

Innovationscenter  
for Økologisk Landbrug

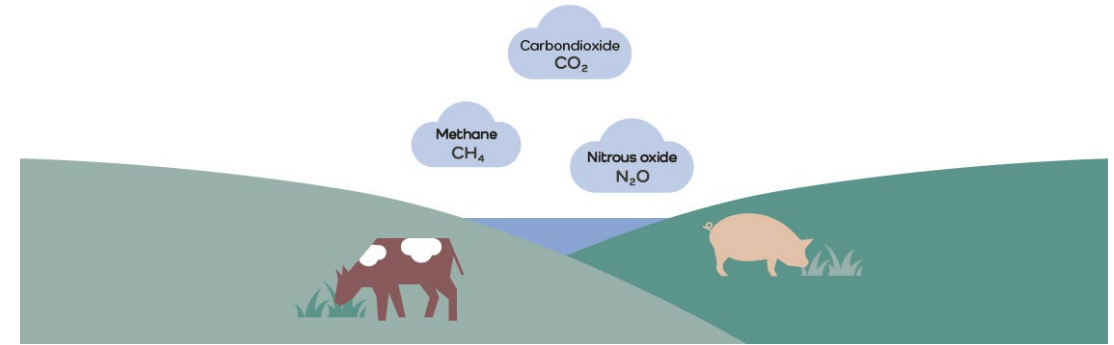
# ESGreenTool Climate

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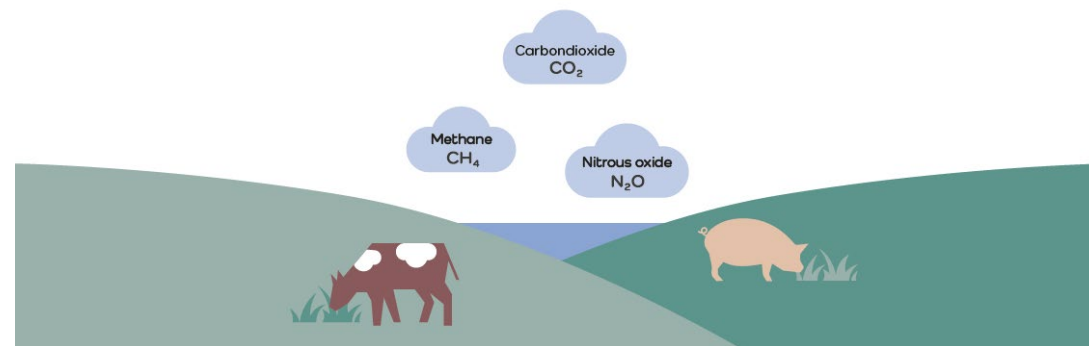
# Agenda



1. Mutual introduction
2. Short background presentation of ESGreen Tool Climate
3. A guided tour around ESGreenTool Climate 1 and 2

