

How does the advisory service deal with the climate issue?



Focus on nutrients

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Swedish Board
of Agriculture

Co-operation project between:

- **Swedish Board of Agriculture**
- **Federation of Swedish farmers**
- **County administrative boards**



55 Advisory firms reaching about
10 000 farmers/landowners with
>25 animal units or >50 hectares

The project is financed by Swedish Rural Development
Program and Swedish environmental taxes
Budget: 3-4 million Euro per year



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Agriculture's Climate Challenges

Current Focus
in Greppa

Higher demands
from society

Meeting
demand

Adaptation

To a
**changed
climate**

Reduce
**fossile energy
dependence**

**reduced
emissions**

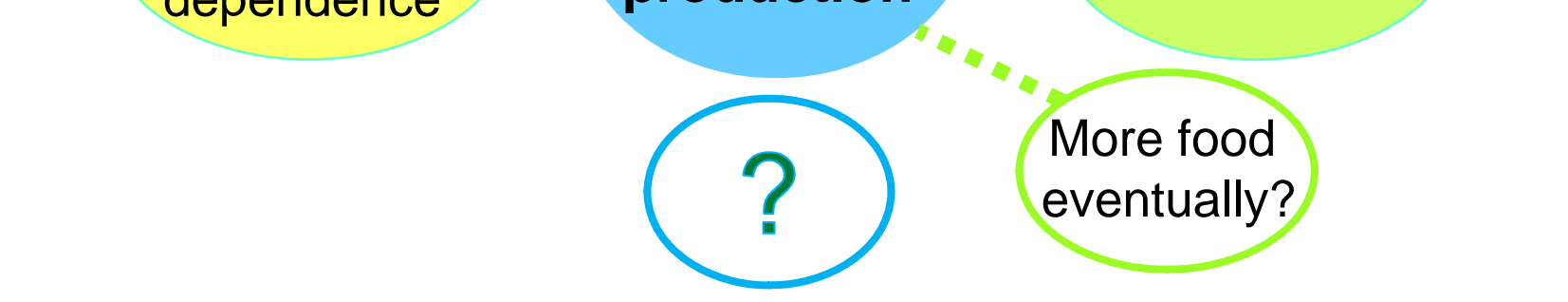
**Long-term
sustainable
production**

?

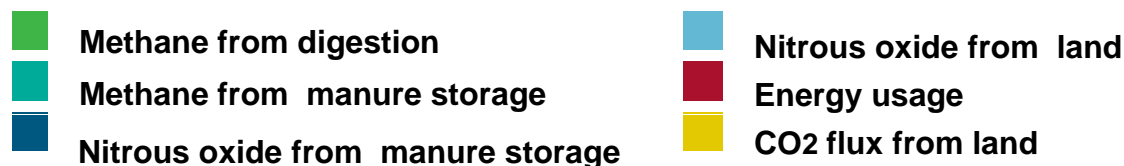
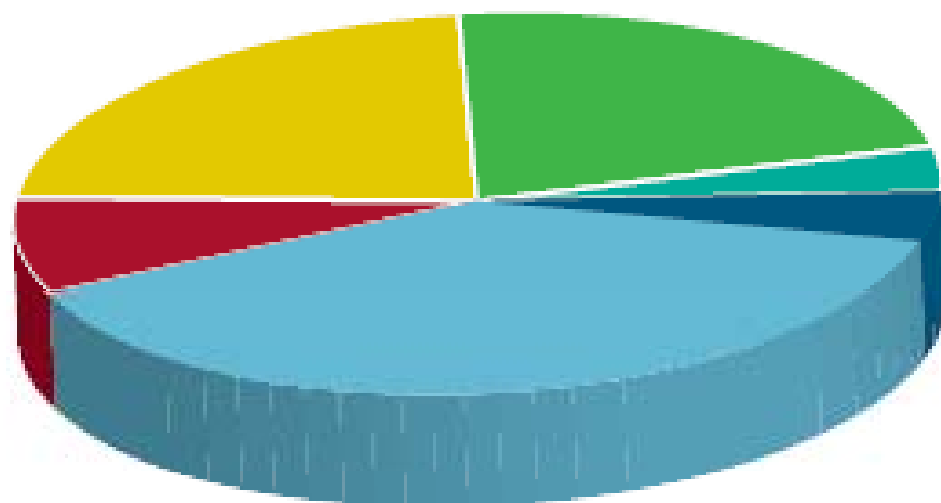
Climate labeled
& **"Climate-Smart"**
products

production og
bio-energy

More food
eventually?



