



How FrieslandCampina uses carbon footprinting to make dairy more sustainable

Sanne Dekker, Researcher environmental footprinting FrieslandCampina R&D
30 November 2017

Why we work on carbon footprinting at FrieslandCampina

1. Licence to produce

- 20% reduction of greenhouse gas emissions in the dairy chain compared in 2020 compared to 1990
- Climate neutral growth in the dairy chain, equal total greenhouse gas emissions in 2020 compared to 2010, despite ~20% more milk production

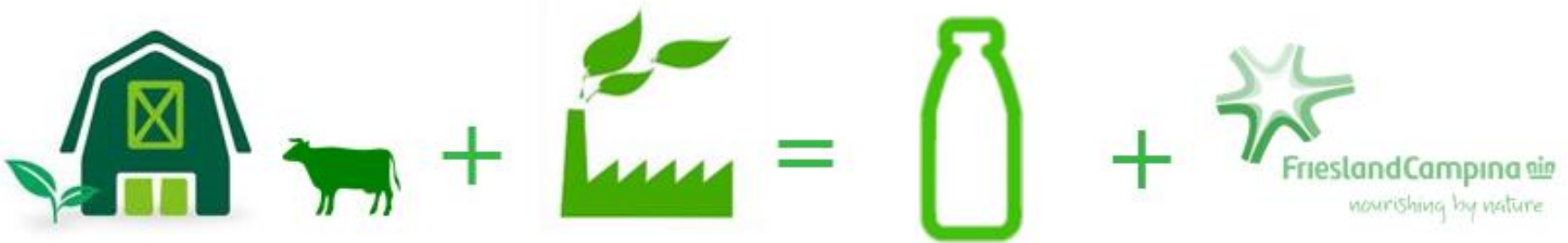
2. Our customers ask for products with a low carbon footprint



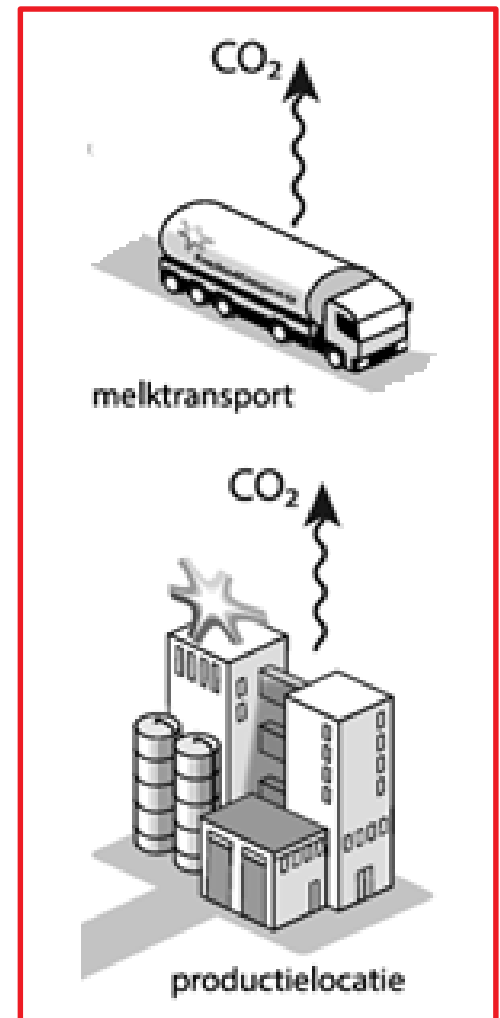
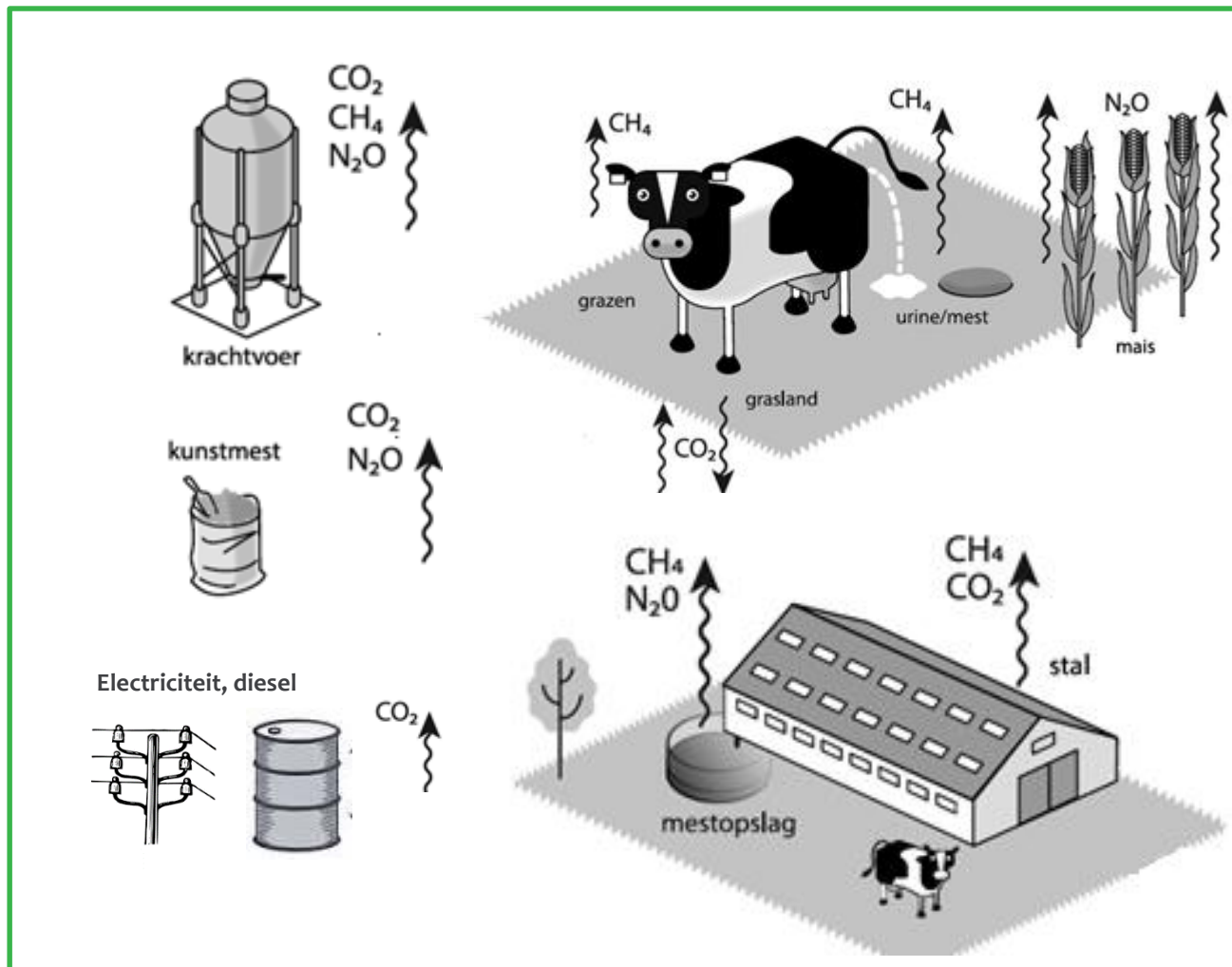
How we use carbon footprinting in our company and cooperative?