# ESGreenTool Climate - history

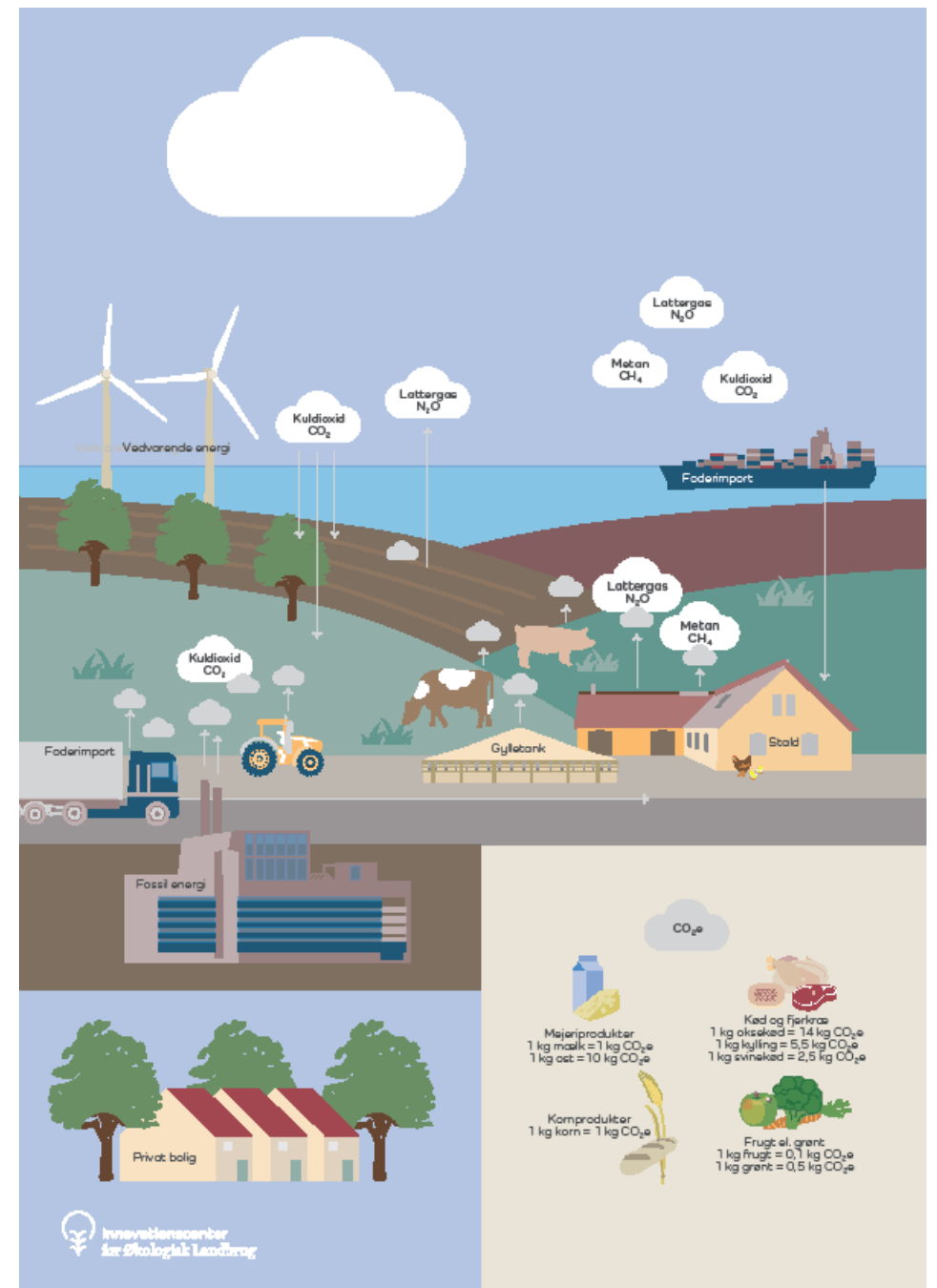
- The concept was initiated by Organic Denmark in 2009
- Development of farm action plans
- First project funded was "Landmandens klimaværktøj" then "Landbrugets klimaværktøj"
- 2019-2021: Collaboration between SEGES Innovation and Organic Denmark/later ICOEL
- 2022: Forenet Kredit invested in digital development and education of advisors
- Renamed ESGreen Tool and launched in 2022
- May 2023: Cooperation agreement between Innovation Centre for Organic Farming and SEGES for further development and inclusion of more sustainability parameters.
- ESGreen Tool Climate / ESGreen Tool Biodiversity / ESGreen Tool Social etc.
- ESGreen Tool Report



