Sustainability Trade Research Study
November 2009
Viewed as green & natural...

We now need to prove it...
**IRELAND’S NATURAL ATTRIBUTES**

**GRASS BASED PRODUCTION**

<table>
<thead>
<tr>
<th>Grassland Area</th>
<th></th>
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<tbody>
<tr>
<td>Ireland</td>
<td>80%</td>
</tr>
<tr>
<td>Europe</td>
<td>40%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Production (t DM/Ha)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ireland</td>
<td>15</td>
</tr>
<tr>
<td>Europe</td>
<td>11</td>
</tr>
</tbody>
</table>

Growing the success of Irish food & horticulture
IRELAND’S NATURAL ATTRIBUTES

WATER AVAILABILITY

Ireland has a very favourable water stress index (% of territory under water stress)

<table>
<thead>
<tr>
<th>Country</th>
<th>Water Stress Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>50</td>
</tr>
<tr>
<td>China</td>
<td>48</td>
</tr>
<tr>
<td>Australia</td>
<td>40</td>
</tr>
<tr>
<td>UK</td>
<td>40</td>
</tr>
<tr>
<td>Netherlands</td>
<td>31</td>
</tr>
<tr>
<td>France</td>
<td>18</td>
</tr>
<tr>
<td>Germany</td>
<td>12</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1</td>
</tr>
<tr>
<td>Ireland</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

Source: Growingblue.com

Growing the success of Irish food & horticulture

Bord Bia
Irish Food Board
IRELAND’S NATURAL ATTRIBUTES

AIR QUALITY VERY HIGH

Urban Outdoor Air Pollution
Annual mean PM10 (ug/m^3)

Source: World Health Organisation

Growing the success of Irish food & horticulture
Ireland’s Natural Attributes
Greenhouse Gas Emissions

EU Beef GHG Emissions

Source: EU JRC Evaluation of the livestock sector’s contribution to the EU greenhouse gas emissions (GGEELS)
Everyone on the journey... every farm & food manufacturing business signs up to the sustainability agenda...

Measuring what matters...

International Standards... accreditation, independent verification...

Continuous Improvement... performance based on science, innovation and best practice...
LOCAL ROOTS GLOBAL REACH

Food Wise 2025
A 10-year vision for the Irish agri-food industry

Growing the success of Irish food & horticulture
The farm audit

Growing the success of Irish food & horticulture
Farm Quality & Sustainability Audits

- 46,000 Beef Farms
  - 90% of Beef Exports, Audited & Carbon Footprinted

- 18,000 Dairy Farms
  - 100% Milk production, participants entering audit cycle

- Pigmeat, Poultry, Lamb, Eggs, Horticulture, Grain
  - Sustainability measures being implemented

Over 110,000 carbon assessments on farms to date
Farm Sustainability Assessments

AIM profile for each herd

Farm information collected on Handheld

ICBF

Indicative Performance for each farm

Growing the success of Irish food & horticulture
Using data collected on farm in carbon footprint model

<table>
<thead>
<tr>
<th>Grazing Days, Turnout By Day To Full Housing (Original survey 4.1)</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dairy Cows (days)</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Housing Days, Turnout By Day To Full Housing (Original survey 4.1)</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days in month</td>
<td>31</td>
<td>28</td>
<td>31</td>
<td>30</td>
</tr>
<tr>
<td>Dairy Cows (days)</td>
<td>31.00</td>
<td>28.00</td>
<td>16.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grazing Days Full Turnout To Full Housing (Original survey 4.1)</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dairy Cows (days)</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Replacements 0-12mths (days)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>30</td>
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<tr>
<td>Replacements 12-24mths (days)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>30</td>
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</tbody>
</table>
Sample herd AIM profile gathered

<table>
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<th>Audit Id</th>
<th>Tag</th>
<th>Origin</th>
<th>Sex</th>
<th>DOB</th>
<th>Breed</th>
<th>Dam Breed</th>
<th>Sire Breed</th>
<th>Date In</th>
<th>Date Out</th>
<th>Date Disposed</th>
<th>Move Type</th>
<th>Days On Farm For Year</th>
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<td>11/06/2013</td>
<td></td>
<td>HK</td>
<td></td>
</tr>
</tbody>
</table>

Information accessed from Dept. of Agriculture with farmers permission

Growing the success of Irish food & horticulture
Improving you performance

There are a number of practical steps that farmers can take to optimise their footprint performance while at the same time helping to boost profitability as sustainable and efficient production tend to go hand in hand.