Use environmental footprinting to facilitate eco-innovation in farming, processing and product innovation

Use environmental footprinting to demonstrate environmental performance of our products and company



80% of the greenhouse gas emissions from dairy occur before the factory gate. So we need to motivate 12000 individual farmers to reduce the carbon footprint of their raw milk,



Emissions of production
and sourcing of purchased
resources

Emissions on the dairy farm:
(animals manure roughages)

Emissions from
transport and
processing retail and
use

Situation: Large differences exist between carbon footprints reported for Dutch raw milk and only sector average available

Table 2 Milk production and GHG emission data for European

	Typical farms per country	Emission rate (kg CO ₂ /kg ECM)
Western Europe		
Switzerland	2	1.25
Austria	6	1.28
Germany	11	1.44
Netherlands	2	1.03
Luxembourg	2	1.32
France	2	1.18
Spain	3	0.98
Italy	2	1.06
United Kingdom	2	1.08
Ireland	2	1.23
Denmark	2	1.13
Sweden	2	1.06
Finland	3	1.19
Norway	2	1.71
Central, Eastern Europe		
Poland	5	1.30
Czech Republic	3	1.45
Bulgaria	2	1.37
Ukraine	4	1.04
Belarus	3	1.67
Sum production/emissions		
Mean (weighted)		1.22

Source for milk production data: Hemme (2007)

(IFCN 2011)

kg CO₂eq./kg melk

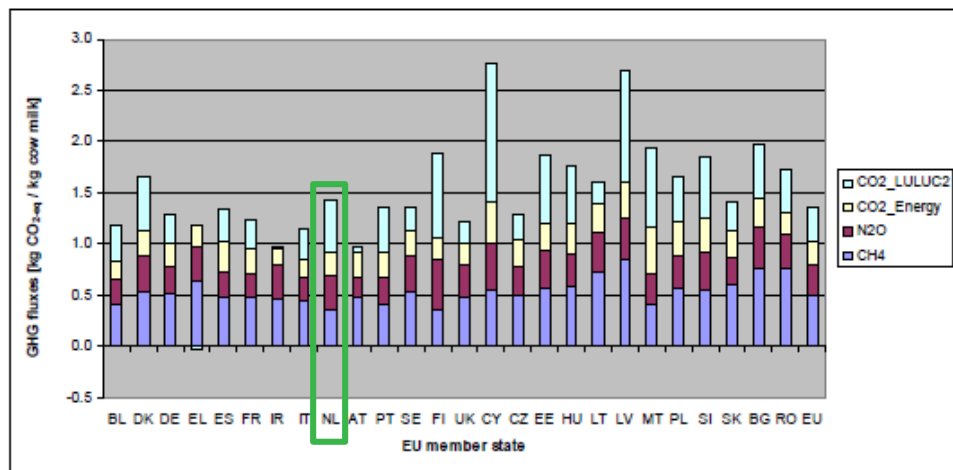
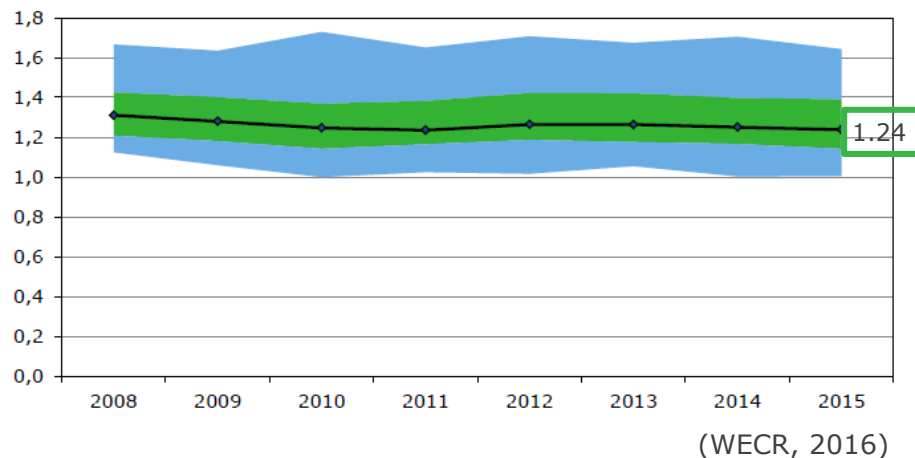
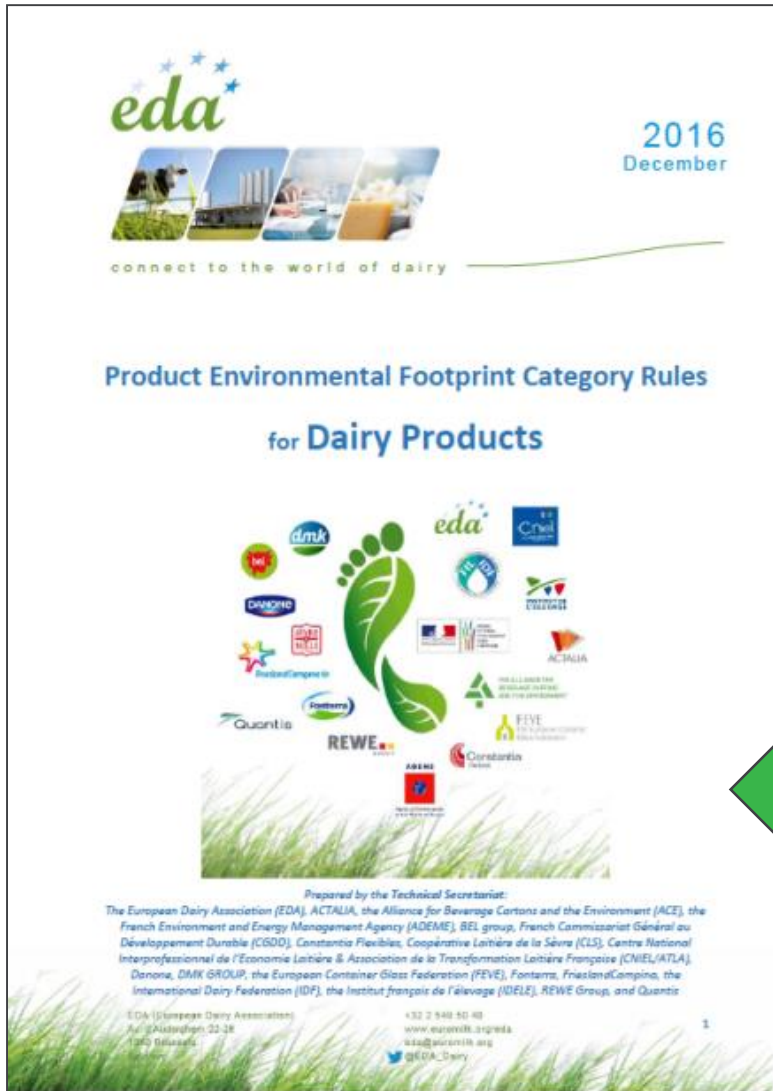