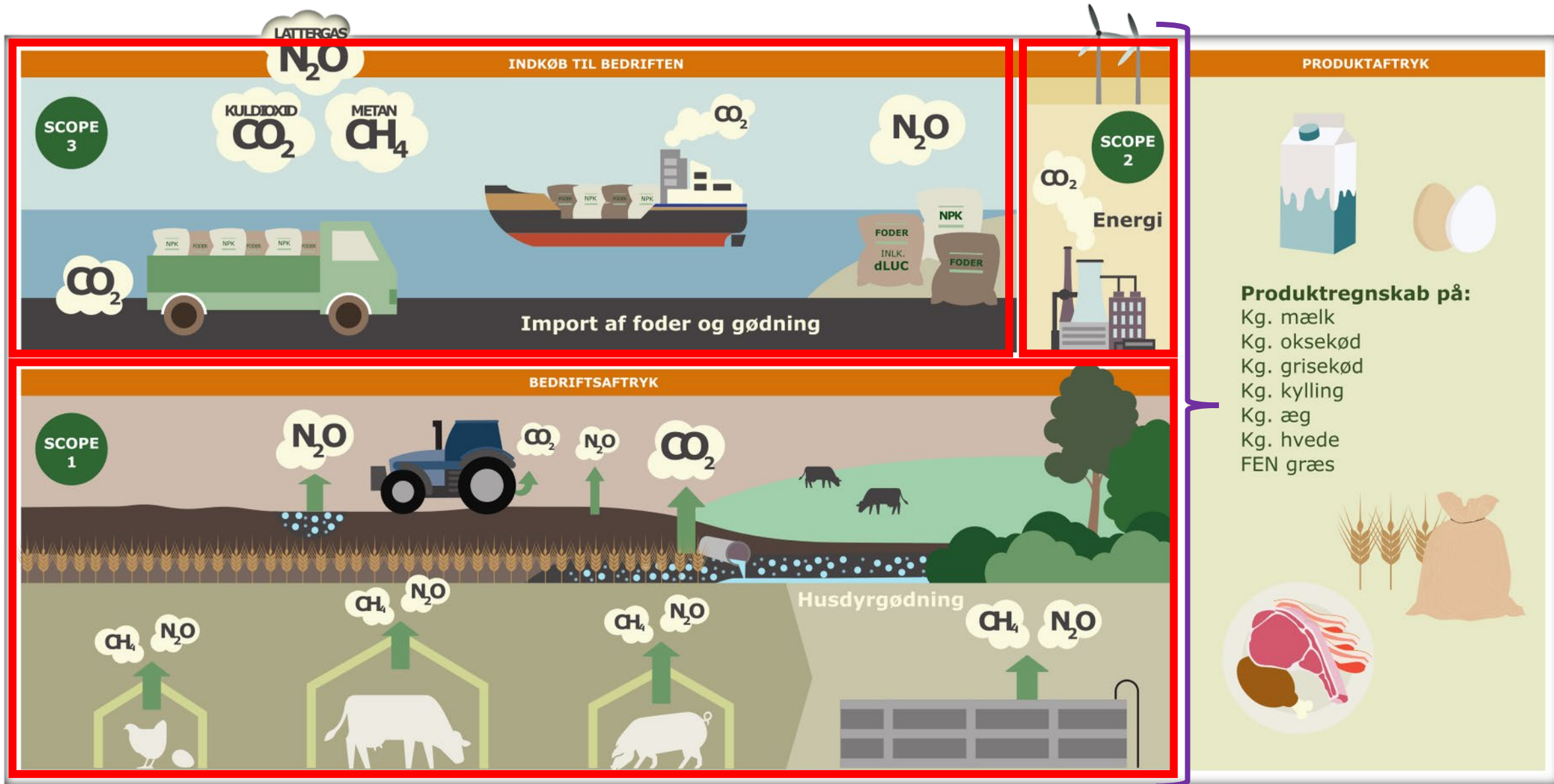
# Holistic and close to practice

Farm calculations including emissions from:

- ✓ Enteric fermentation/digestion
- ✓ Manure in barn and stock
- ✓ Manure distributed to the fields
- ✓ Turnover of crop residues
- ✓ Nitrate leaching
- ✓ Energy consumption and production of green energy
- ✓ Import of resources such as feed, straw, animals
- ✓ Carbon sequestration balance in soil



SCOPE 1 = Territorialt aftryk



- Produktregnskab på:**
- Kg. mælk
  - Kg. oksekød
  - Kg. grisekød
  - Kg. kylling
  - Kg. æg
  - Kg. hvede
  - FEN græs

# Calculation methods

## National inventory:

- Follows the methodology of IPCC guidelines 2006 for national inventory report
- GHS emission factors for 100-year perspective:
  - 1 kg CO<sub>2</sub> = 1 kg CO<sub>2</sub>-equivalents
  - 1 kg Methane = 25 kg CO<sub>2</sub>-equivalents
  - 1 kg N<sub>2</sub>O = 298 CO<sub>2</sub>-equivalents
  - 1 kg Carbon sequestration = 3,7 kg CO<sub>2</sub>-equivalents
- Emission sectors 1) Energy, 2) Transport 3) Agriculture and forestry 4) Waste and water 5) Industrial processes
- Sector 4 + 1 and 2 + other imported resources (not territorial)