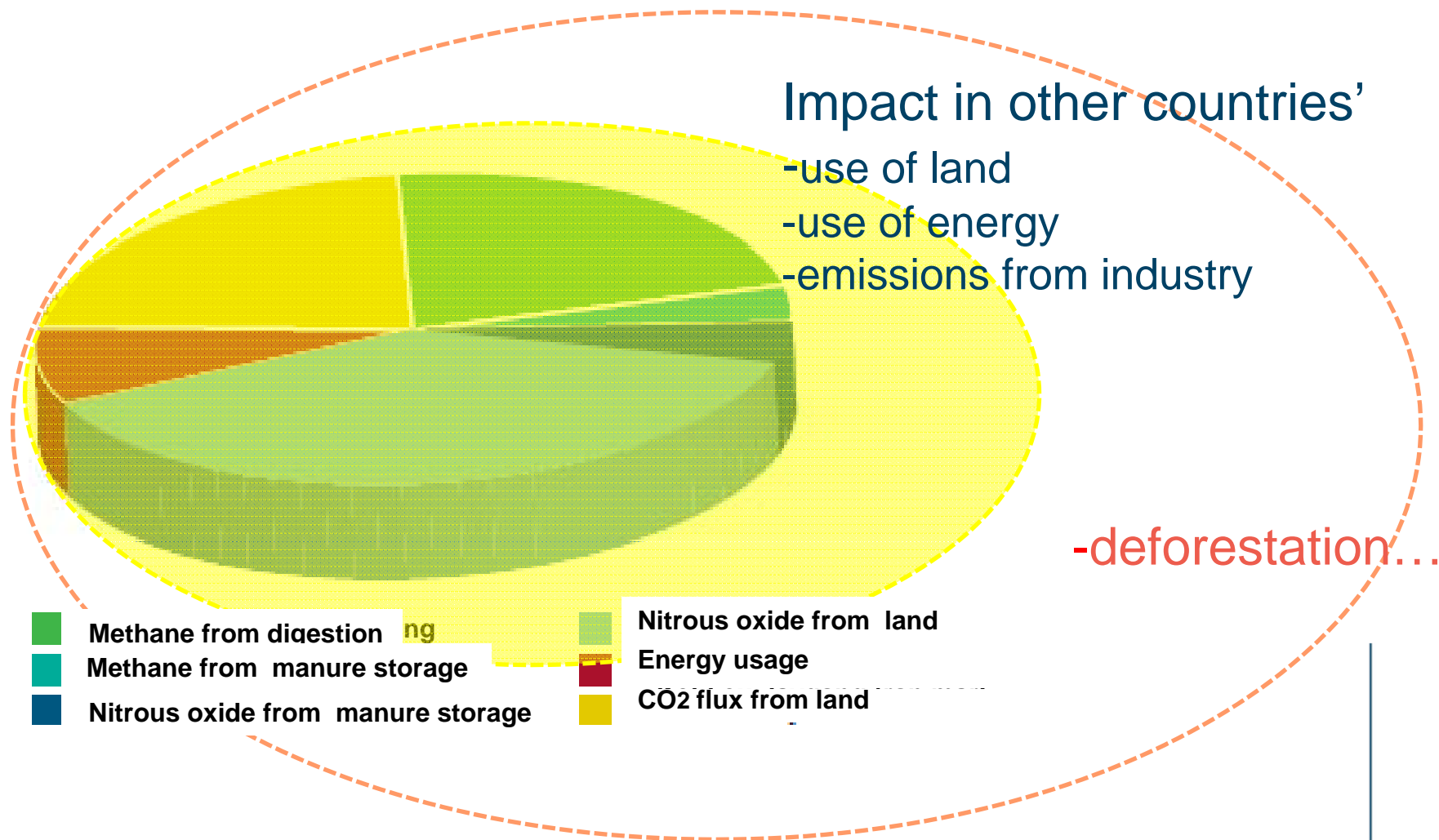
Distribution of Greenhouse Gas Emissions from Agriculture in Sweden 2007



Agriculture belongs to the non-trading sector that aims to reduce emissions by 40% by 2020 in Sweden.

No objectives are set for agriculture yet.

Distribution of Greenhouse Gas Emissions from Agriculture in Sweden



What is Greppa Näringen?