Figure 6.7: Total GHG fluxes of Cow Milk Production in kg CO₂-eq per kg Milk by EU member states and Greenhouse Gases

(JRC 2010)

Need for standardized calculation: many footprint standards, but PEF is more prescriptive and dairy specific than earlier standards



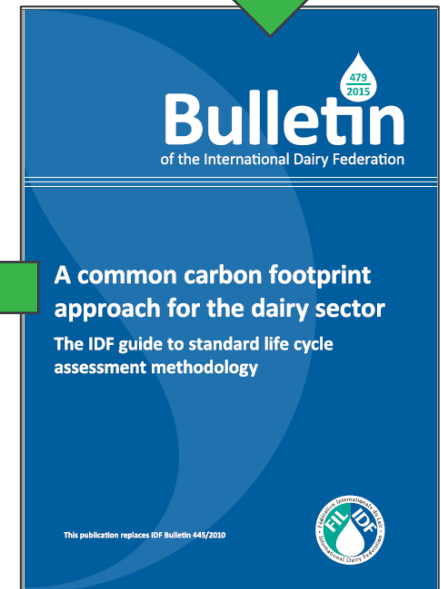
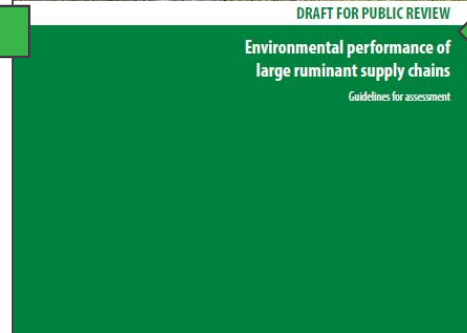
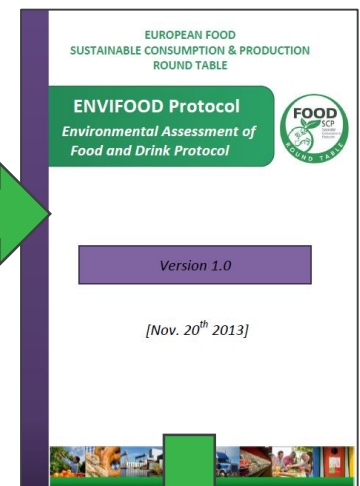
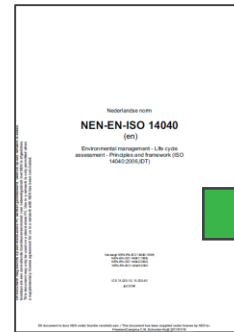
eda 2016 December

connect to the world of dairy

Product Environmental Footprint Category Rules for Dairy Products

Prepared by the Technical Secretariat:
The European Dairy Association (EDA), ACTALIA, the Alliance for Beverage Cartons and the Environment (ACE), the French Environment and Energy Management Agency (ADEME), BEL group, French Commissariat Général au Développement Durable (CGDD), Constantia Flexibles, Coopérative Laitière de la Sèvre (CLS), Centre National Interprofessionnel de l'Economie Laitière & Association de la Transformation Laitière Française (CNIEL/ATLA), Danone, DMK GROUP, the European Container Glass Federation (FEVE), Fontem, FrieslandCampina, the International Dairy Federation (IDF), the Institut Français de l'Élevage (IFILE), REWE Group, and Quantia