## Data levels:

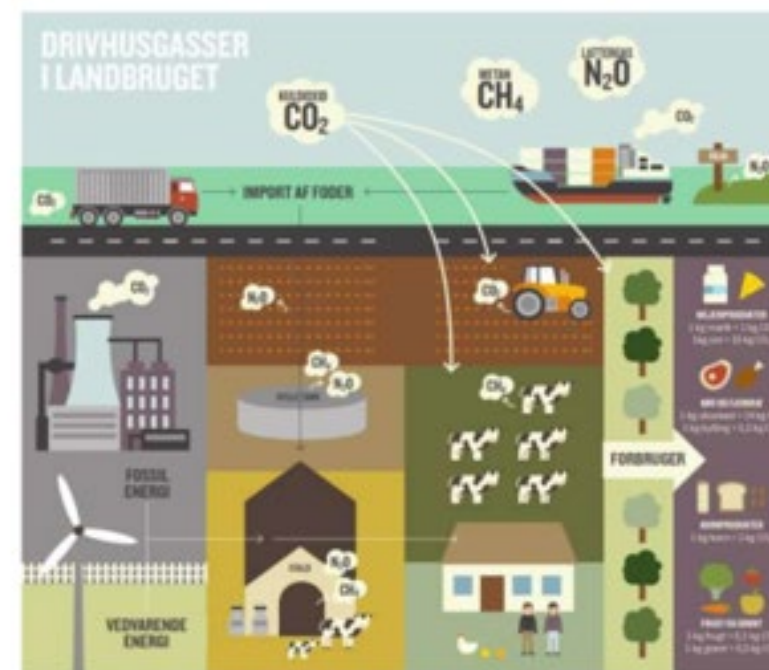
1. Farm specific data as primary data = Tier 3 (measured or modelled)
2. Danish average values (reference value) as secondary data = Tier 2 (databases)
3. International standard values as IPCC estimates = Tier 1 (international factors)



## Landbrugets klimaværktøj 1.0

### Klimaværktøj til beregning af klimaaftrykket på den enkelte bedrift

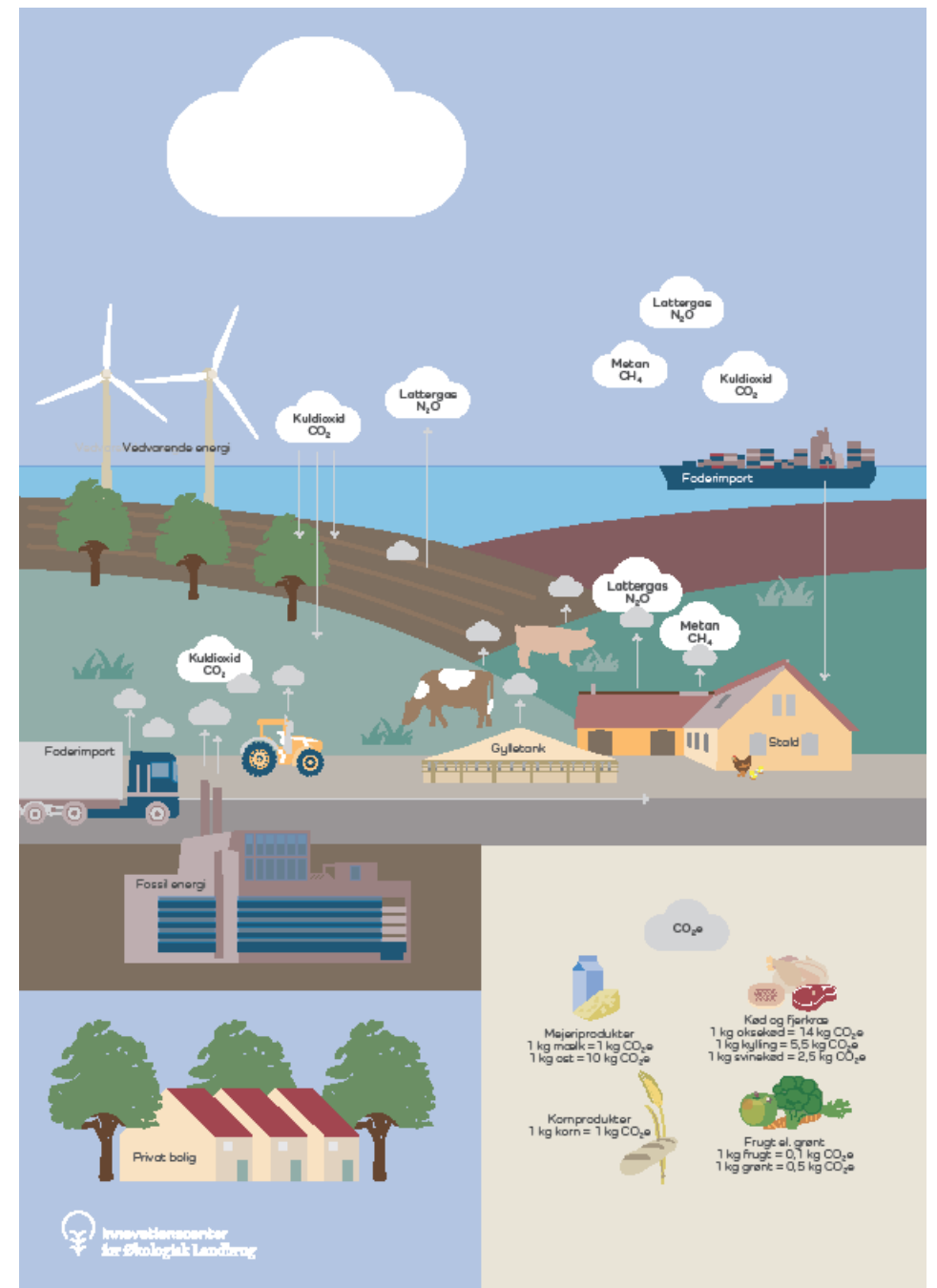
Notat om beregningsgrundlaget for emissionskilder og virkemidler 2021