To help with the Teagasc/Bord Bia Farm Carbon Navigator Tool has been developed to help you work with your farm advisor to optimise the environmental and economic performance of your beef enterprise. The information provided at the time of our visit allows us to show how your farm currently performs - relative to similar farms in the same part of the country - under the following six areas:

- Grazing season length
- Calving interval
- Age at first calving
- Daily liveweight gain
- Nitrogen fertiliser usage
- Slurry Spreading

**Current Farm Performance** (Score out of 10)

- Slurry Management: 7
- Nitrogen Usage: 4.5
- Daily liveweight gain: 7
- Age at first calving: 5
- Calving rate: 6
- Grazing Season: 7.5

**Average**

**Excellent**

Improving your score by one point in the areas above where you currently at 6 or less could help boost your farms financial performance by €2,000 and reduce the greenhouse gas emissions from your beef enterprise by 5%.
Using Data to Drive Performance

GHG Emissions + Farm Financial Performance = Sustainable = Efficient
# The Carbon Navigator

## Carbon Navigator Tool

<table>
<thead>
<tr>
<th>Efficiency Measure</th>
<th>Chart</th>
<th>GHG Change</th>
<th>€ Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grazing Season – Suckler Cows</td>
<td></td>
<td>-1.2%</td>
<td>+501</td>
</tr>
<tr>
<td>Grazing Season Yearlings</td>
<td></td>
<td>-0.9%</td>
<td>+494</td>
</tr>
<tr>
<td>Age at first calving</td>
<td></td>
<td>-0.6%</td>
<td>+502</td>
</tr>
<tr>
<td>Calving rate</td>
<td></td>
<td>-4.2%</td>
<td>+1,075</td>
</tr>
<tr>
<td>Live Weight Performance</td>
<td></td>
<td>-0.1%</td>
<td>+504</td>
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</table>

## Potential Impact of meeting all targets

<table>
<thead>
<tr>
<th></th>
<th>GHG Change</th>
<th>€ Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-10.5%</td>
<td>+€3,465</td>
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</table>

**Growing the success of Irish food & horticulture**

**Bord Bia**
Irish Food Board
Carbon Navigator tool

Looks at practical measures on farm

1. Grazing season length
2. Age @ 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
- Identify Potential GHG & € Benefits

<table>
<thead>
<tr>
<th>Efficiency Measure</th>
<th>Current</th>
<th>Target</th>
<th>Chart</th>
<th>GHG Change</th>
<th>€ Benefit</th>
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<tbody>
<tr>
<td>Age at first calving</td>
<td>28 mths</td>
<td>27 mths</td>
<td></td>
<td>-0.6%</td>
<td>+502</td>
</tr>
</tbody>
</table>

Growing the success of Irish food & horticulture
Roll out of Carbon Navigator

Rural Development Programme: 40,000 Farmers

Independent research shows that farmers in discussion groups achieve higher profits!

BDGP
Beef Data & Genomics Programme

Growing the success of Irish food & horticulture

Bord Bia
Irish Food Board
RANGE OF CARBON FOOTPRINT RESULTS ACROSS BEEF AND DAIRY FARMS

No. of farms

MOVING TO THE AVERAGE WOULD REDUCE EMISSIONS BY 1.1M TONNES CO₂ EQUIVALENT

Growing the success of Irish food & horticulture
FARM CASE STUDIES

William Morrow, Co. Donegal

- William Morrow CO2 Emissions per kg liveweight: 6.2kg
- Bord Bia Sustainable Beef Producer Winner, 2014: Dairy Calf to Beef

Pat Murray, Co. Wexford

- Pat Murray CO2 Emissions per kg liveweight: 8.7kg
- Bord Bia Sustainable Beef Producer Winner, 2014: Weanling/Store to Beef

Tim Joyce, Co. Galway

- Tim Joyce CO2 Emissions per kg liveweight: 9.3kg
- Bord Bia Sustainable Beef Producer Winner, 2014: Suckler to Weanling/Store

Jonathan Greene, Co. Kildare

- Jonathan Greene CO2 Emissions per kg liveweight: 9.9kg
- Bord Bia Sustainable Beef Producer Winner, 2014: Suckler to Beef

Growing the success of Irish food & horticulture

Bord Bia
Irish Food Board
99% of water consumption comes from natural rainfall.
Environmental Scheme Participation
Biodiversity
Habitats/Areas of Conservation
Tree Planting
Hedgerow Management

Growing the success of Irish food & horticulture

Bord Bia
Irish Food Board
## Remote Assessment of Wildlife Habitats

**Legend**
- **Field Boundaries**

### Habitats
- **BL3**
- **GA1**
- **GS4**
- **Greenway**
- **WD1**
- **WL**
- **Wetland**

---

1. The area of habitats on the farm is greater than 25%, and represents a substantial contribution to farmland habitats for wildlife. No further habitat enhancement or creation is required. However, the farmer might consider the following suggested actions to benefit wildlife on small areas of the improved agricultural grasslands.

