

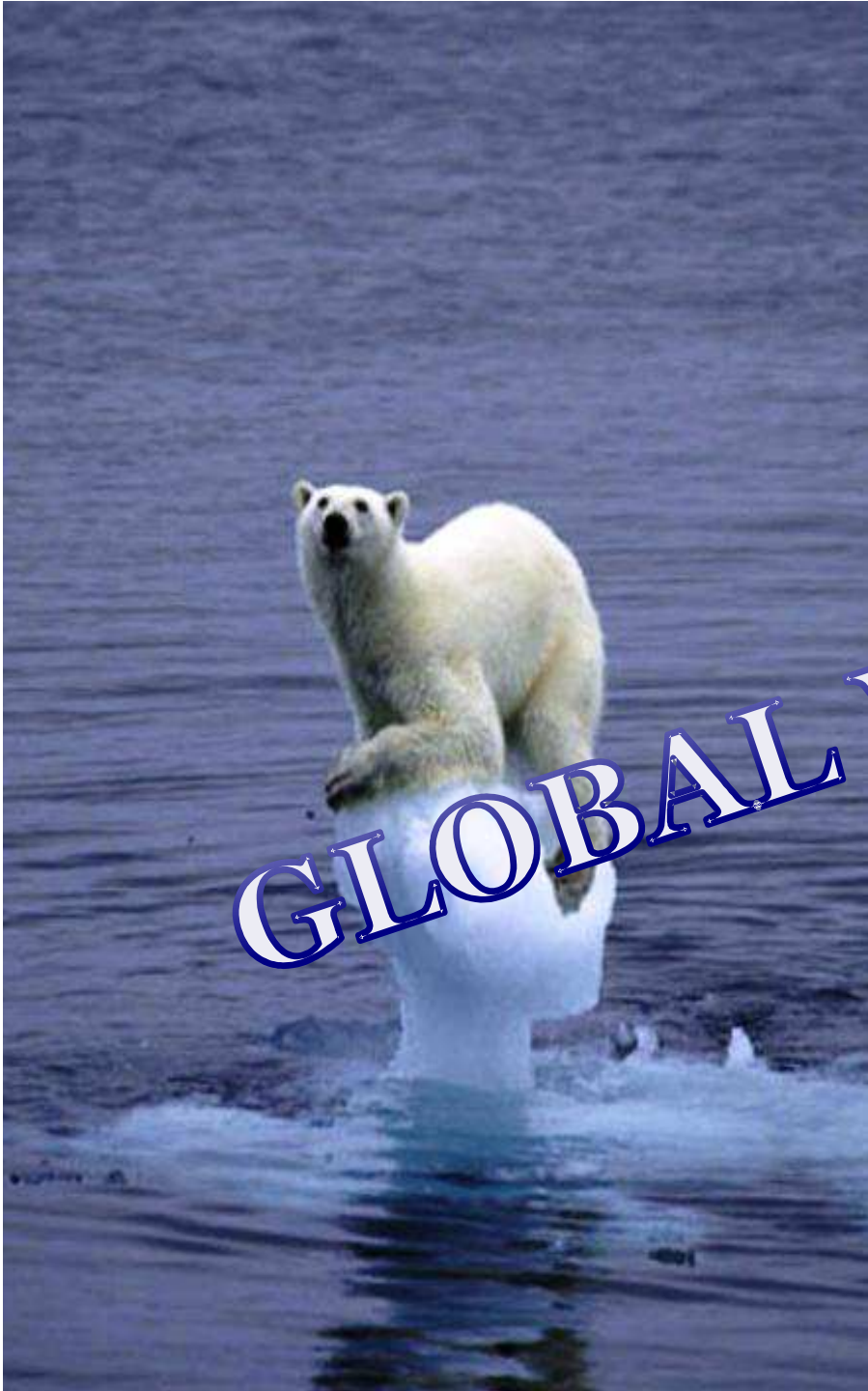
Measuring the carbon footprint of food production: An example from Ireland