# Automatic data accessibility

Existing databases and action tools:

- ✓ Manure registration (Gødningsregnskabet)
- ✓ MarkOnline for crop rotation planning and registration of field management actions
- ✓ Carbon sequestration in soil: report conducted by AU, AGRO
- ✓ Product level milk: cooperation with Arla
- ✓ Carbon sequestration balance in trees: cooperation with Skovkortet



# Calculations of carbon sequestration



- 100 year perspective: 9,7% of the supplied carbon will stay stable in the soil.
- Carbon input for each field is relative to the average carbon input in Denmark.
- Negative numbers in the farm action results states input to the carbon sink of the soil.
- Positive numbers states a loss of carbon to the atmosphere from the soil sink.



# Results and output

Climate impact; ton CO<sub>2</sub>e per year

Total emissions from the farm

Territorial emissions from the farm

*Emissions per hectare*

*Emissions per kg. product*

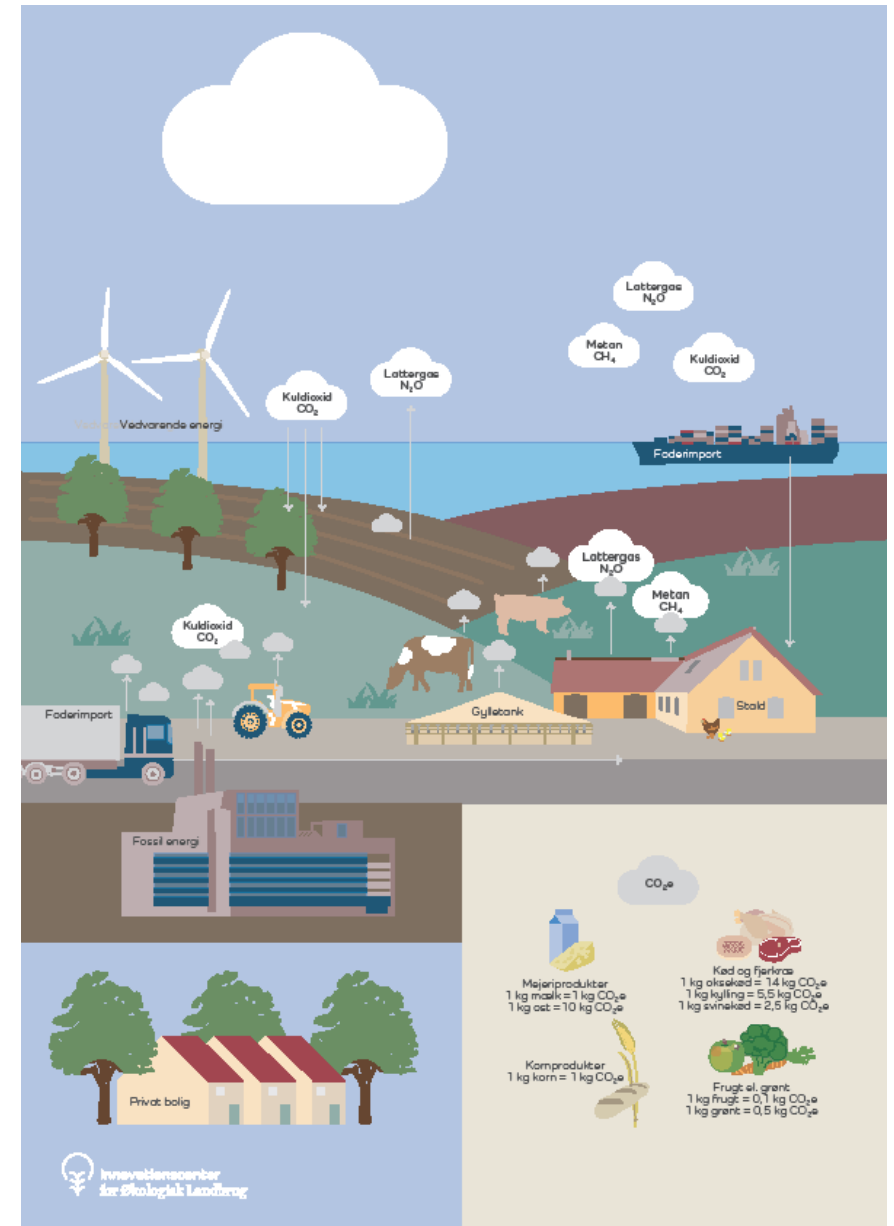
Mitigation strategies and reduction potential

Total emissions from the farm