Based on individual advice and on-farm education

- Voluntary participation
- Repeated farm visits
- Farm-specific measures are identified
- Follow-up on each farm
- Education for advisers and
- Courses for farmers on regional level



To meet government environmental objectives

- Zero Eutrophication
- **Reduced climate impact**
- Good-quality groundwater
- A non-toxic environment
- Thriving wetlands

The objective is to **Increase awareness and knowledge** in order to **change behaviour**.
...and at the same time increase farm revenue



35 different advising modules adjusted to production sector

6-7 advisings during approx. 3 years

Crop farm



INLEDNING

RÅDGIVNING

- › Växtföljd och bördighet
- › Kvävestrategi
- › Klimatkollen
- › Upprepad växtnäringsbalans
- › Fosforstrategi
- › Växtskydd
- › Markpackning
- › Våtmark

Dairy/cattle farm



INLEDNING

RÅDGIVNING

- › Utfodring
- › Grovfoderodling
- › Betesstrategi
- › Klimatkollen
- › Upprepad växtnäringsbalans
- › Bygg
- › Växtskydd
- › Fosforstrategi

Hog farm



INLEDNING

RÅDGIVNING

- › Växtföljd och bördighet
- › Utfodring
- › Klimatkollen
- › Kvävestrategi med stallgödsel
- › Upprepad växtnäringsbalans
- › Bygg
- › Växtskydd

Introduction with nutrient balance

Follow up with nutrient balance. What measures have been carried out? Is there need for further advise?

Climate shall be a common thread
in Greppas advising



Climate introduced in 2010

Since 2001:

41 000 farm visits - made by 250 advisors to reduce losses and improve environmental sustainability

- december 2010 Climate Check was introduced
- 2011 until now about 350 climate check farm visits
- Now there are >40 climate advisors
- The majority of active Greppa advisors have taken part in some of Greppas climate related education days



- Inspire and motivate farmers to
 - cost effective climate measures
 - resource efficiency
 - adjust production – environmentally Sustainable
- Vision for climate advising in Greppa
We spread knowledge and inspiration about climate smart measures on the farm
- Our advising gives knowledge
About how the agricultural sector can reduce climate impact in a cost efficient way



Climate Related Advisory Service in Greppa for dairy and cattle

- Crop nutrient balance
- Climate Check
- Feeding advice
 - Feeding strategy
 - One day feeding control
- Roughage production
- Pasture strategy
- Barn environment
 - Construction planning
 - Stable environment and the external environment
- Soil compaction
- Test of mineral manure spreader
- Precision cultivation