Overview

- Counting carbon
 - Why it is important and the different methodologies
- Life-cycle analysis
 - Data requirements and FADN additions
- Data Collection Experience
- Results for Ireland
- Future Work

GLOBAL WARMING



Counting carbon

- Why it's important
 - Greenhouse gas emissions from agriculture contributing to climate change
 - Particularly important in Ireland agriculture accounts for 29%
 - EU targets to reduce emissions but must balance this with our targets to increase food production
 - Understanding our current position is important

Counting Carbon - methods

- **GHG emissions measured in multiple ways**
- **IPCC approach**
 - sectoral approach confined to territorial boundary
 - within the farm gate
 - standard coefficients applied
- **LCA approach**
 - emissions measured per unit of output of product
 - product (multi-sectoral) basis (from farm to fork)
 - no territorial boundary on emissions counted
 - emissions associated with farm inputs counted



Intergovernmental Panel
on Climate Change (IPCC)



Experiences in Ireland

- IPCC approach used for all farms for a number of years
- LCA analysis more complicated
 - Model & data requirements
- LCA analysis conducted for milk first time in 2012 now 3 years of data available
- LCA analysis conducted for beef first time in 2014
- To date most studies on representative or experimental farms – few examples of nationally representative studies
 - Dutch and Ireland

Data Requirements

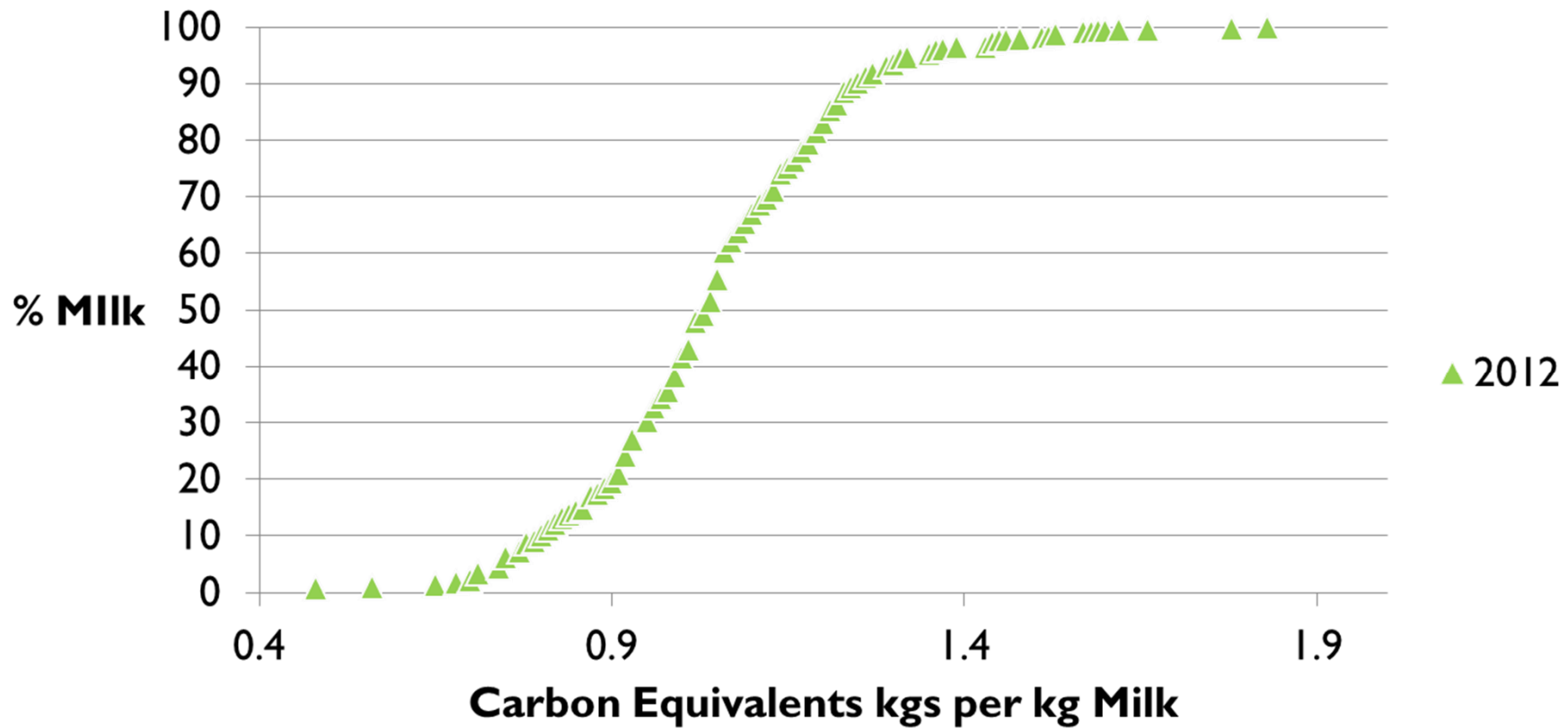
Data Requirements	Feasibility of Collection
Animal Numbers by Age Monthly	
Monthly Milk Production (Quantity & Constituents)	
Grazing days By Category	
Type of concentrate feed by animal type fed, monthly,	
Fertiliser Details by NPK constituent	
Animal Housing Type	
Slurry Storage type, spreading system and timing (incl Import & export)	
Energy Estimate of Use Main Energy provider Energy used by contractors	
Dairy cooling – gases used	