Territorial emissions from the farm

*Emissions per hectare*

*Emissions per kg. product*



# ESGreenTool

- Pt. to produkter
  - ESGreenTool *Report*
  - ESGreenTool *Climate 1&2*
- *Læs mere på [www.esgreentool.dk](http://www.esgreentool.dk)*

## ESGreenTool Report

Nu kan du nemt dokumentere dine tiltag inden for miljø, ledelse og det sociale område. Rapporten indeholder mere end 116 målepunkter - f.eks. inden for arbejdsforhold, biodiversitet, medicinforbrug og dødelighed. Sammen med din rådgiver kan du rapportere de data, der er relevante for din bedrift.

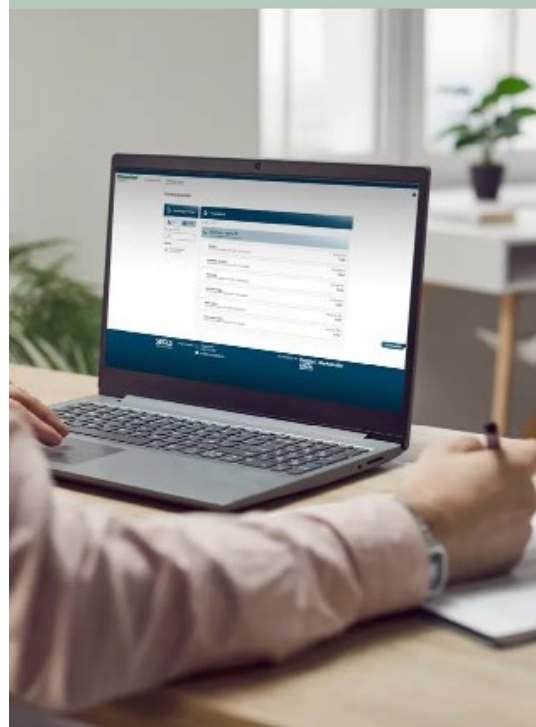
### Brug rapporten som dialogværktøj

Brug f.eks. ESGreenTool Report i din dialog med banken eller andre samarbejdspartner, som gerne vil have dokumentation for din ESG-indsats. Rapporten er anerkendt af flere af landets banker.

Du kan tilgå en demoversion af rapporten allerede nu, men ønsker du at kunne gemme og printe dine rapporter, skal du købe et abonnement. Bemærk, at du skal bruge et (gratis) AgroID for at tilgå rapporten.