EDA (European Dairy Association)
c/o Actalialab, 32-38
13630 Buisson
France
+32 2 948 50 48
www.eurordm.org
eda@eurordm.org
@EDDA_Dairy

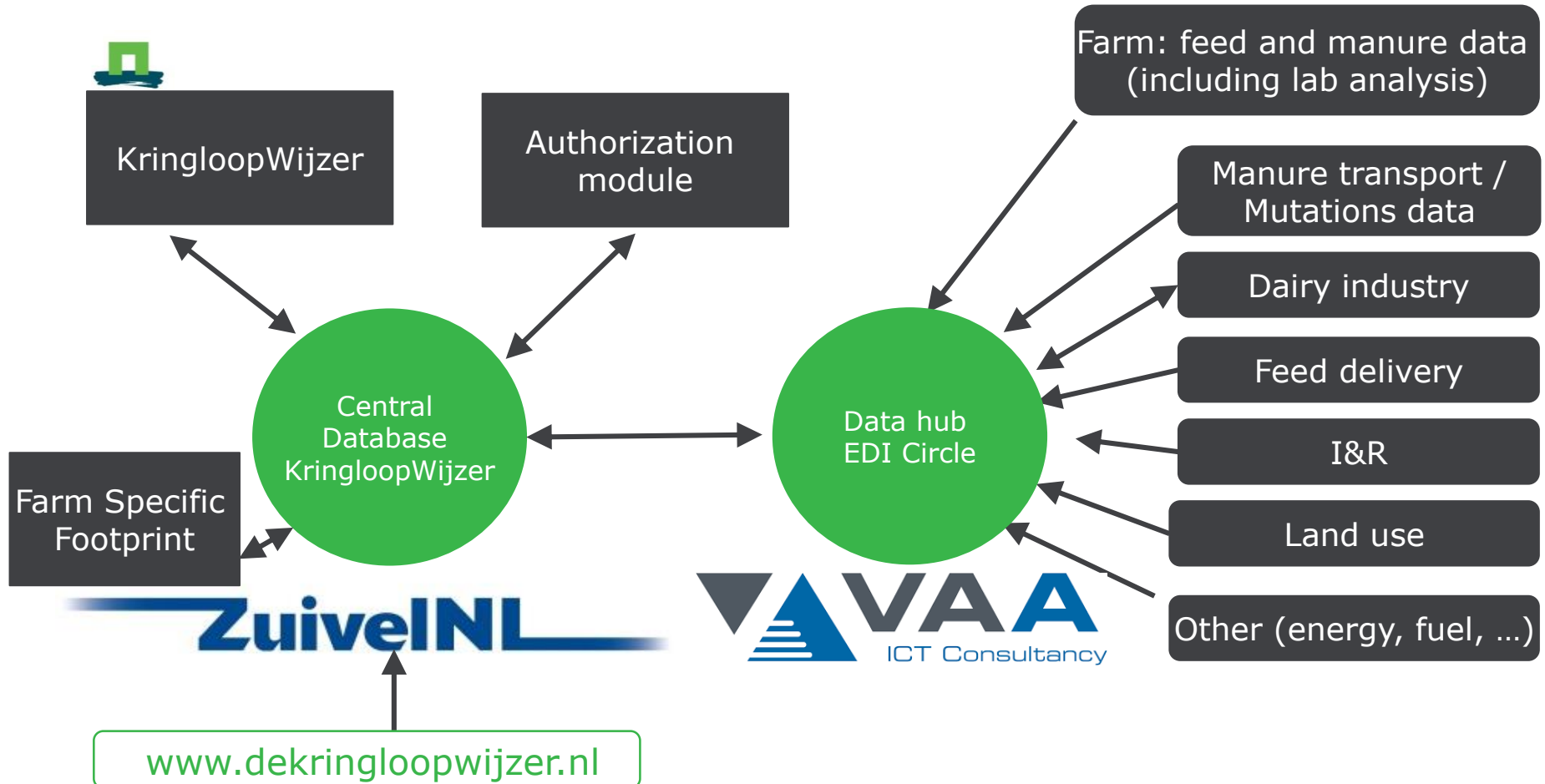


How to get 12000 farmers to work on carbon footprint reduction?