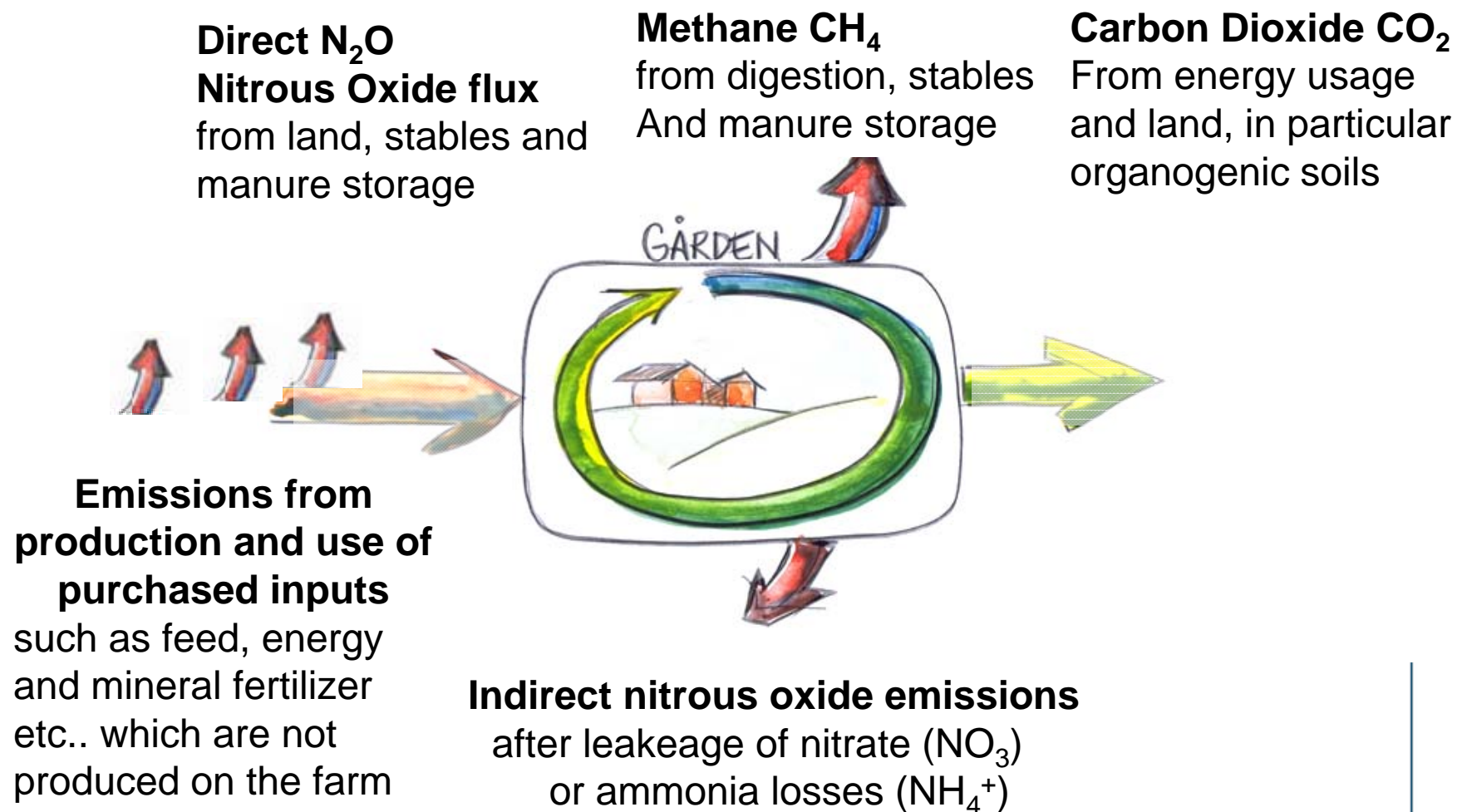


- **Energy Check**
to “smaller”
milk and meet
farms from 2012

Time for adviser including
preparing time and analysis
10-12 h (2-3 h in the farm)

- Preliminary climate advice
- Mapping climate gas emissions
- A guide to continued climate-related counseling in Greppa and regionally

Loss pathways in Agriculture



Calculation Tool used in Climate Check

Simplified "Carbon foot print" on farm level
expressed in tons CO₂e

What big/small, what is relevant?

Still nothing on the measures

The calculations are based on templates

The tool continues to develop



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Example:

Dairy farm 80 cows

80 ha arable land

20 ha natural pasture

Short Production Facts

Average product 9500 kg

ECM per cow and year

Feed Concentrate:

