# Élevage et environnement

Systèmes d'information et approches pour l'évaluation de la performance environnementale des filières d'élevage au niveau mondial

Montpellier, 13 Juillet, 2011

# Plan

- La problématique
- Évaluation basés sur des entités géographiques
- Évaluation basée sur l'analyses en cycle de vie
- Partnenariat pour le référencement et le suivi de la performance environnementale des filières d'élevage.

# Key premises

- Livestock sector growth will continue
- Livestock's impact on the environment is substantial (land, water, nutrients, climate, biodiversity)
- Productivity and environmental performance vary hugely
- Closing the performance gap can yield substantial benefits regarding resource use efficiency
- Large improvements won't happen by themselves

# Évaluation basés sur des entités géographiques

# Global/regional Information systems with spatial or system resolution (i)

- OECD agri-environmental indicators
  - *Environmental Performance of Agriculture in OECD countries since 1990* (2008)
- EUROSTAT
- FAOSTAT, FRA

- Joint preparation of the 2nd edition
  - Joint OECD/Eurostat Working Group on Environment Information and Outlooks

I. Soil
II. Water
III. Air and Climate Change
IV. Biodiversity
V. Agricultural Inputs

# Future developments - Greenhouse Gases

- Methane (CH4)
  - National total CH4
    - Agricultural total CH4
      - CH4 emissions from **agriculture soil**
      - CH4 emissions from **grassland**
      - CH4 emissions from **rice** cultivation
      - CH4 emissions from field burning of agricultural residues
      - CH4 emissions from **livestock enteric fermentation**
      - CH4 emissions from **livestock waste**

