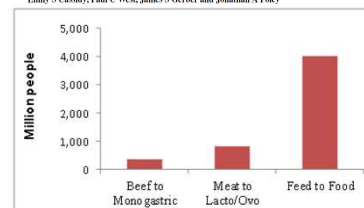
The Irish Agriculture and Food Development Authority

Broader sustainability questions

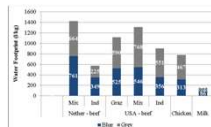
- **“Diet Gap” (West et al., 2014) – human edible calories that does not end up in the food systems**
- **Land occupation, particularly of grazing animals**

Redefining agricultural yields: from tonnes to people nourished per hectare

Emily S Cassidy, Paul C West, James S Gerber and Jonathan A Foley



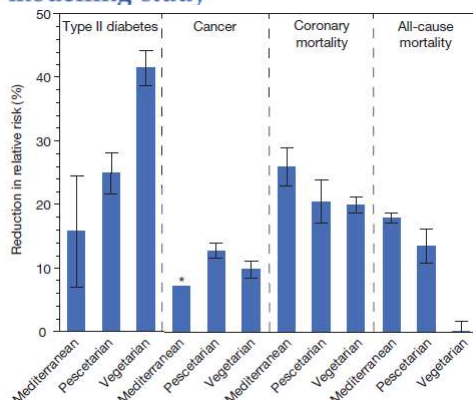
- **Water footprint**



The Irish Agriculture and Food Development Authority

Human health considerations

Impact of a reduced red and processed meat dietary pattern on disease risks and greenhouse gas emissions in the UK: a modelling study



- **Reduction in DALY equivalent to 1% of health losses**
- **Savings of over 3% on GHG emissions**

Global diets link environmental sustainability and human health

David Tilman^{1,2} & Michael Clark¹

- “...plausible solutions to the diet-environment-health trilemma...”



The Irish Agriculture and Food Development Authority

Public perception?

An Tionól Saoránach The Citizens' Assembly

GREEN NEWS.ie

THE IRISH TIMES

Mon, Feb 5, 2016

NEWS SPORT BUSINESS OPINION LIFE & STYLE CULTURE

Environment > Heritage & Habitat | Illegal Dumping | Water Charges

Call for radical change in farming methods to tackle climate challenge

- **89% of the members recommended that there should be a tax on agricultural emissions.**



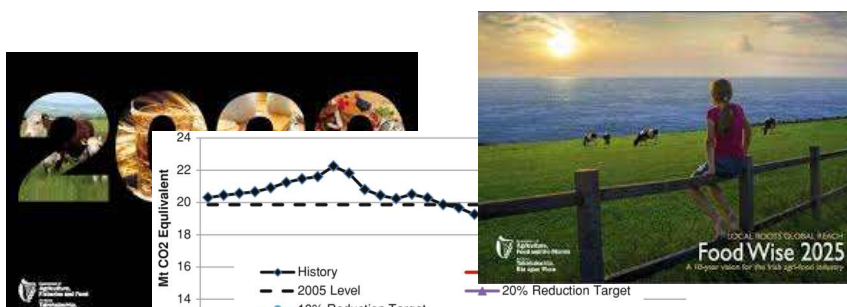
Environmental NGO opens first-ever climate case against Irish Government



The Irish Agriculture and Food Development Authority

Government remains committed to agriculture

- **Food Harvest 2020: increase in milk output 50% & beef value 40%**
- **Food Wise 2025: 65% increase in primary production**

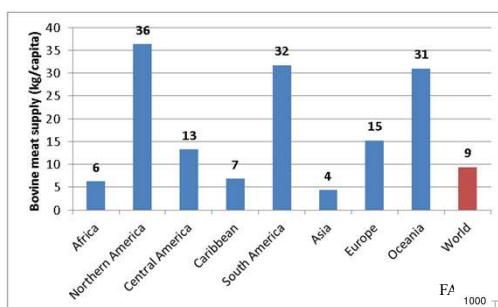


- **National mitigation plan endorses Teagasc's Carbon Neutrality Report**



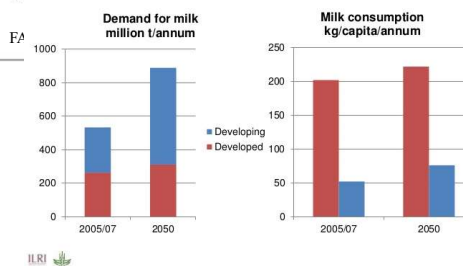
The Irish Agriculture and Food Development Authority