Cereal and concentrate

Roughage own production of good ley

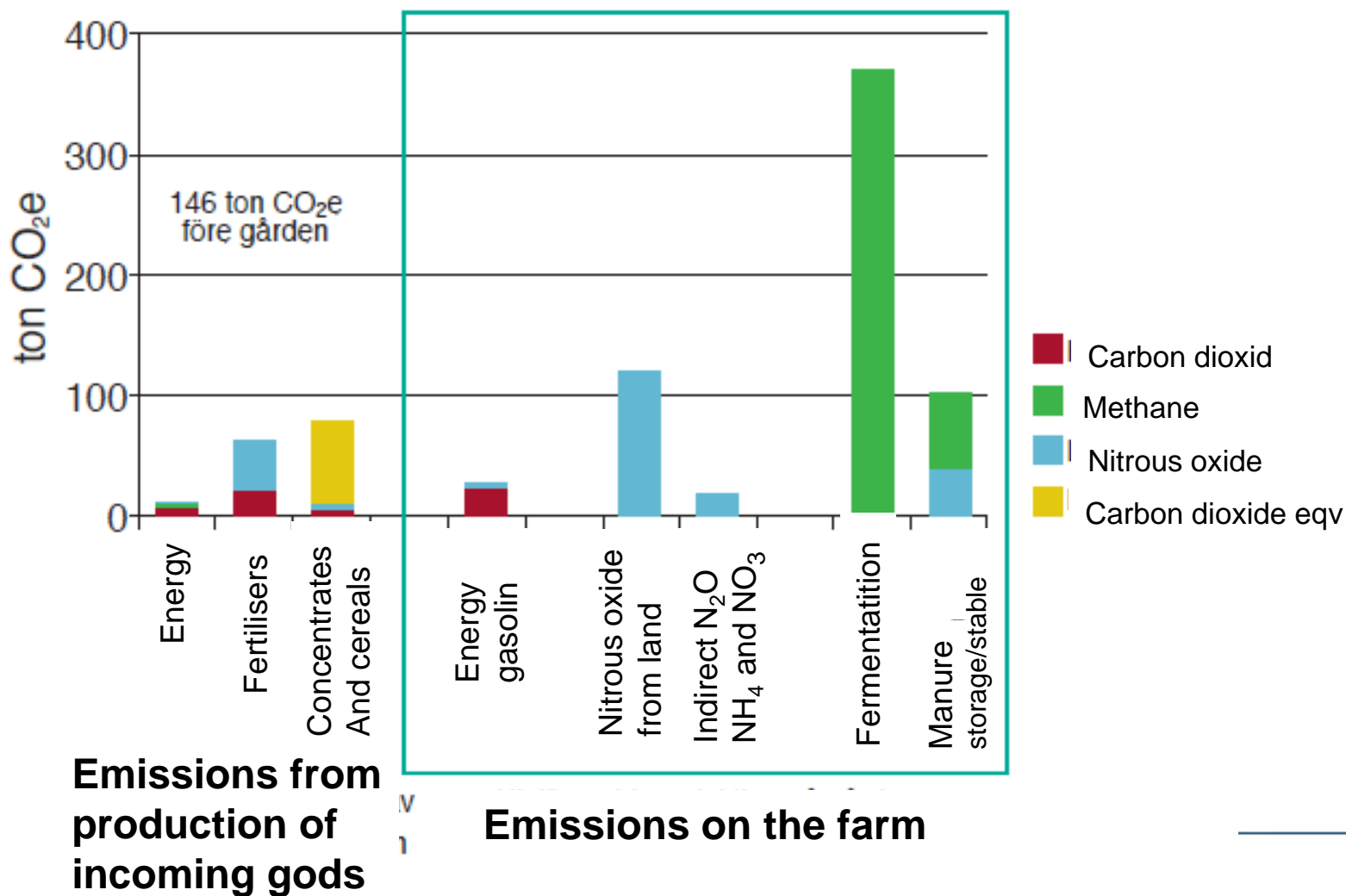
Recruitment percentage of heifers: 40%

Bull calves are sold after weaning



Example – conventional farm with 80 dairy cows

Total emissions GHG 780 ton CO₂e



How to reduce GHG losses "coming to the farm"?

Choose incoming goods with smallest possible "carbon footprint"

- Concentrate
- Fertilizers
- Energy

Minimize buying of protein concentrate

- maximize protein and energy in ley production on the farm
- Start cooperate with nearby farmers

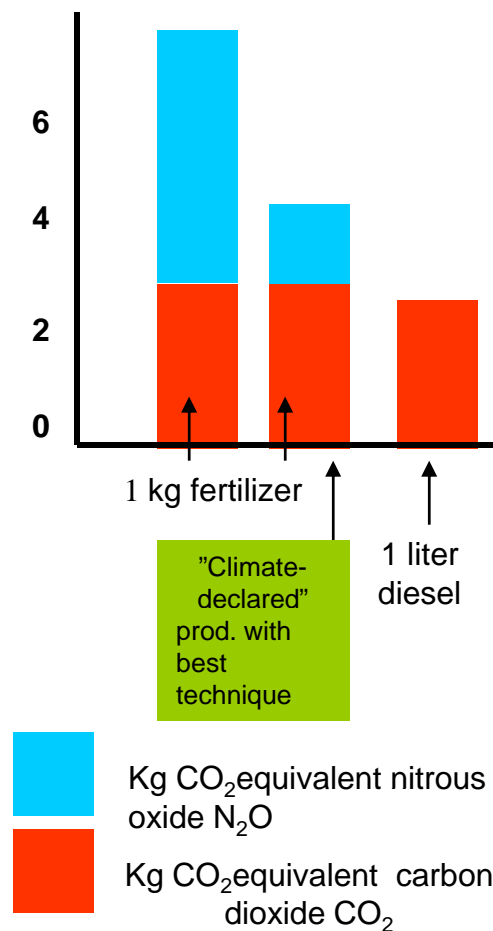
Avoid losses in the feed chain

Avoid surplus feed eg.

