

Practical **Actions** to Reduce Greenhouse Emissions on **Your Farm**

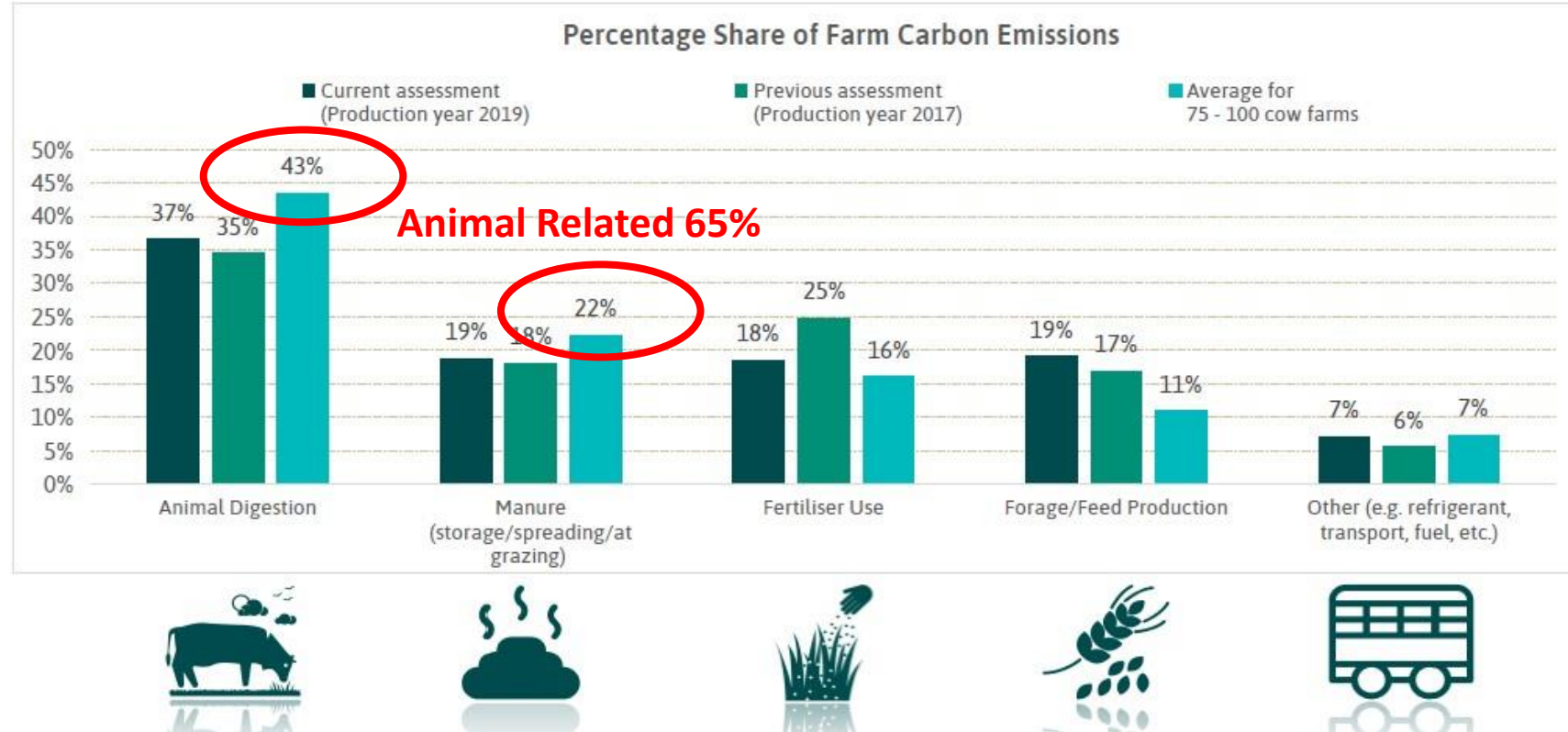
Dr. Seamus Kearney

20/10/2021

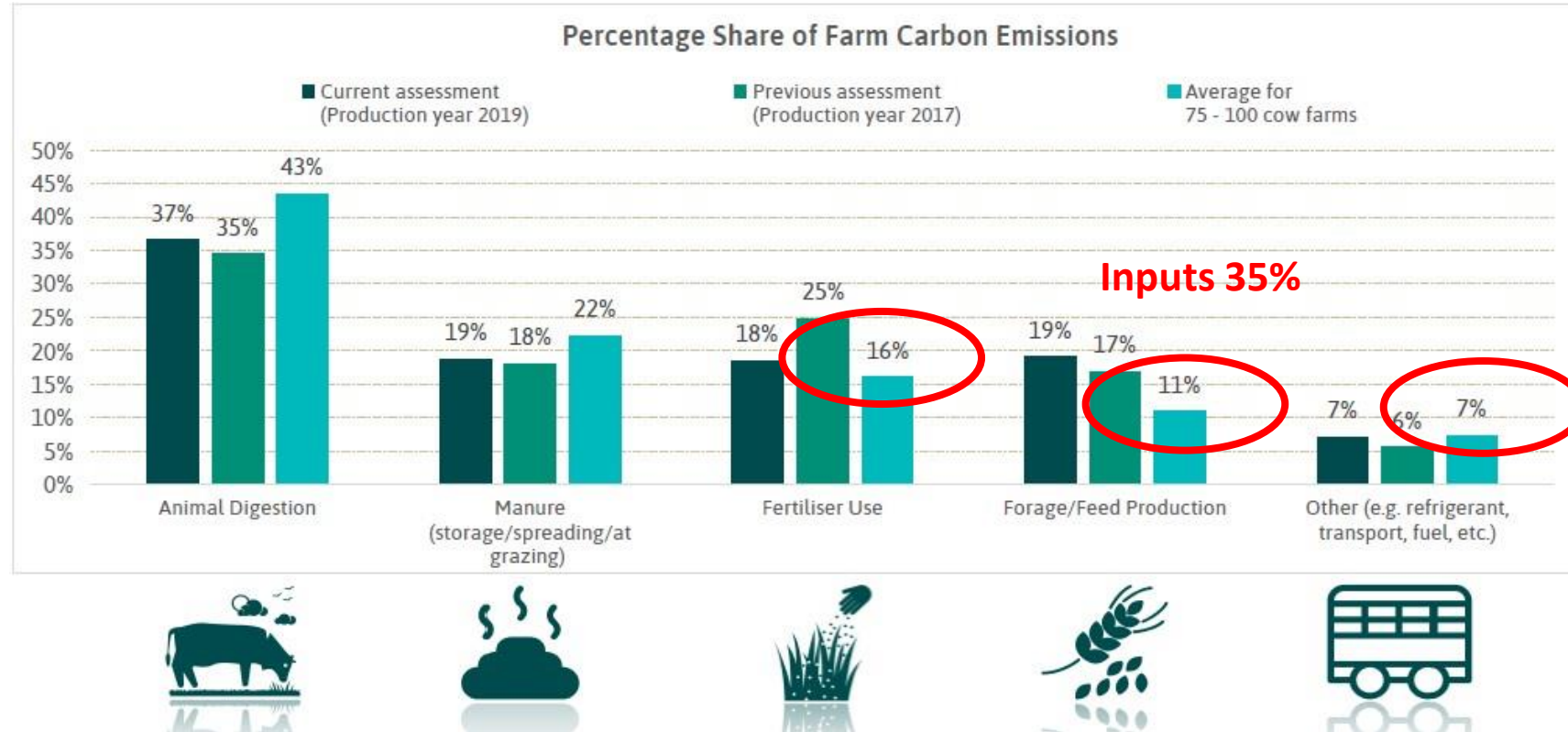
Introduction

- Emission breakdown by enterprise
 - Challenge that presents
- Building blocks to reduce Greenhouse Gas emissions
- Quantify farm actions and their reduction potential
- Summary for dairy farm actions