hority

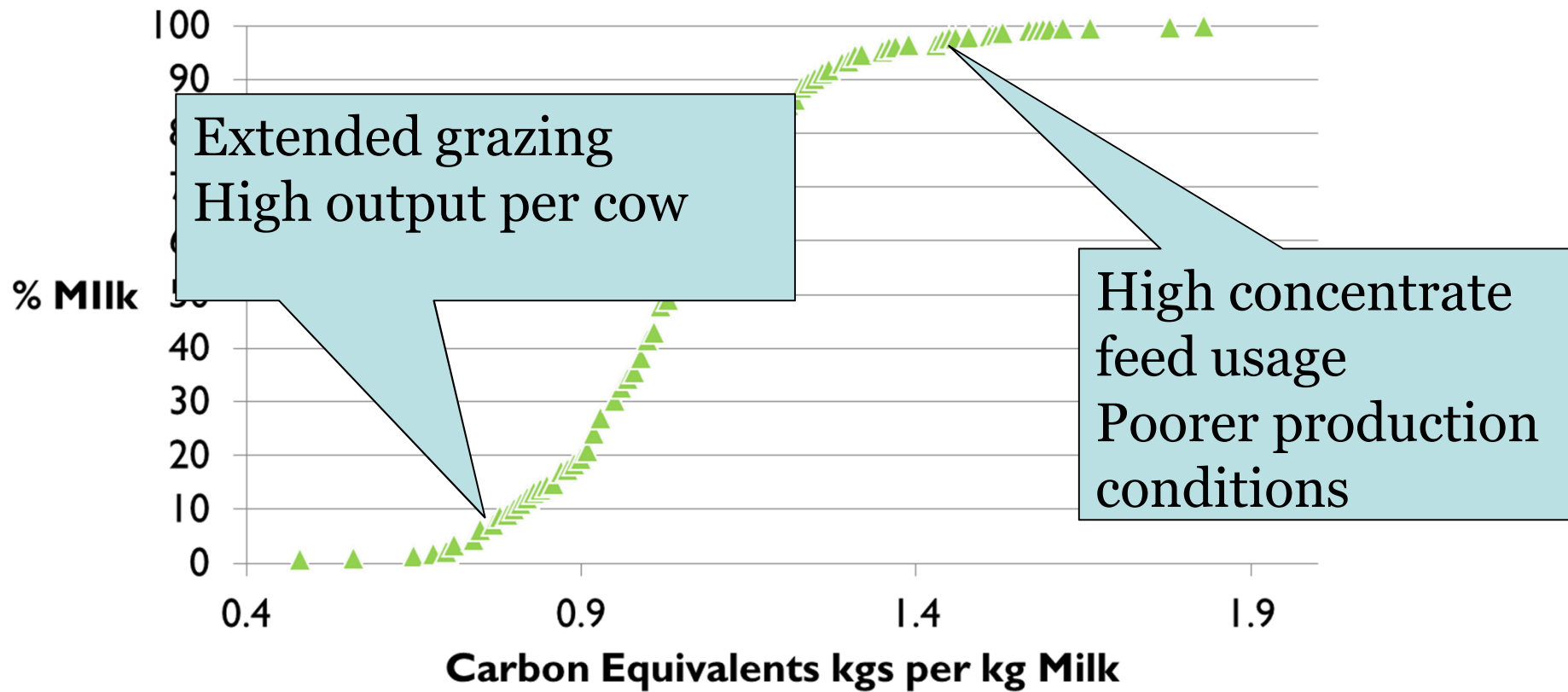


The Results

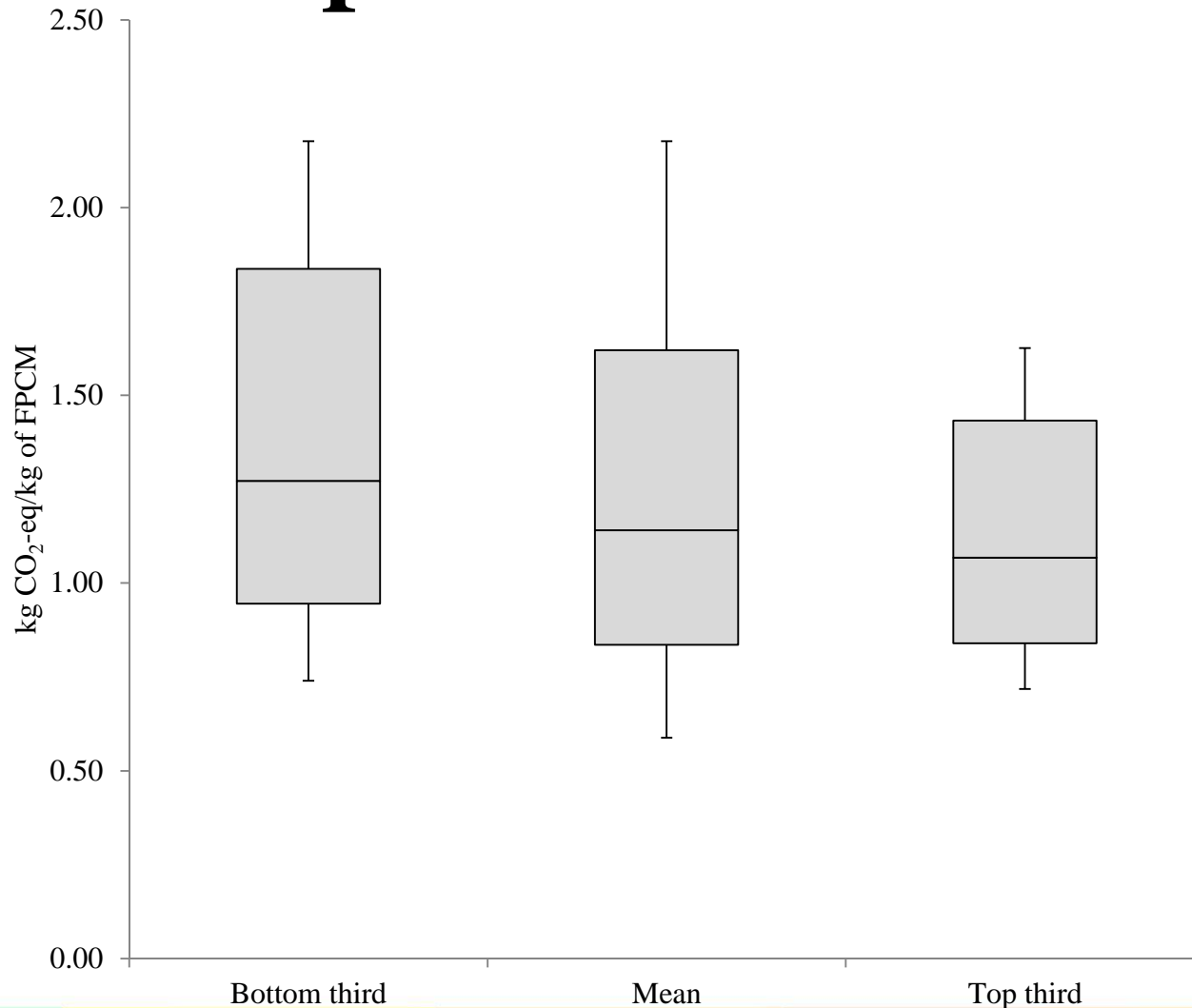
Carbon Footprint – 2012



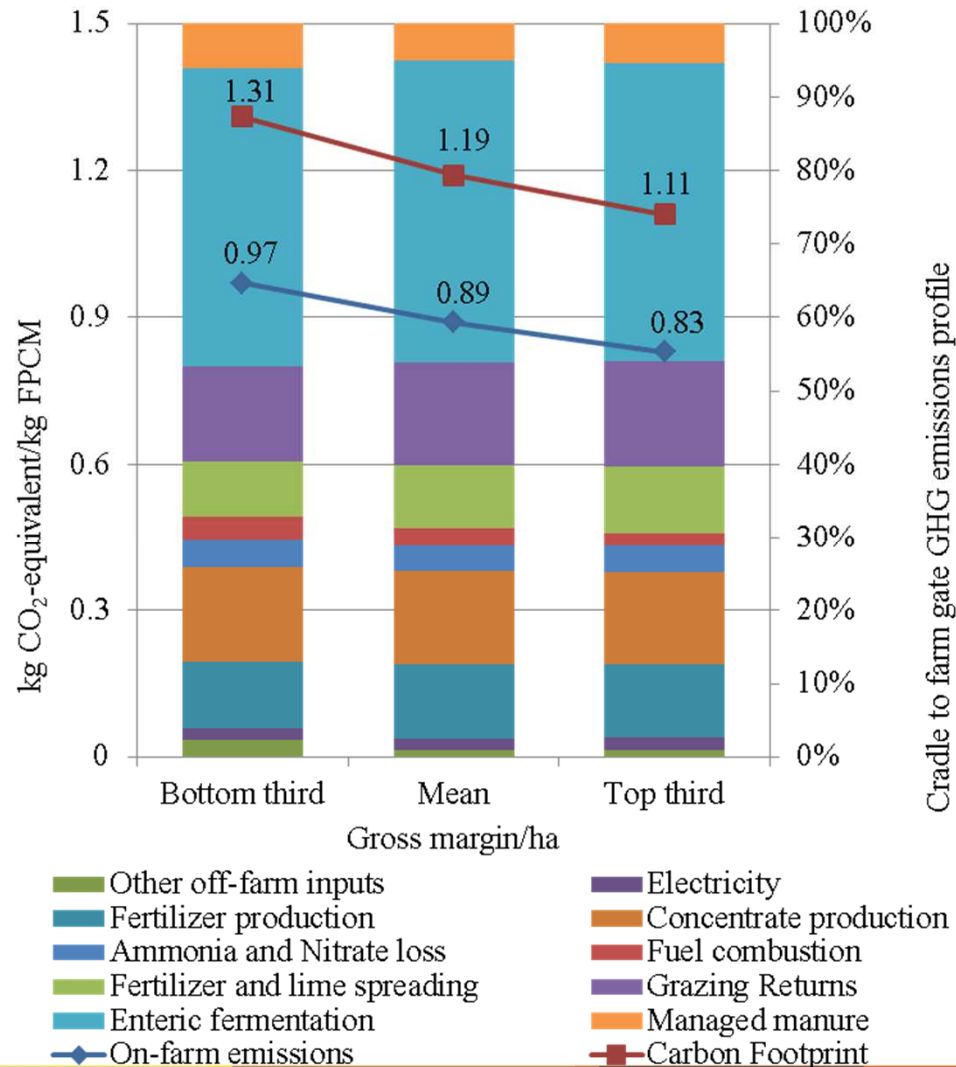