2. Hedgerow cutting can be more wildlife-friendly by leaving uncut for two to three years, and by cutting in rotation (rather than all at once).

3. Consider creating or extending small areas of woodland through the Native Woodland Scheme.

4. Widen existing field margins or headland areas that have native wildflowers.

5. If there are no existing field margins with native wildflowers, create some field margins by sowing pollen and nectar-rich plant species (see website for details).

6. Control and eradicate non-native invasive species that threaten native habitats and wildlife e.g. Himalayan balsam, Japanese knotweed, Gunnera and Rhododendron (see website for details).

7. Create a farmland pond.

8. See website* for other suggestions.

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**Pilot on 200 farms in 2016**

Growing the success of Irish food & horticulture

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*Bord Bia* Irish Food Board
Growing the success of Irish food & horticulture

Bord Bia
Irish Food Board
Origin Green Verified Members

Company Recruitment Pipeline

- 523 Registered
  90% of exports

- 166 Developing Plans

- 153 Draft Plans Submitted

- 204 Verified Members
  >85% of exports

Growing the success of Irish food & horticulture

Bord Bia
Irish Food Board
ORIGIN GREEN PLATFORM
Welcome to our new members Gareth Wescott (The Food Tap), Jenny Synnott (The Dublin Cookie Company) & Sinead Ryan (Bulmers Ireland).
Welcome to the Origin Green Platform READ MORE

EXPLORE
What are you interested in?

ASK
Looking for an answer?

1,200+ Feedback Reports
60 Workshops
15 hours one to one support
150+ companies took online course

HIGHLIGHTS

ACTIVE DISCUSSIONS
Is there a method for calculating energy savings on automatic fast closing chill doors?

Reducing natural gas and water use at Marine Harvest Ireland

PLAN DEVELOPMENT

Growing the success of Irish food & horticulture
PERCENTAGE OF EXPORTS FROM ORIGIN GREEN VERIFIED MEMBERS

2012
- Non-Members: 79%
- Origin Green Members: 21%
- Exports from Origin Green Members: €1.93bn

2013
- Non-Members: 46%
- Origin Green Members: 54%
- Exports from Origin Green Members: €5.44bn

2014
- Non-Members: 25%
- Origin Green Members: 75%
- Exports from Origin Green Members: €7.84bn

2015
- Non-Members: 15%
- Origin Green Members: 85%
- Exports from Origin Green Members: €9.15bn

Growing the success of Irish food & horticulture
Growing the success of Irish food & horticulture

**KEY FACTS**

- **€12m**: Reduction in energy usage by 2017.
- **14,000 tonnes**: Less general waste by 2017.
- **24%**: Water usage reduction per unit output by 2017.

**Origin Green Ireland**

- Raw Material Sourcing
- Social Sustainability
- Manufacturing Process
Origin Green: The Road Ahead

- Lowering our Environmental Footprint: prioritising emissions, biodiversity & water quality
- Enhancing our Impact on Society: a focus on health and wellbeing
- Creating a Showcase of Sustainability: closing the loop at home
- Collaborating and innovating: to improve performance
- Sharing the Vision: maintaining momentum

Growing the success of Irish food & horticulture
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RETHINKING FOOD

TODAY ONE OF THE BIGGEST THREATS TO OUR PLANET COMES FROM THE PRODUCTION OF FOOD. IF WE DON'T GET THE WHERE AND HOW OF FOOD PRODUCTION RIGHT OVER THE NEXT 40 YEARS, WE'RE TOAST.

AND WE'VE SEEN A FEW MAJOR WINS.

IRELAND BECAME THE FIRST COUNTRY TO COMMIT TO THIRD-PARTY VERIFIED, 100% SUSTAINABLE FOOD EXPORTS BY 2016.

Growing the success of Irish food & horticulture

Bord Bia
Irish Food Board
CONSUMER BRANDS THAT DEMONSTRATE COMMITMENT TO SUSTAINABILITY OUTPERFORM THOSE THAT DON’T

Sixty-six percent of consumers say they are willing to pay more for sustainable brands—up from 55% in 2014 and 50% in 2013.