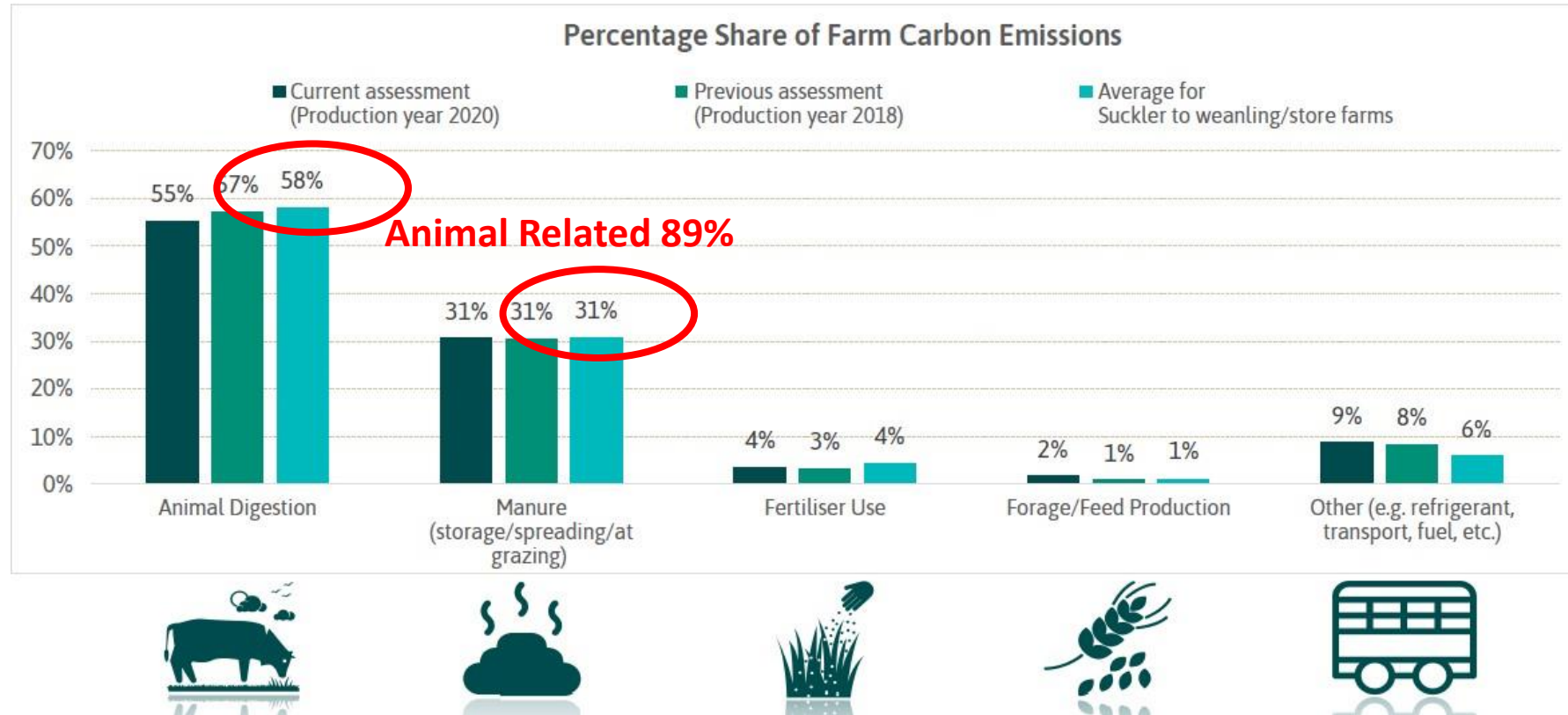
Dairy Carbon Footprint



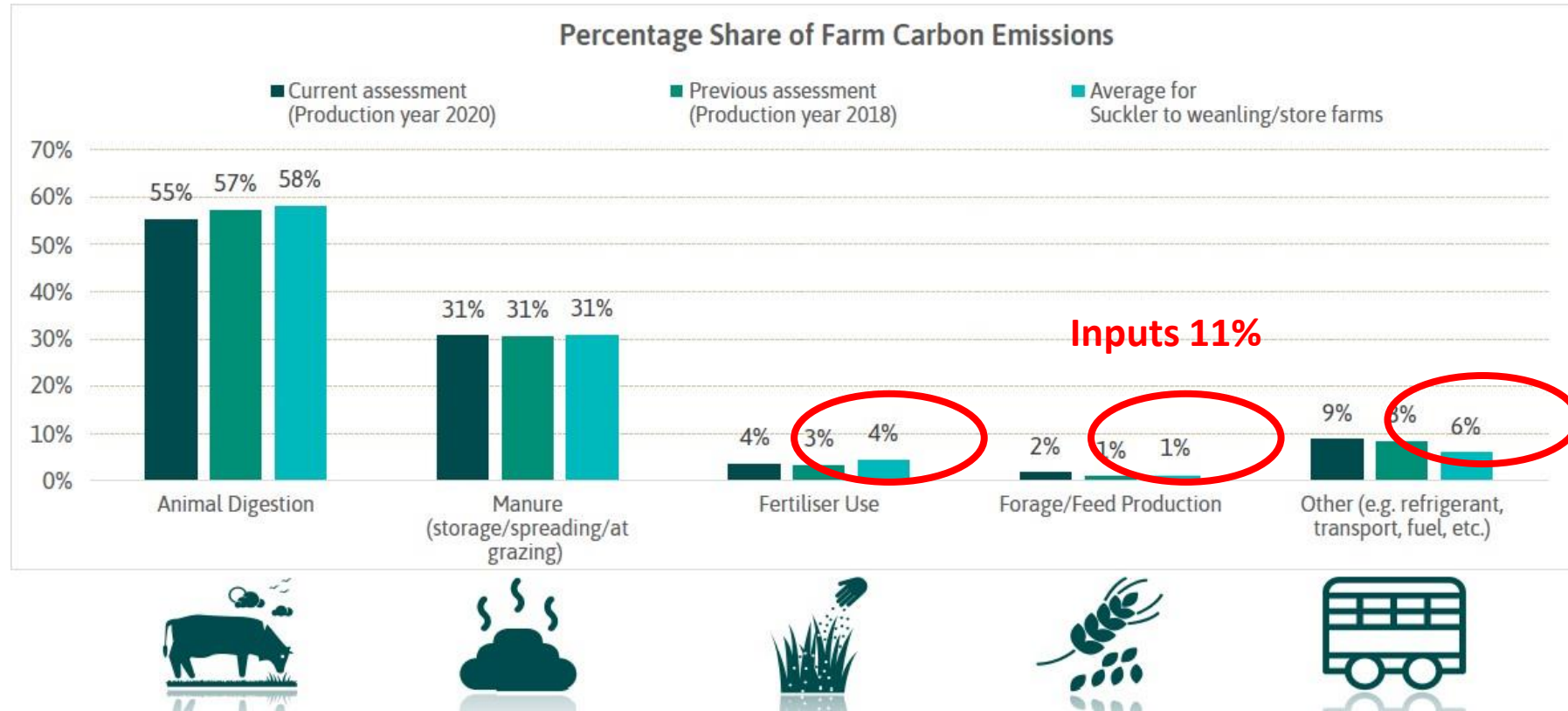
Dairy Carbon Footprint



Suckler Beef Carbon Footprint



Suckler Beef Carbon Footprint



Building Blocks to Reduce Farm Emissions

Biodiversity

Hedgerow Management
Trees
High Value Nature

Soil Fertility

Lime (pH)
Phosphorous (P)
Potassium (K)