PRØV DEMOVERSION AF ESGREENTOOL REPORT

KØB ABONNEMENT PÅ ESGREENTOOL REPORT



## ESGreenTool Climate

Med Climate kan du:

- beregne den aktuelle klimabelastning på din landbrugsbedrift som antal CO<sub>2</sub>-ækvivalenter for hele bedriften
- hurtigt få overblikket over de CO<sub>2</sub>-reducerende virkemidler, som har den største effekt.
- beregne produktaftrykket for slagtekyllinger samt dine afgrøder på markerne på baggrund af dine egne data i Mark Online. Inden længe vil du kunne beregne produktaftryk for grise.

I en periode vil der være to programmer i klimaværktøjet: Climate 1 og Climate 2. Som abonnent har du adgang til begge løsninger. **Bliv klogere på Climate 1 og 2.**

I ESGreenTool Climate er der to moduler: 'Mark' og 'Husdyr'. Med markmodulet kan du beregne klimaaftrykket for marken. Et abonnement på Climate skal altid indeholde markmodulet. Hvis du har husdyr, skal du derudover tilvælge Husdyr.

BESTIL ESGREENTOOL CLIMATE

# ESGreenTool *Climate*

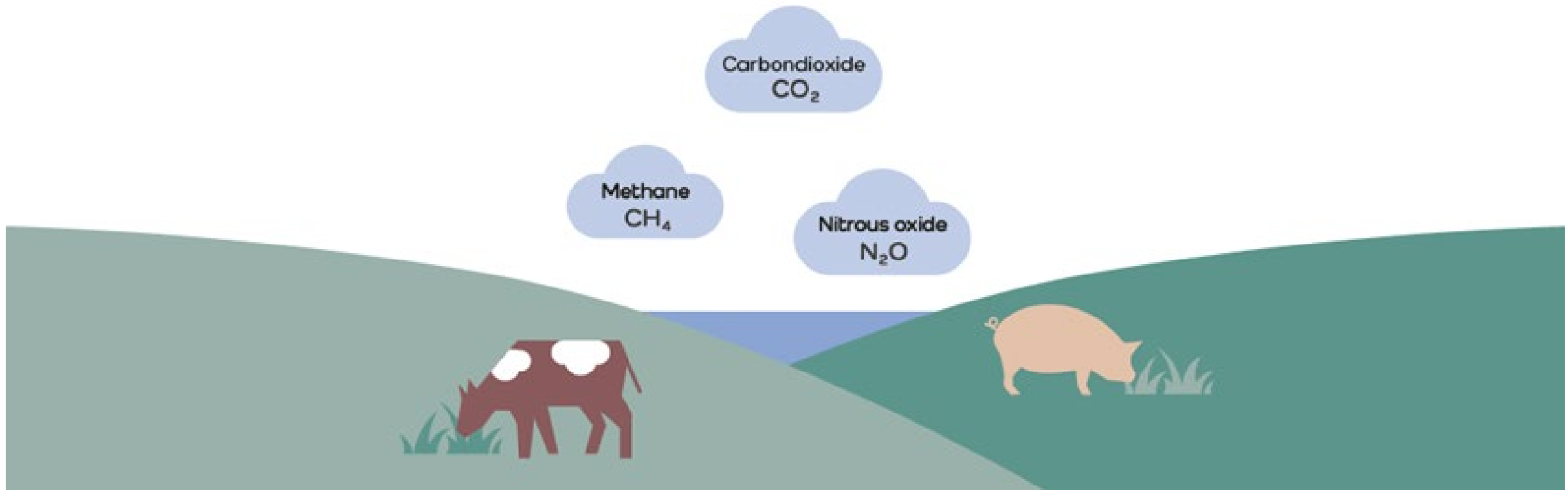
## ***Climate 1***

- Cover all 30.000+ farms with dairy, pigs, chickens, eggs and crop production
- Automatically transfer of data and calculation at farm level based on manure registrations (gødningsregnskab) and standard values.
- Possible to add barn technologies
- Scenario modelling
- No product level calculation

## ***Climate 2***

- Both farm and product level calculations for pig, poultry and crop production
- More options for adjustments in the feed rations
- Needs more manual data input
- Is based on the tool MarkOnline
- Have not finished development for dairy and egg production at product level

# Guided tour in ESGreenTool Climate



# Further questions?