Why grow the Irish dairy and beef industries



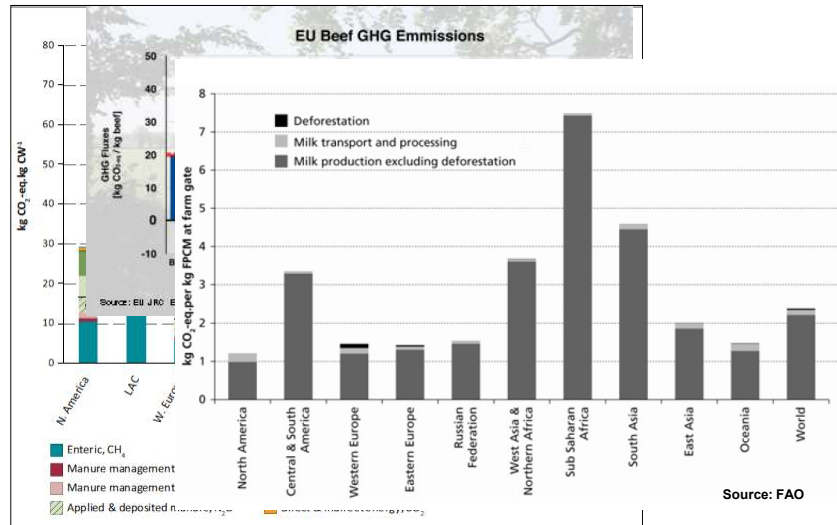
- **Average supply of ~9 kg/capita & consumption of ~6 kg/capita**
- **Projected increase of 73% in meat demand by 2050**

- **Projected increase of 80% in dairy demand by 2050**



The Irish Agriculture and Food Development Authority

As a major exporter, “carbon leakage” is likely



The Irish Agriculture and Food Development Authority

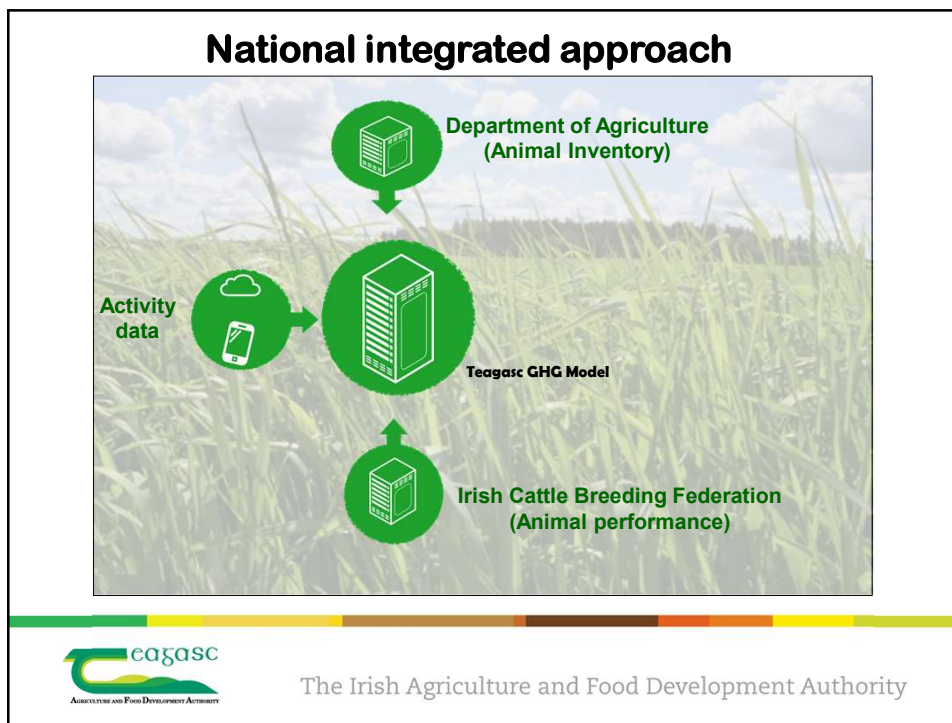
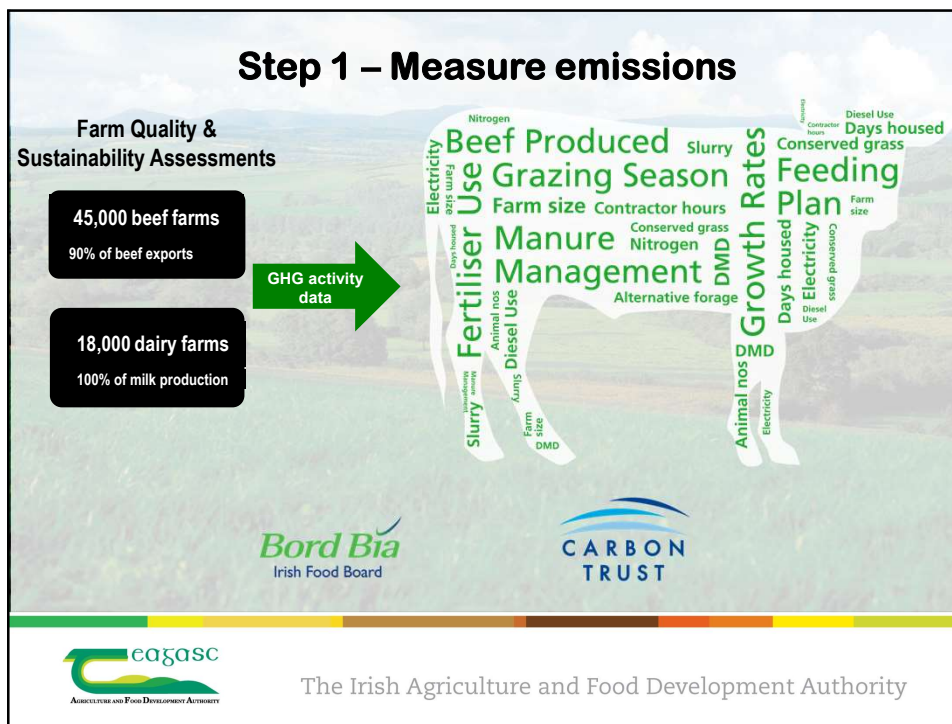
Presentation overview