Animal Productivity

Animal Breeding (EBI Dairy)
Animal Breeding (MRI Sucklers)
Earlier Finishing of Cattle
Animal Health Plan

Water Quality

Buffer Zones
Timing of Applications

Building Blocks to Reduce Farm Emissions

Fertiliser

Type
Timing
Quantity

Slurry Management

Slurry Storage
Timing
Application Methods

Grassland Management

Extended Grazing
Grass Measuring
Grass Quality

Clover/Mixed Species Swards

Establishment
Reducing Fertiliser Use

Biodiversity

Hedgerow Management
Trees
High Value Nature

Soil Fertility

Lime (pH)
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Establishment
Reducing Fertiliser Use

Farm Profitability

Biodiversity

Hedgerow Management
Trees
High Value Nature

Soil Fertility

Lime (pH)
Phosphorous (P)
Potassium (K)

The Farmer

Animal Productivity

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Water Quality

Buffer Zones
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Animal Productivity

- **E**conomic **B**reeding **I**ndex (EBI)
 - Every **€10 increase in EBI** = €20 profit/cow/year and **1% GHG Reduction**
 - More mature herd, higher MS/cow and lower replacement rate
 - Same output with less animals
- **M**aternal **R**eplacement **I**ndex (MRI)
 - Improved health and survival
 - Shorter calving interval

Grassland Management

- **Extended Grazing**

- Every extra week at grass

= 1% GHG Reduction

- **Summer Grass Quality**

- 1,400 kg/dm/ha v 2,000 kg/dm/ha
 - 8 week peak growth

= 15% GHG Reduction Daily

= 1-2% GHG Reduction

Meal Feeding

- **Meal Feeding**

- Reduction of 50-100 kg/meal/cow = **1% GHG Reduction**

- **Silage Quality**

- Higher DMD Silage/Lower Fibre = **Lower GHG Emissions**

Fertiliser

- **Protected Urea (Cheaper than CAN)**
- $\frac{1}{4}$ of GHG and Ammonia Emissions of CAN
 - 100% Protected Urea Dairy = **7-8% GHG Reduction**
 - 100% Protected Urea Beef = **2-4% GHG Reduction**
- **Fertiliser Reduction**
 - 25% Reduction Dairy = **5% GHG Reduction**
 - 25% Reduction Beef = **1-2% GHG Reduction**

Fertiliser Reductions

- **Soil Fertility**

- Lime (pH), Phosphorus (P) and Potassium (K) **80 kg/N/ha**

- **Clover**

- Reduced chemical N up to **100kg/N/ha**

- **Mixed Species Swards**

- **Slurry Spreading**

- **Timing** Spring spreading before 1st May **extra 3 units N/1,000 gals**
 - **Method** Low emission slurry spreading **+ extra 3 units N/1,000 gals**



• Dairy Potential to 2030

- 1 Week Extra Grass
 - S. Rate 1.98 lu/ha
- Summer Quality Grass
- 100 kg Meal/cow less
- EBI +€10/year
- 25% less chemical N
- 100% Protected Urea
- LESS Slurry Spreading
- 20% Energy Reduction

GHG's

1%

1%

1%

9%

5%

7%

2%

1%

• Total

23-27%



Dairy Potential for 2022	GHG's
• 1 Week Extra Grass	1%
• Summer Quality Grass	1%
• 100 kg Meal/cow less	1%
• EBI +€10/year	9%
• 25% less chemical N	5%
• 100% Protected Urea	7%
• LESS Slurry Spreading	2%
• 20% Energy Reduction	1%
• Total	10-12%

Summary

- Lower GHG emissions are compatible with good farming
- Get the basics right
 - Soil fertility
 - Herd fertility
 - Animal health and performance
 - Grassland management
- Go after the quick wins
 - Protected Urea, LESS, grassland management
 - No passenger stock on farm
- **A good start is half the work**

Thank You

The Signpost Programme is a collaborative partnership of farmers, industry and state agencies working together for climate action. For further details please refer to www.teagasc.ie/signpost