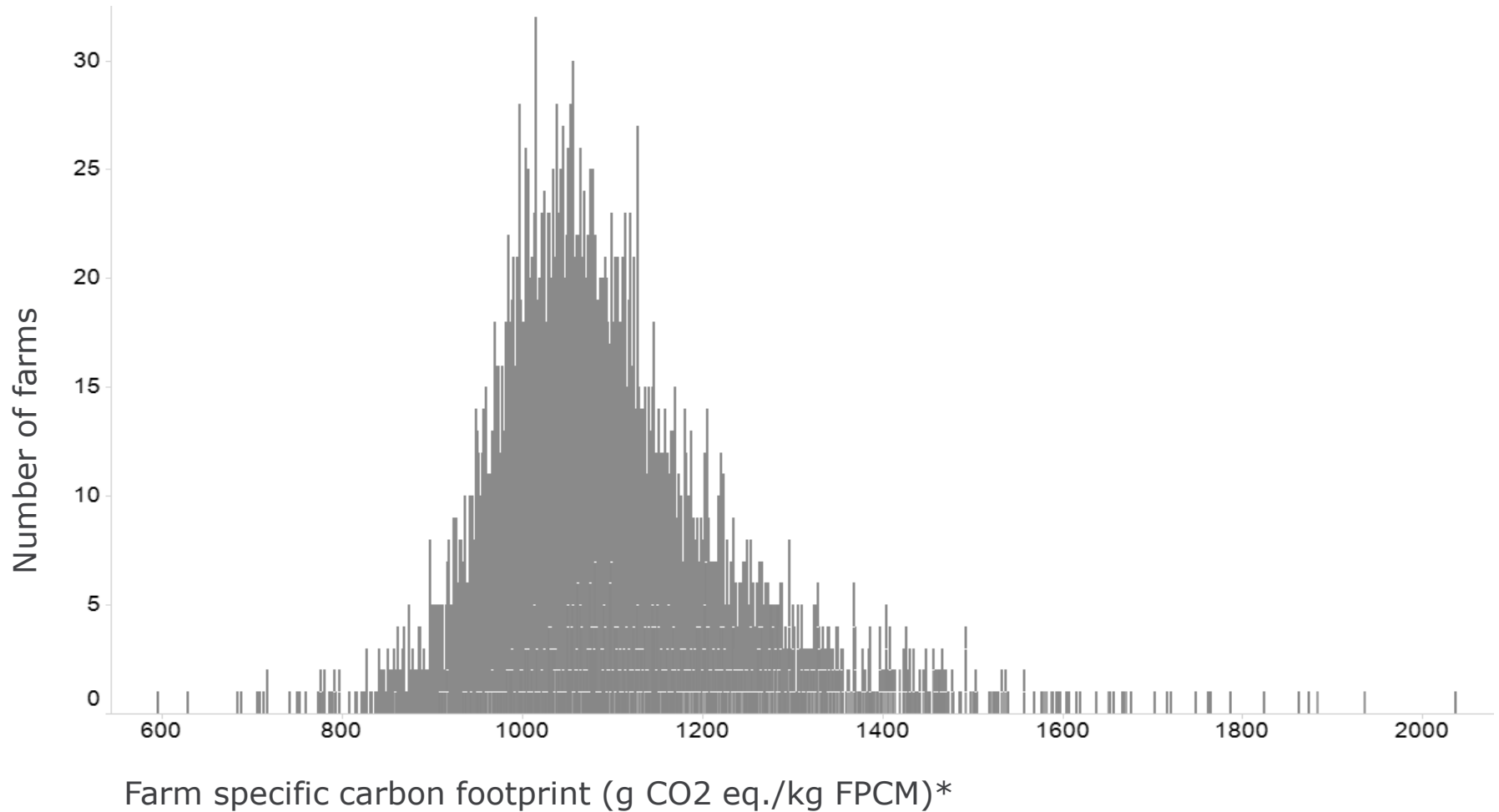
1. Farm specific monitoring
2. Education on reduction options
3. Facilitating on reduction options
4. Rewarding on performance

Need for farm specific carbon footprints

We realized automatized data collection that generates farm specific carbon footprints for all farms in NL on a yearly basis

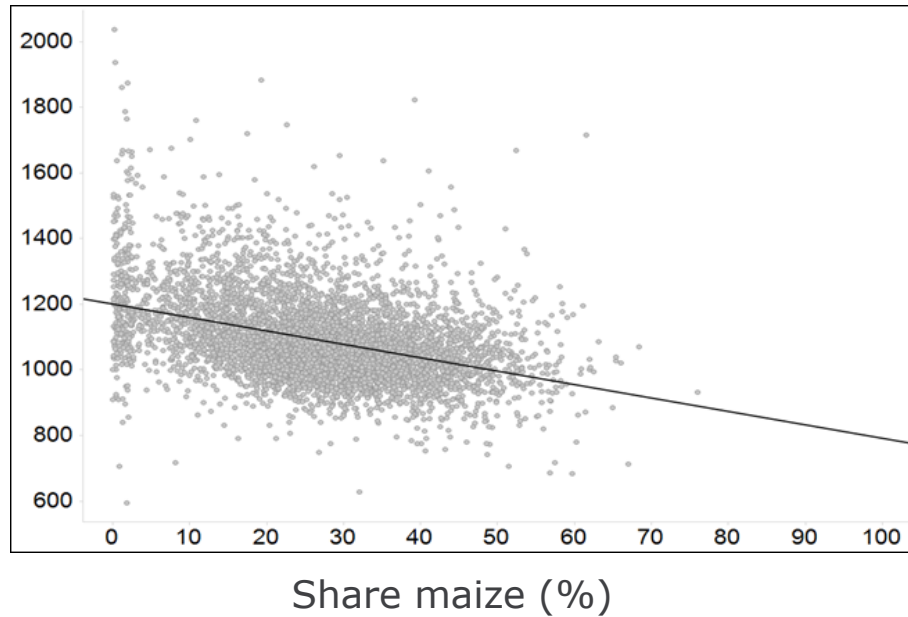


For 2015 results shows a lot of variation, so a lot of room for improvement

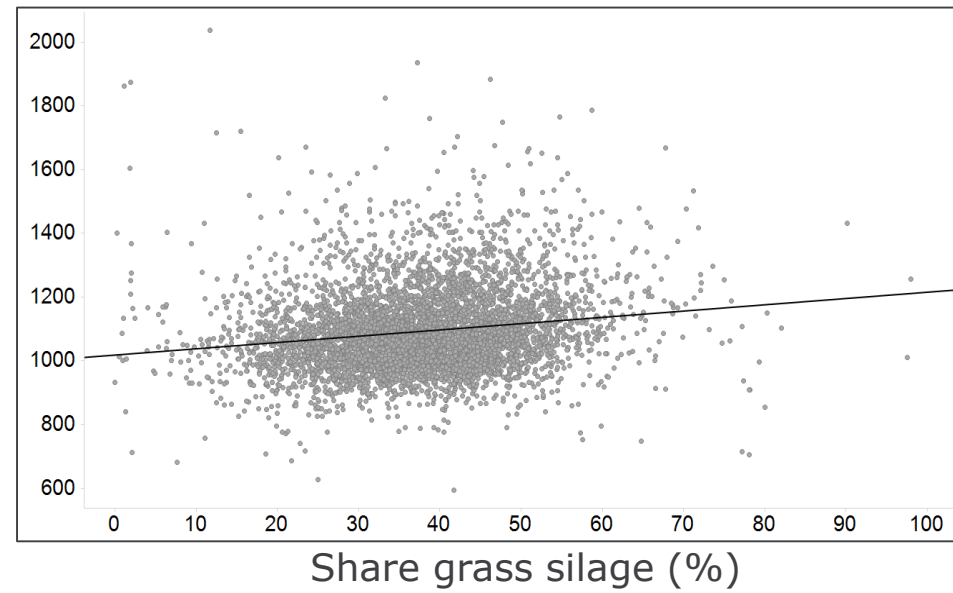


* FPCM = Fat and protein corrected milk (meetmelk)