Carbon Footprint – 2012



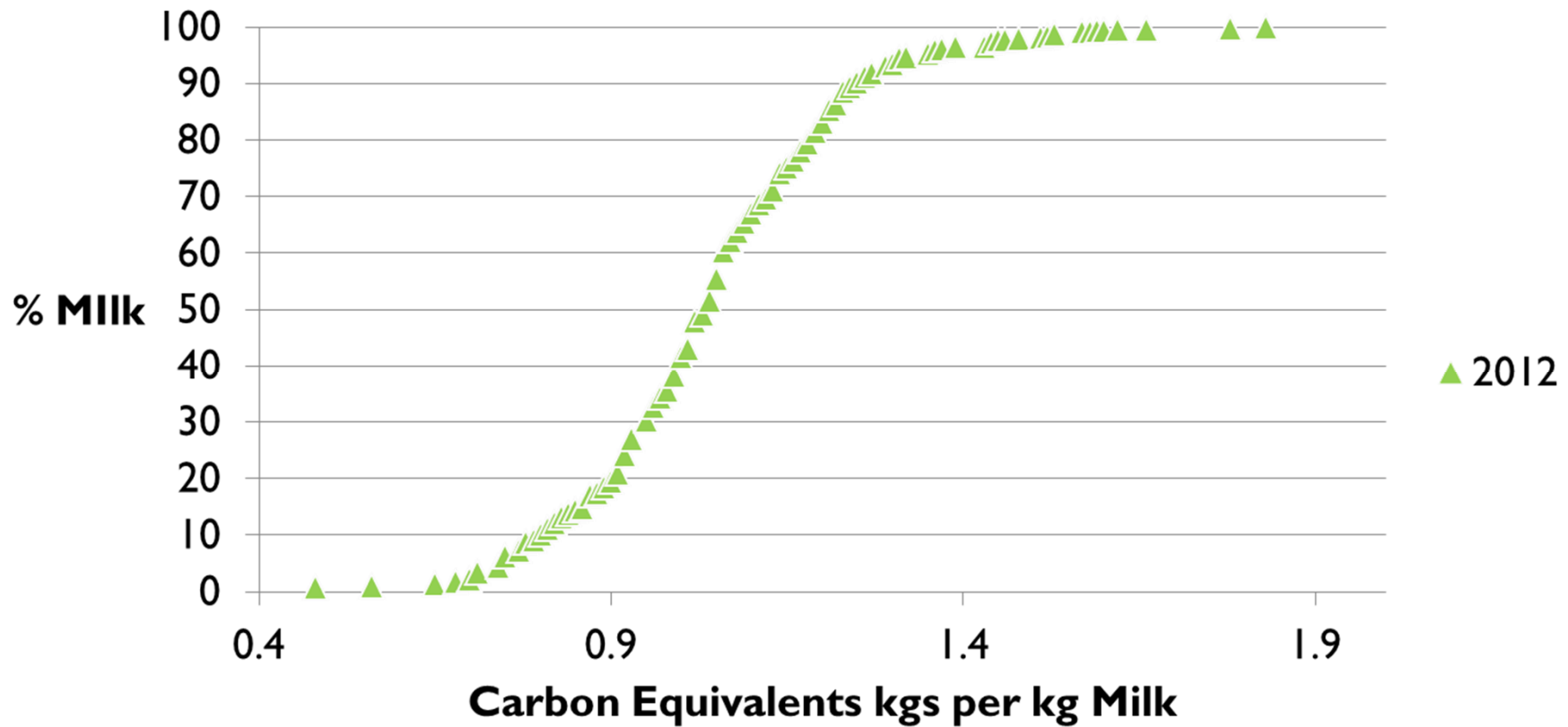
Link with profit



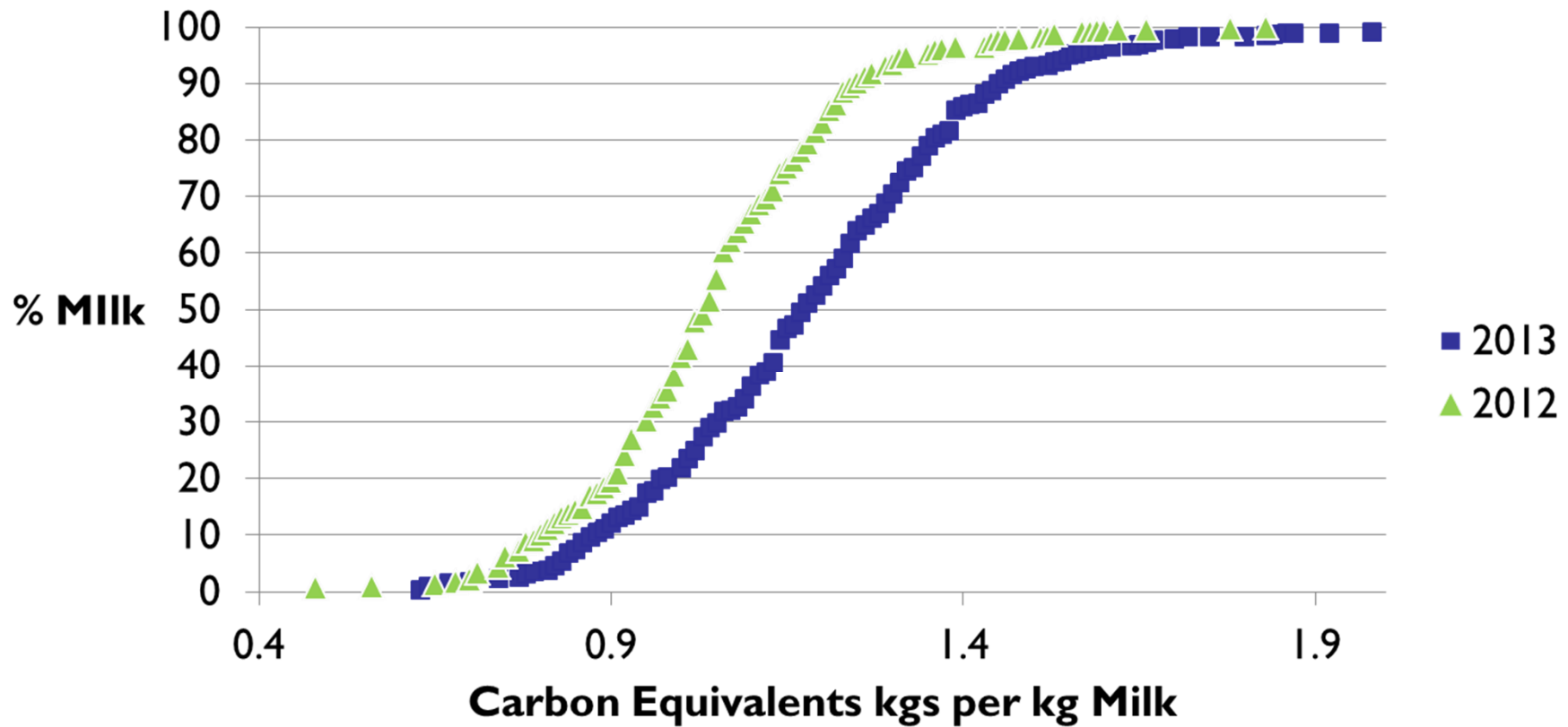
Sources of Emissions



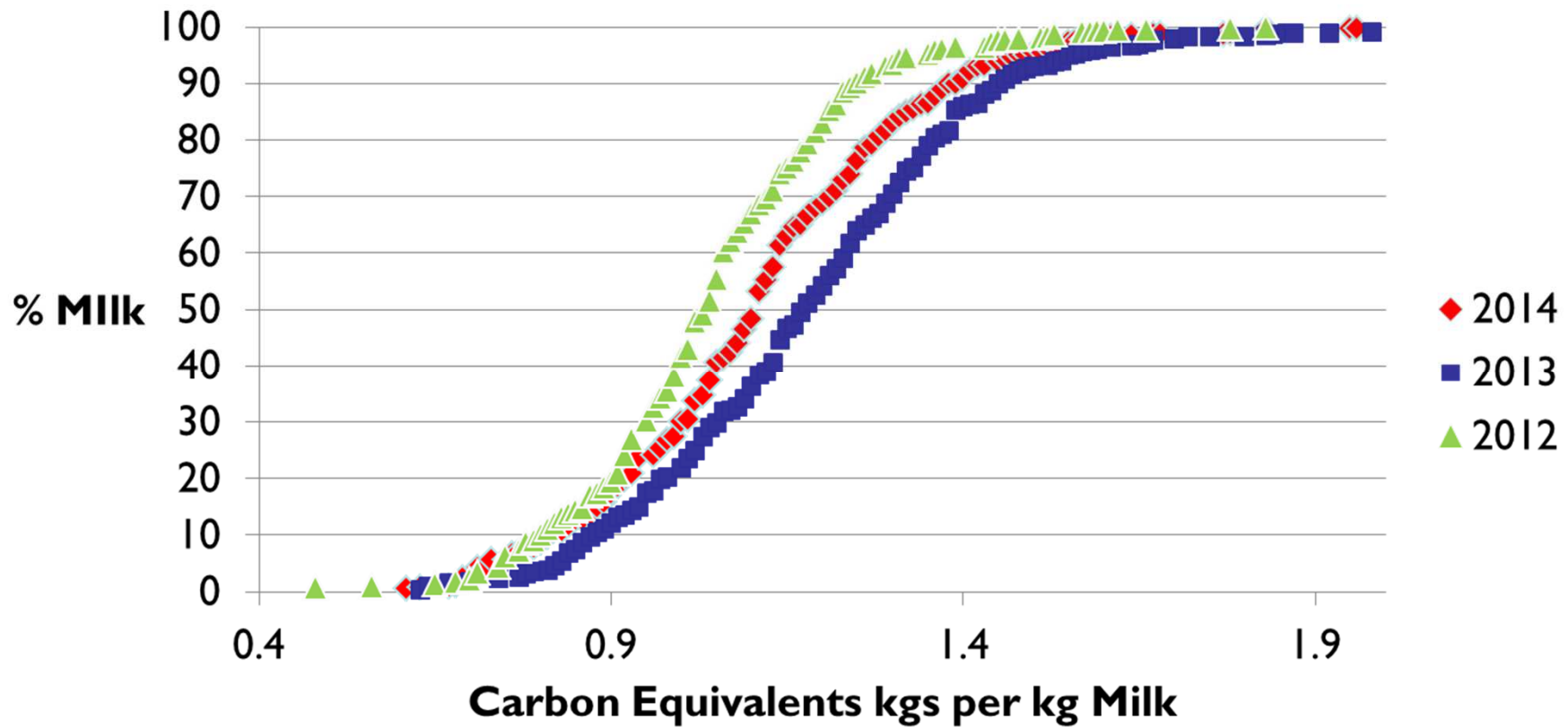
Carbon Footprint – Change over time



Carbon Footprint – Change over time



Carbon Footprint – Change over time



What's
next ?

Conclusions & Future work

- Huge interest from stakeholders
 - Marketing – green Irish image
 - Policy – if we want to reduce what are the technologies and influencing factors
 - Scientists – more farm specific emission factors
- Currently extending to beef sector
 - Model is available data collection is more challenging
- Linking the carbon footprint to other sustainability indicators
 - FLINT – measure the impact of extension and advisory on the carbon footprint
- Cross country comparisons
 - Dutch model also exists
 - Exchange data and run through our own