- Irish agriculture - an overview
- GHG policy context – global, EU and Irish
- Development of a national GHG mitigation programme

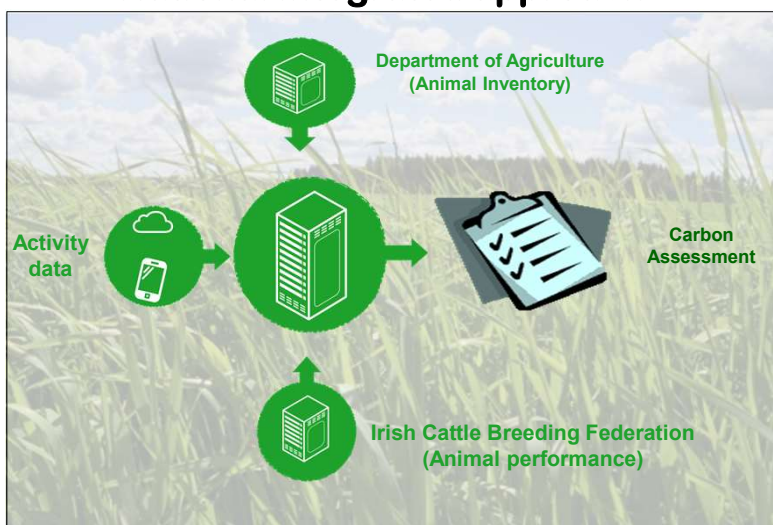
<https://www.youtube.com/watch?v=xtxwmfNwieM>