A saved kg of nitrogen
reduces emissions more than
a saved liter of diesel



Every kg nitrogen plays a key role
for climate

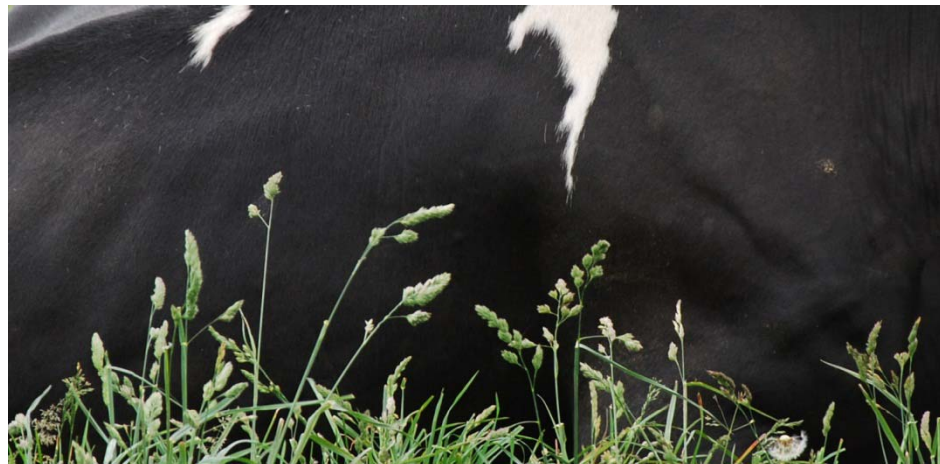


Continue working with resource efficiency in the field

- Reduce liquid manure at fall
- Change cultivation process from
 - fall to spring
 - from early to late fall
- Delay termination of grassland
- Adapt nitrogen dose after
 - crop need
 - In field differences
 - direct organic manure effect
 - long-term organic manure effect
 - move manure to fields in crop farms
- Balance between NPK and other micronutrients
- Avoid long term problems like compaction, flooding eg.

Continue working with **resource efficiency** in recruitment and dairy production

- Use concentrate with lower carbon foot print
- Minimize feed waste
- Lower age at first calving
- Keep good animal health



Don't forget the long term and the need for adaptation to climate change

- avoid soil compaction
- Look over drainage
- Take climate and energy into account when new investments are made
- Adjust buildings to coming needs
 - To keep animals healthy
 - To avoid losses in the stable
 - Minimize losses from manure storing
- Will the water need be covered in the long run?
- Can the land be used in a different way?
- Use the manure for biogas production before spreading