The model also shows improvement options

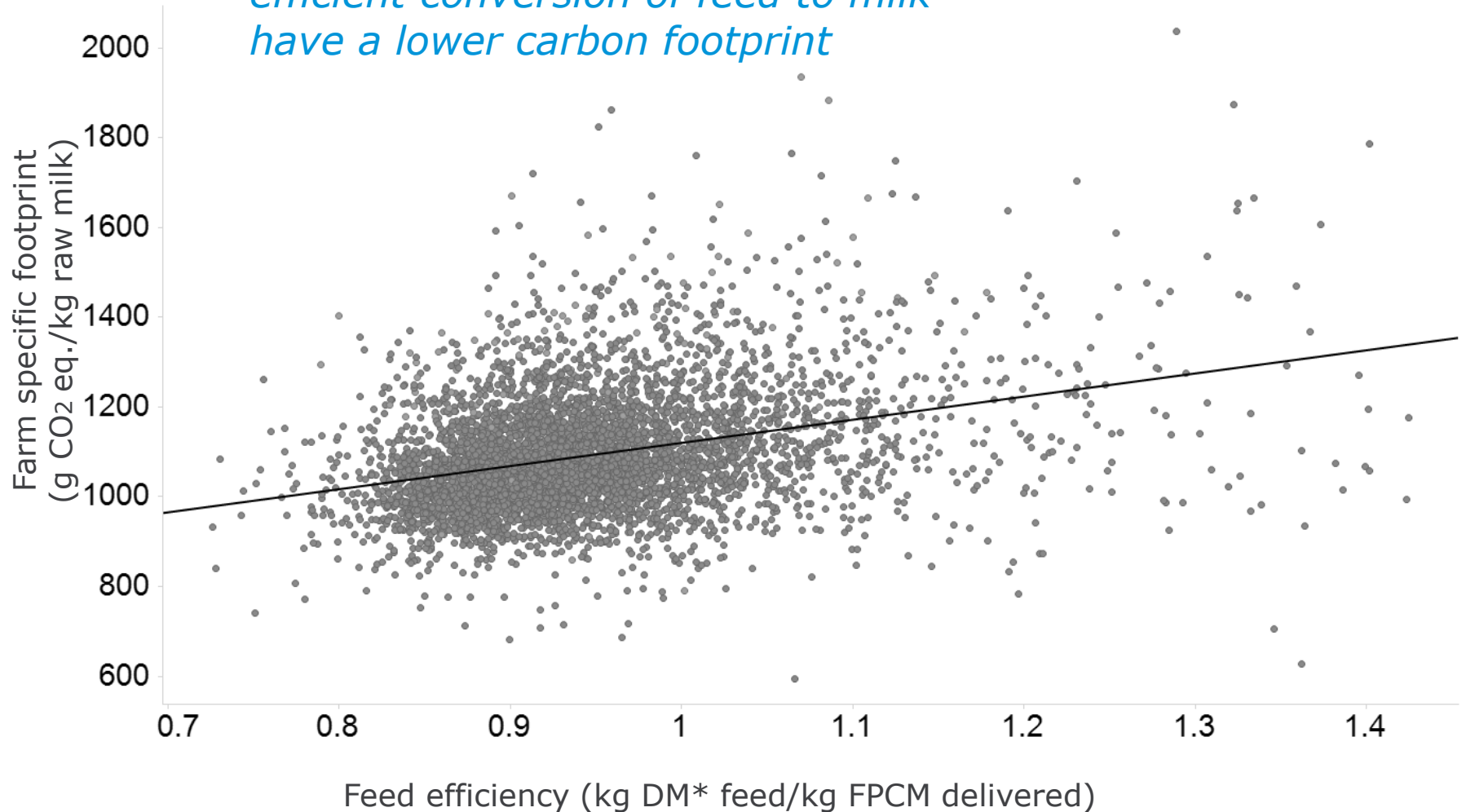


For example a diet with much maize and little grass results in a lower carbon footprint in NL and...