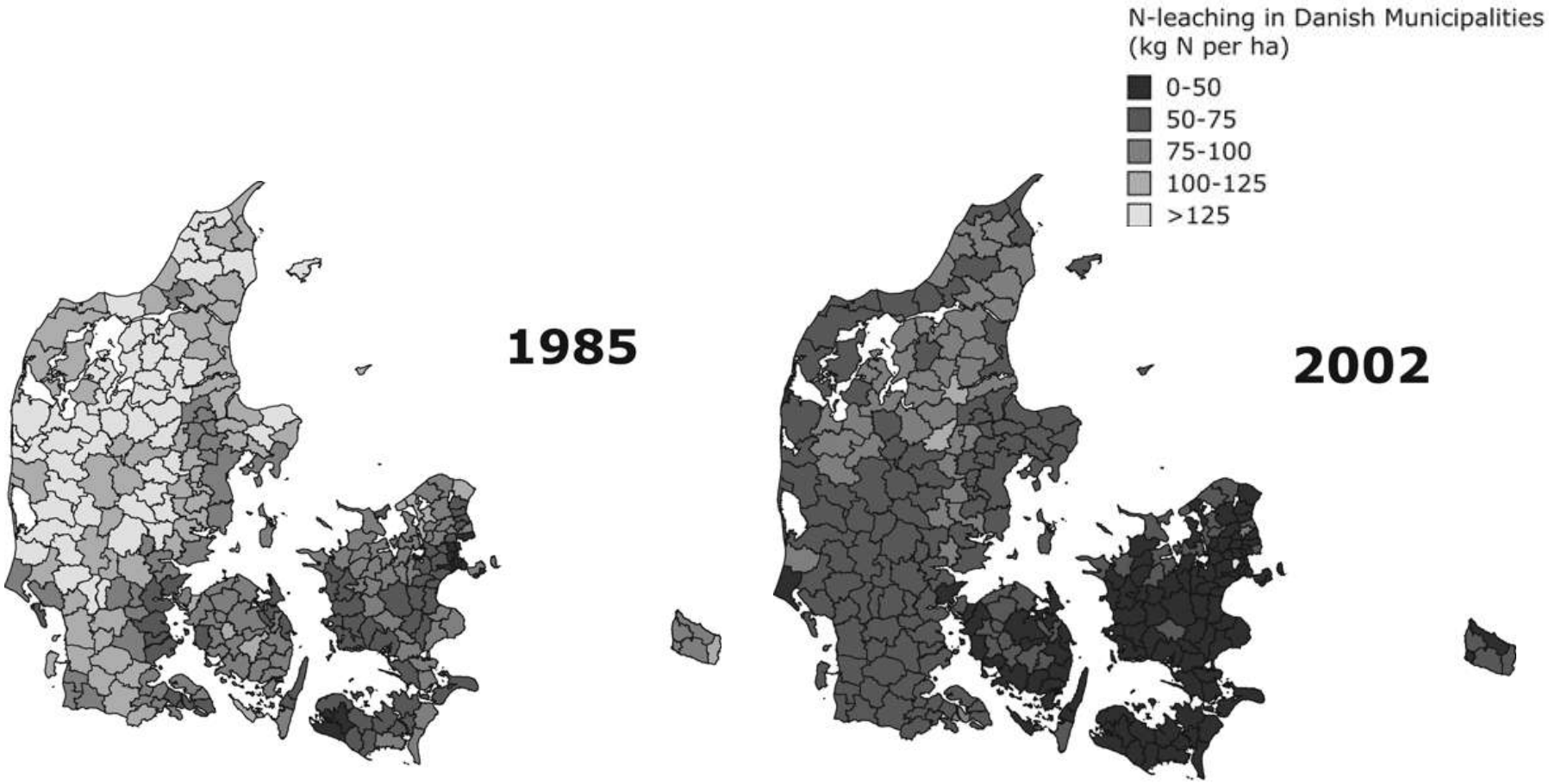
# Future developments - Nutrients

- Nitrogen content of crops and livestock
  - Nitrogen content of inorganic and **organic fertiliser** products
  - Nitrogen content of **livestock manure production**
  - Nitrogen content of livestock manure: **withdrawals, changes in stocks and imports**
  - Nitrogen uptake by crops and forage
  - Nitrogen content of seeds and planting materials
  - Nitrogen input from biological nitrogen fixation
  - Nitrogen atmospheric deposition on agricultural land

# Global/regional Information systems with spatial or system resolution (i)

- Country reports to UNFCCC
- Increasing availability of GIS data

# N-leaching in Danish municipalities



# Information integrated on regional / system level

- Aggregated view on a geographical unit / production system
- Based on national reports: accepted and updated
- Macro-level guidance
- Not very suitable to inform action among industry / consumer