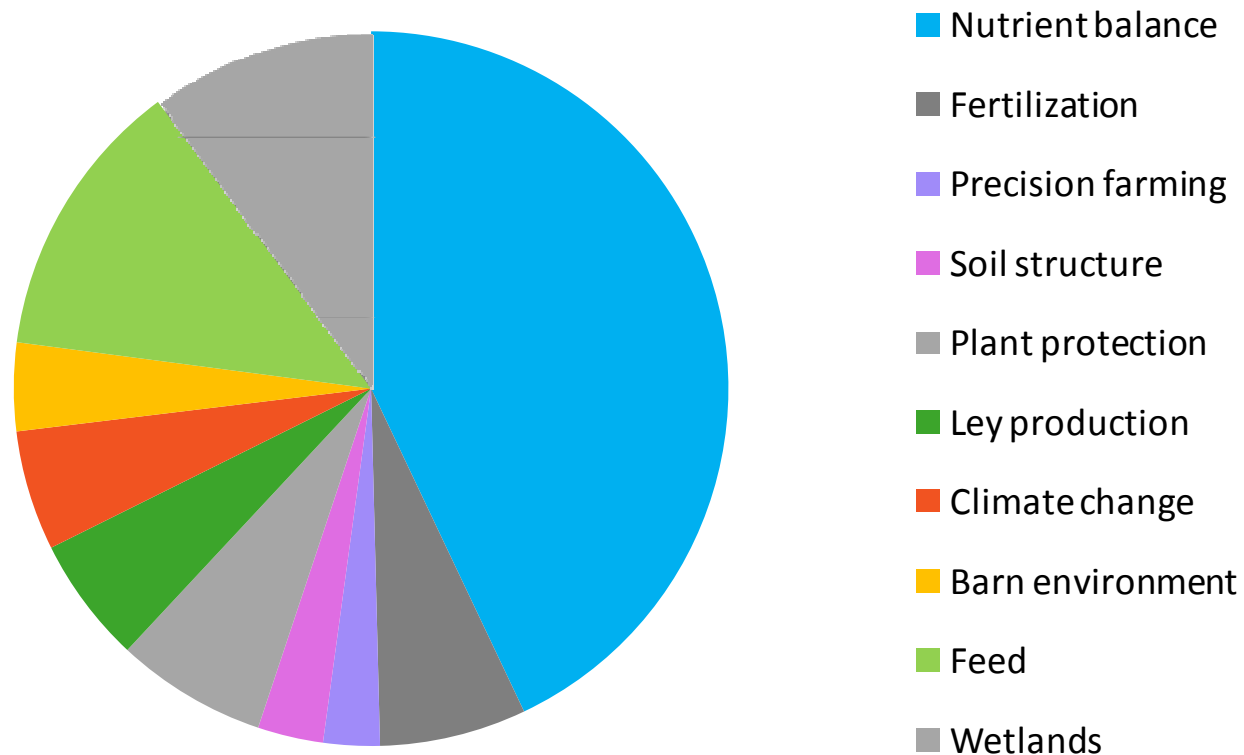


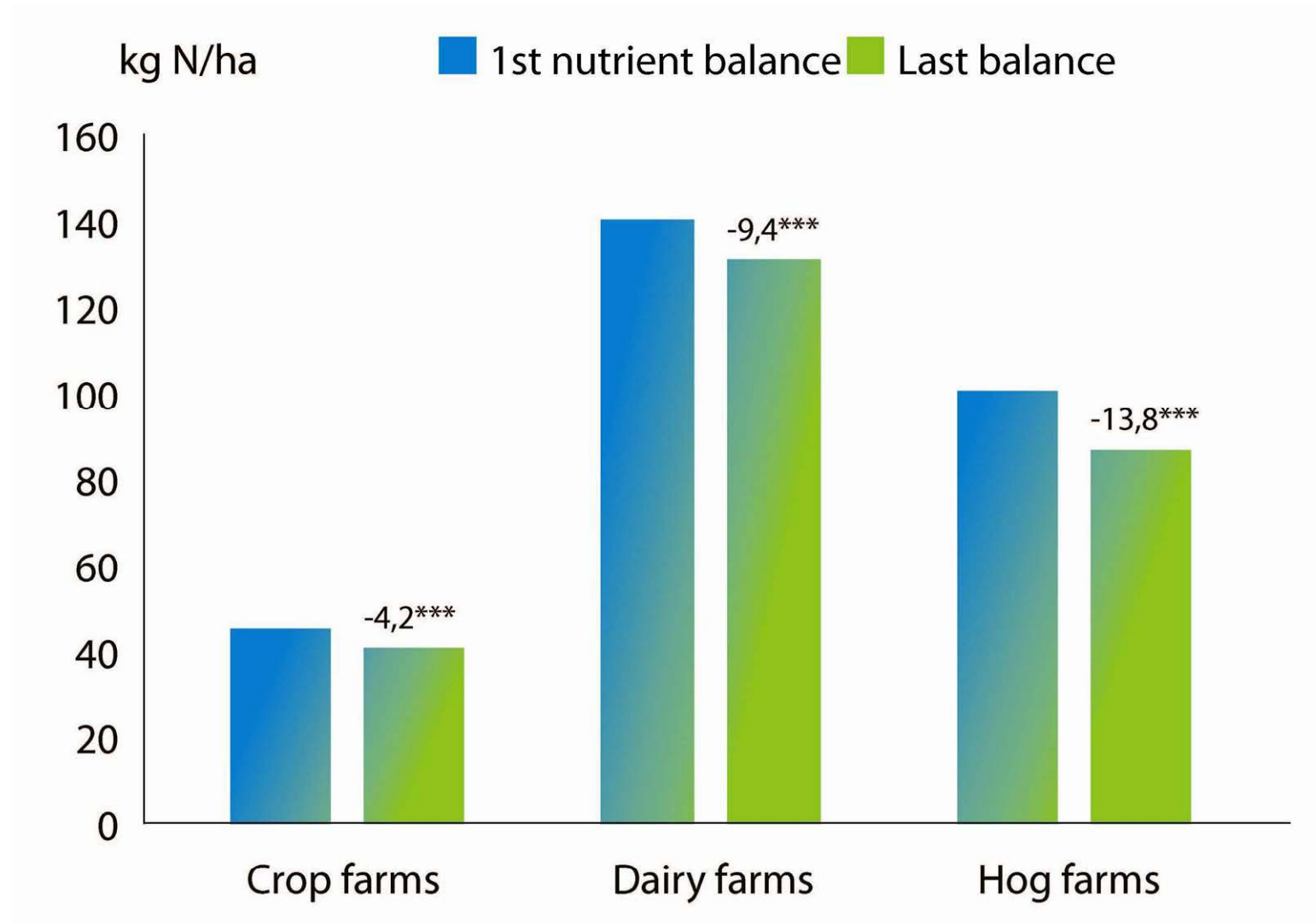


Want to learn more about Greppa Näringen?
Visit our website www.greppa.nu



Topics during farm visits 2011

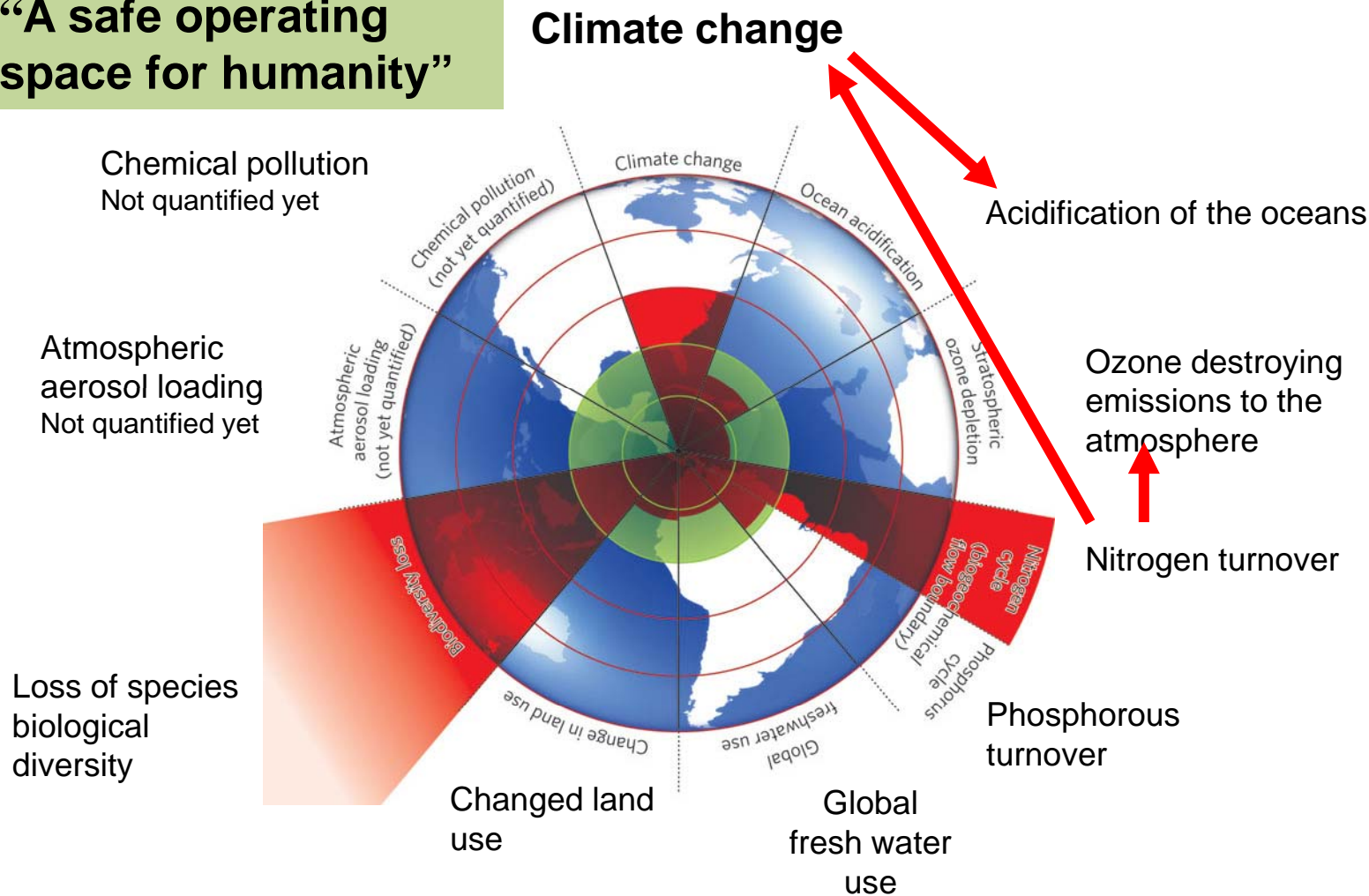




We exceed the planet's limits

“A safe operating space for humanity”

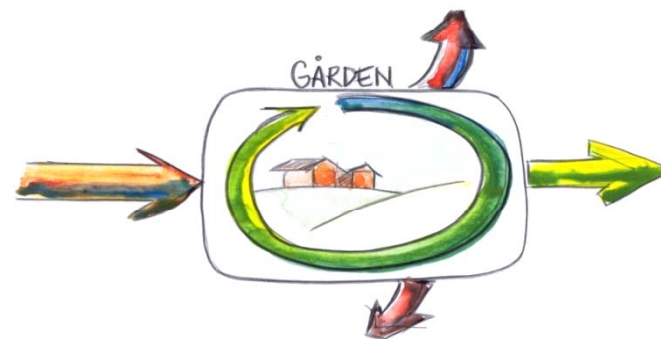
From pre-industrial time to now



Goals for Climate Check

Show Potential of Farm

- To reduce emissions of greenhouse gases
- To implement short and long term climate measures
- To contribute for other parts of society, nationally and globally to reduce their climate impact



See the big picture!!
Increase the strategic thinking

Farm Visits 2-3 h, follow-up calls from 0.5 to 1 h

- Introduction to climate - greenhouse gas emissions, agriculture's role,
- General assessment of the farm's greenhouse gas emissions,
- Discussion of:
 - big and small in terms of emissions on the farm
 - possible climate measures and key action areas in the farm
 - briefly about the farm's conditions for production and marketing of bioenergy
 - what areas and activities that require more counseling
- 🌀 Need for further climate-related advice in & outside of Greppa
- 🌀 If necessary, revision of advice plan from a climate perspective