The model also shows improvement options

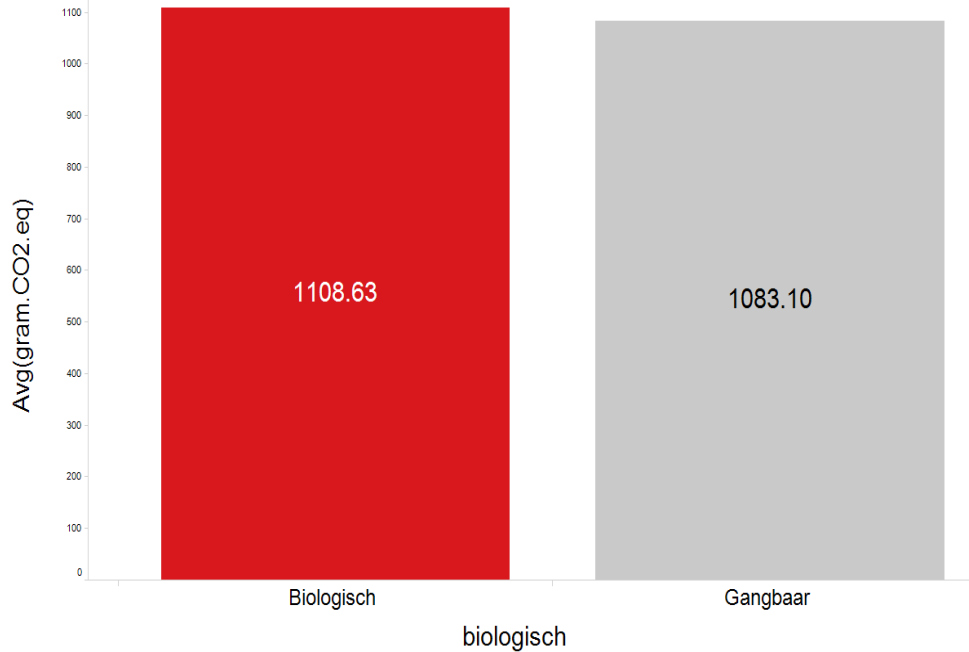
For example: Dutch farms with an efficient conversion of feed to milk have a lower carbon footprint