# Évaluation basés sur des analyseS en cycle de vie

# An overview of livestock food chains (LFC)

Feed

Animal production

Transport and processing

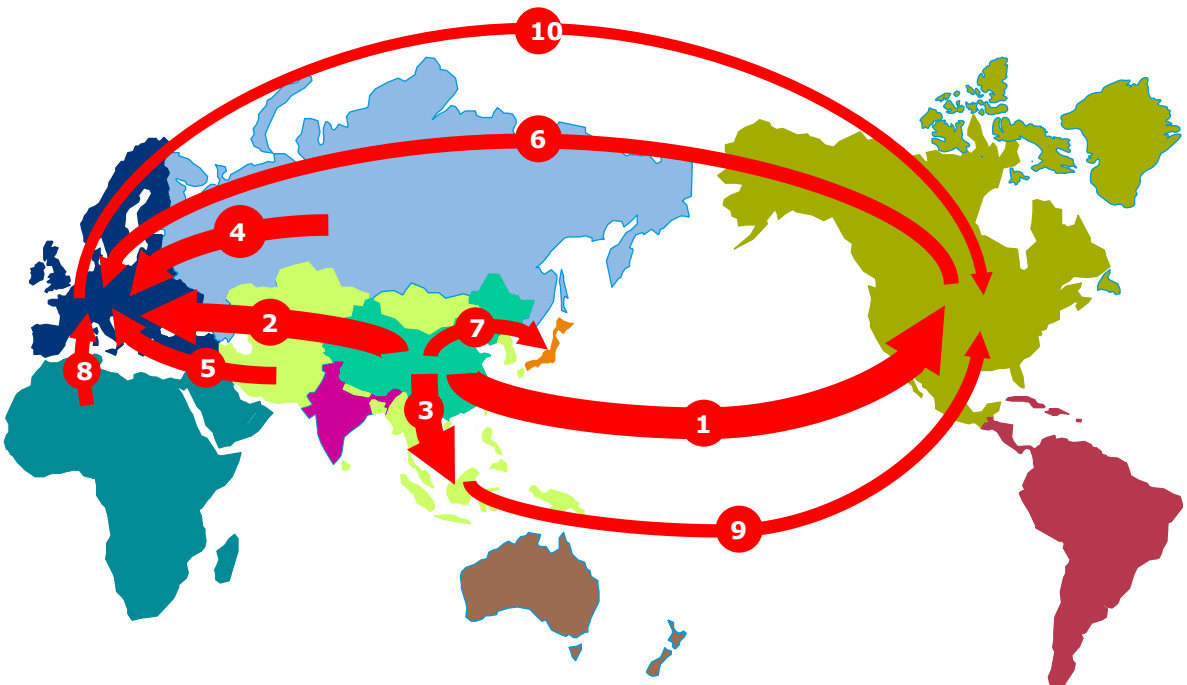
Consumer

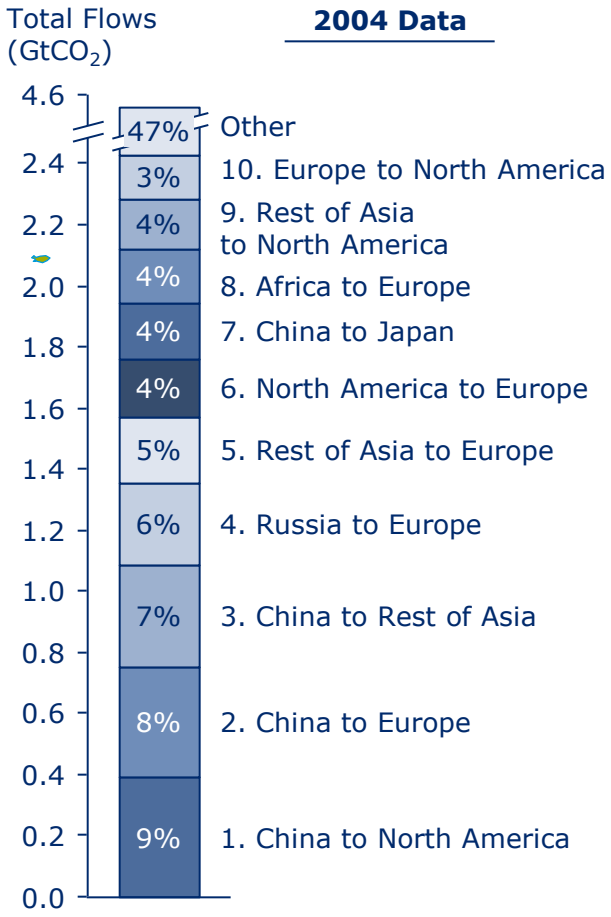
Retail

# Top 10 regional flows of $CO_2$ embedded in goods and commodities

CARBON TRUST