The Irish Agriculture and Food Development Authority

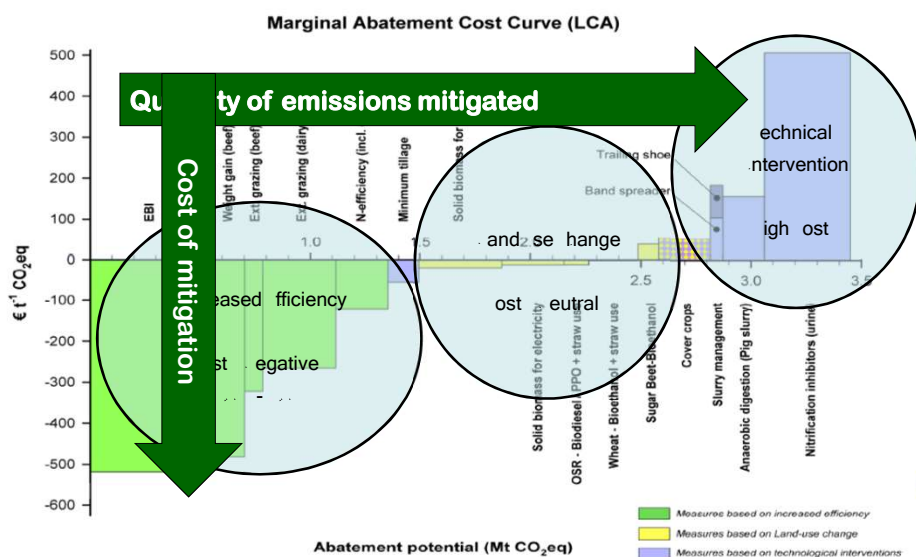


National integrated approach



The Irish Agriculture and Food Development Authority

Step 2 – Assess economics of mitigation



Step 3 – Reduce emissions. Carbon Navigator

➤ To mitigate emissions and increase awareness

Practical measures: GHG mitigation and profitable

1. Grazing season length
2. Age at first calving
3. Calving interval
4. Daily live weight gain
5. Nitrogen fertiliser efficiency
6. Manure management



The Irish Agriculture and Food Development Authority

Carbon Navigator

➤ To mitigate emissions and increase awareness

Practical measures: GHG mitigation and profitable

1. Grazing season length
2. Age at first calving
3. Calving interval
4. Daily live weight gain
5. Nitrogen fertiliser efficiency
6. Manure management

Set targets
with advisor

Review current & potential
performance

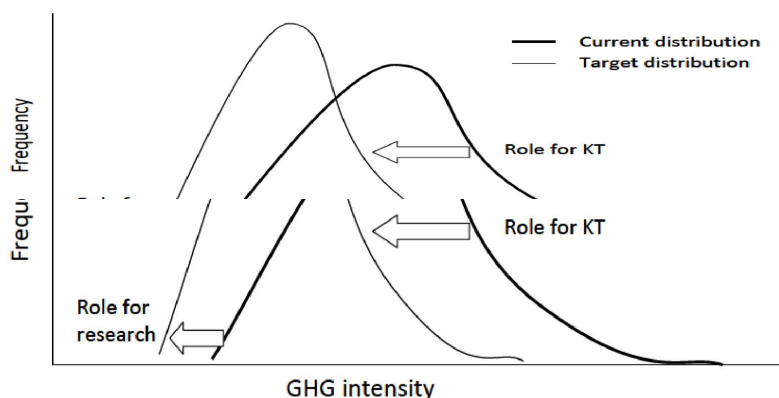
Potential GHG &
€ benefits

Efficiency Measure	Current	Target	Chart	GHG Change	€ Benefit
Age at first calving	28 mths	27 mths	<p>Age At First Calving</p>	-0.6%	+502



The Irish Agriculture and Food Development Authority

Research & Extension critical – example of dairy industry



The Irish Agriculture and Food Development Authority

Take home messages

Leverage points for improving global food security and the environment

Paul C. West,^{1*} James S. Gerber,¹ Peder M. Engstrom,¹ Nathaniel D. Mueller,²
Kate A. Brauman,¹ Kimberly M. Carlson,¹ Emily S. Cassidy,³ Matt Johnston,¹
Graham K. MacDonald,¹ Deepak K. Ray,¹ Stefan Siebert⁴

“One goal for achieving food security
is to grow more food on the existing
land base in ways that limit additional
pressure on natural ecosystems...”

- **Agriculture plays a key role in the Irish economy**
- **Dairy industry growing; strong commitment to sustainable development with a focus on land use policy**
- **GHG emissions targets will be challenging – short term will be missed**
- **Continued commitment to the agri-food sector but...**

“The agricultural sector urgently needs to step up to the plate when it comes to meeting the COP21 targets. Clear and measurable targets will be built into the national CAP action plans, and failure to meet them will result in penalties.”

EU Commissioner for Agriculture, Phil Hogan



The Irish Agriculture and Food Development Authority

Go raibh maith agaibh



The Irish Agriculture and Food Development Authority