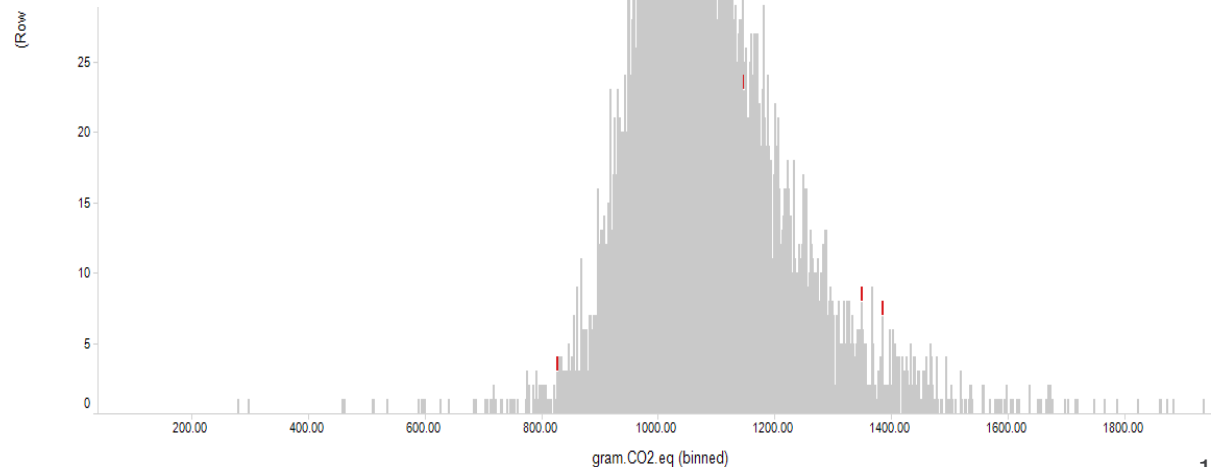
* DM = dry matter

Farm specific monitoring avoids dogmatic statements

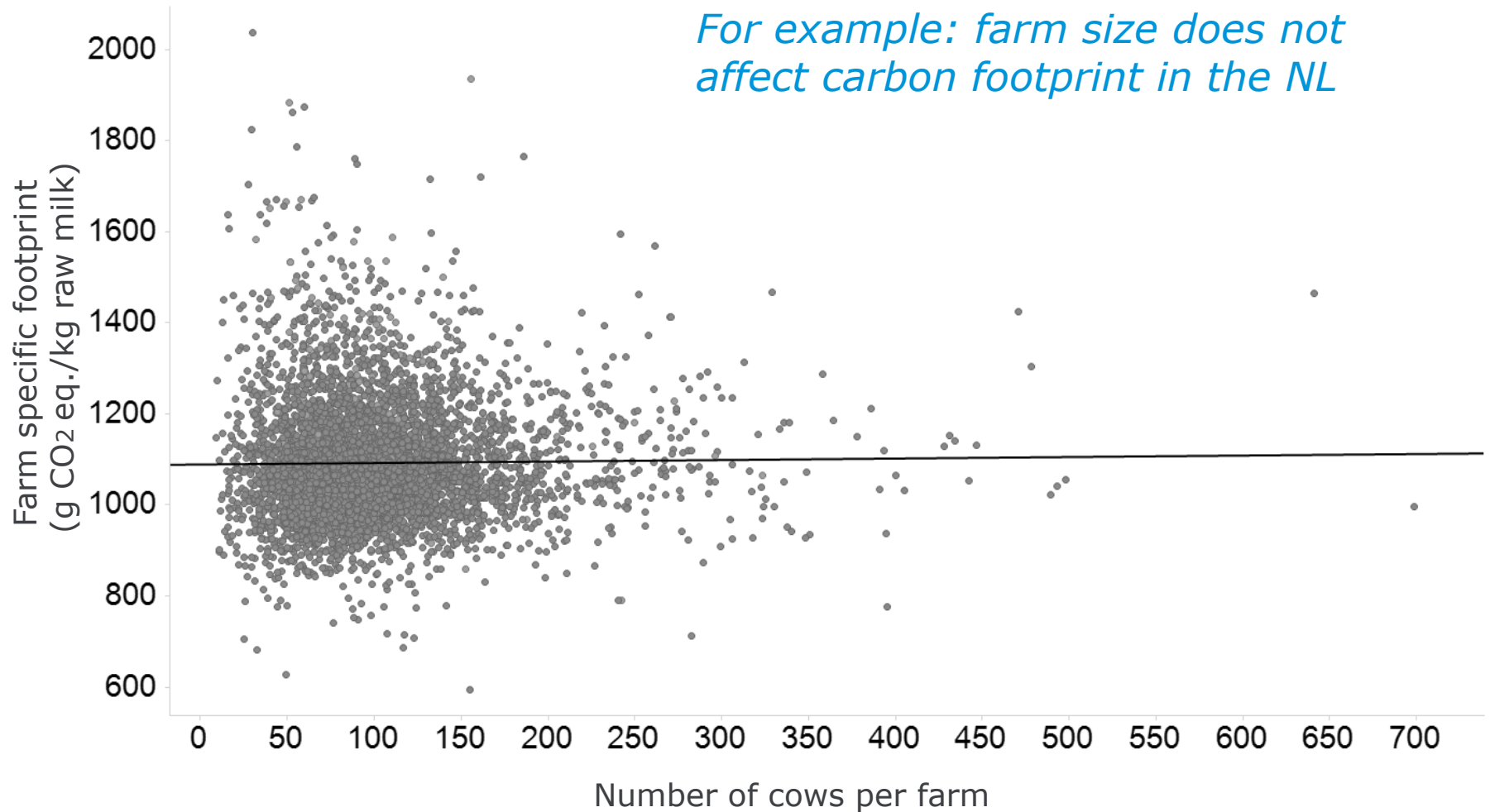
gram.CO2.eq per biologisch



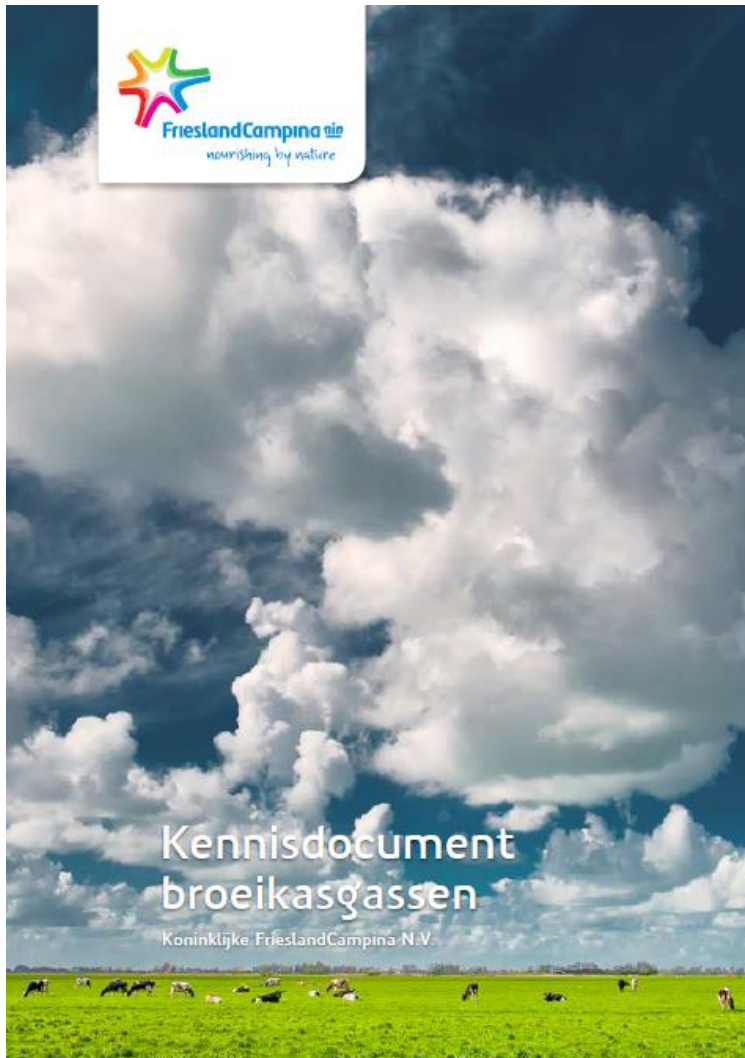
For example: the model shows that organic milk is equally climate friendly as conventional milk and....



Farm specific monitoring avoids dogmatic statements



Education on reduction options



Education and communicate opportunities for reduction:

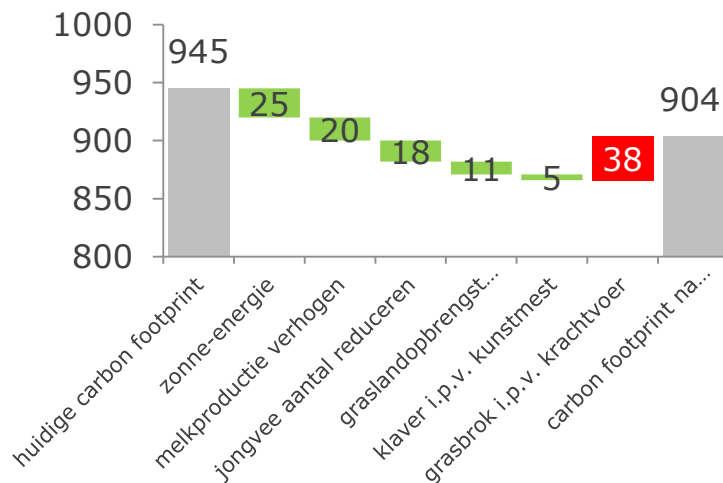
1. Energy saving
2. Sustainable energy generation
3. Good agricultural practices
4. Avoid emissions from manure storage

Facilitate investments:

1. - Project Solar
2. - Project Jumpstart

Stimulate reduction

Create reduction planning tools



Rewarding through redistribution of financial profit based on sustainability performance



Initiate competition between farmers



Communicate performance towards customers

- Inform customers about performance
- Search for opportunities to co-finance farm investments in sustainability: create sustainability fund or start up projects with groups of farmers linked to specific product
- New product development at R&D

Questions?

Question for you: How can feed industries and dairy work together on stimulating footprint reduction and make that measurable in the farm specific carbon footprint?