**2004 Data**



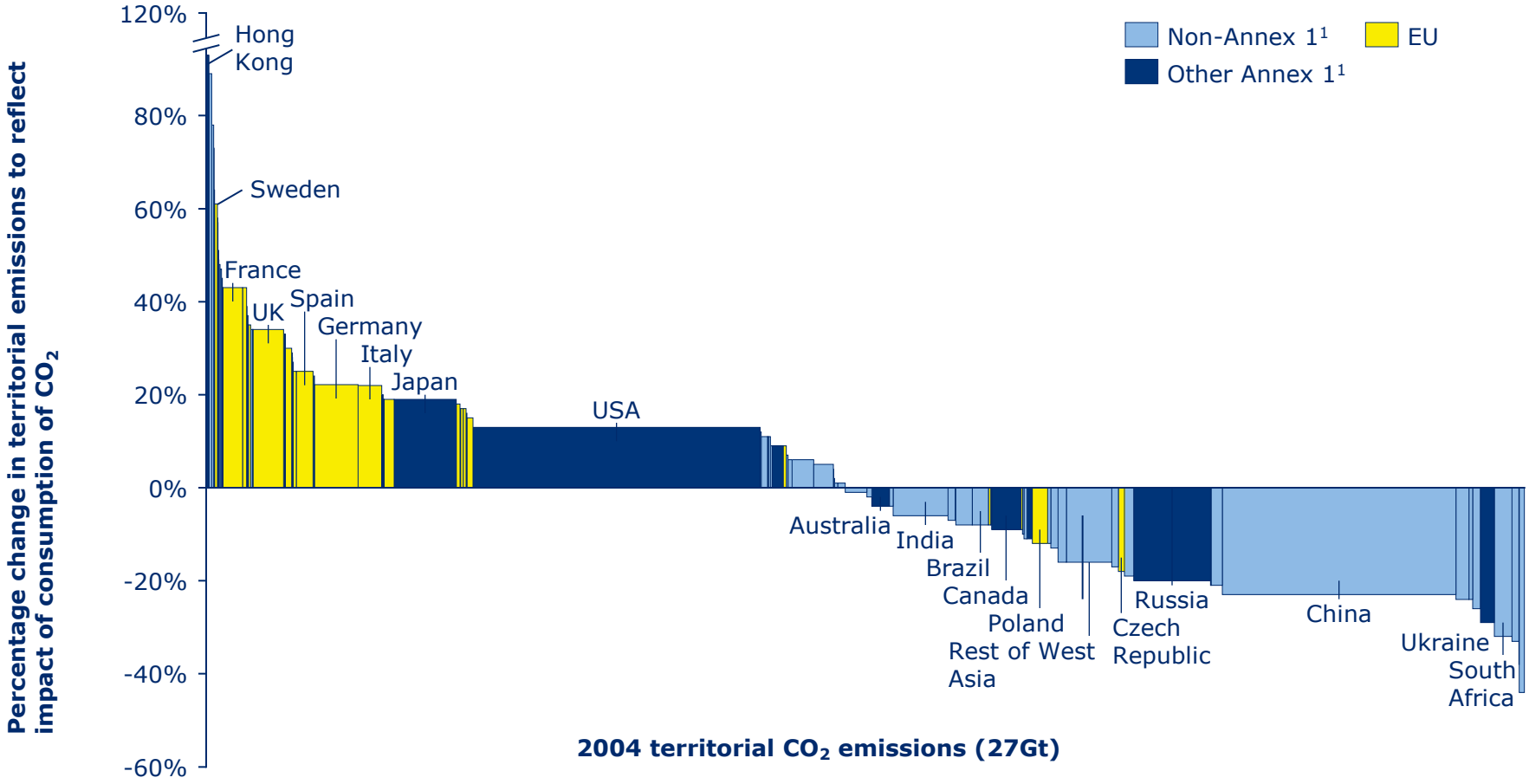




Note: Rest of Asia excludes China, Japan and India
Data includes flow of Scope 1-3 (direct, indirect and upstream) emissions arising in region of export that are embodied in trade flows to the region of import
Source: Carbon Trust Analysis; CICERO / SEI / CMU GTAP7 EEBT Model

# A consumption perspective alters the distribution of emissions between countries

CARBON TRUST

2004 Data



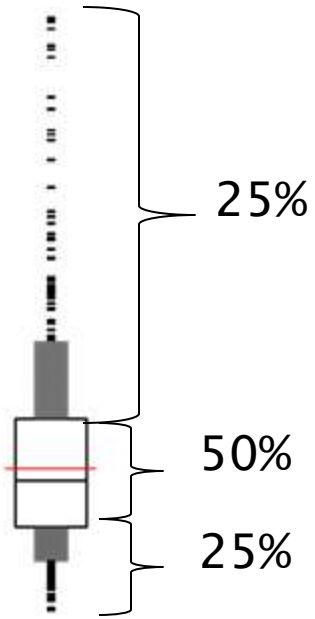

1. Annex 1 to UNFCCC

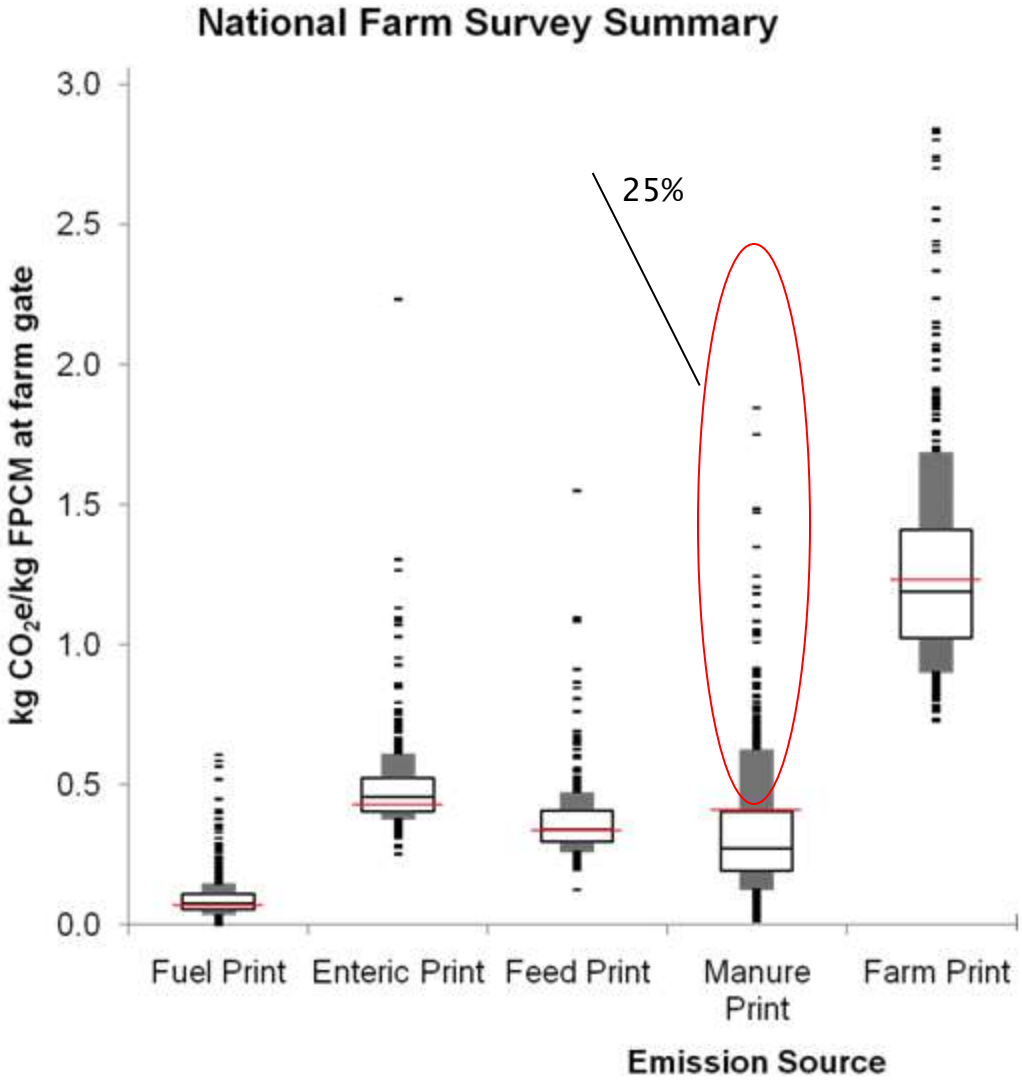
Note 1: Includes $CO_2$ emissions from production, process, transport and household sources only (27Gt in 2004); excludes non-CO2 emissions, and emissions due to land-use-change

Note 2: Based on an MRIO (multi region input/output) model allocating emissions to regions of consumption

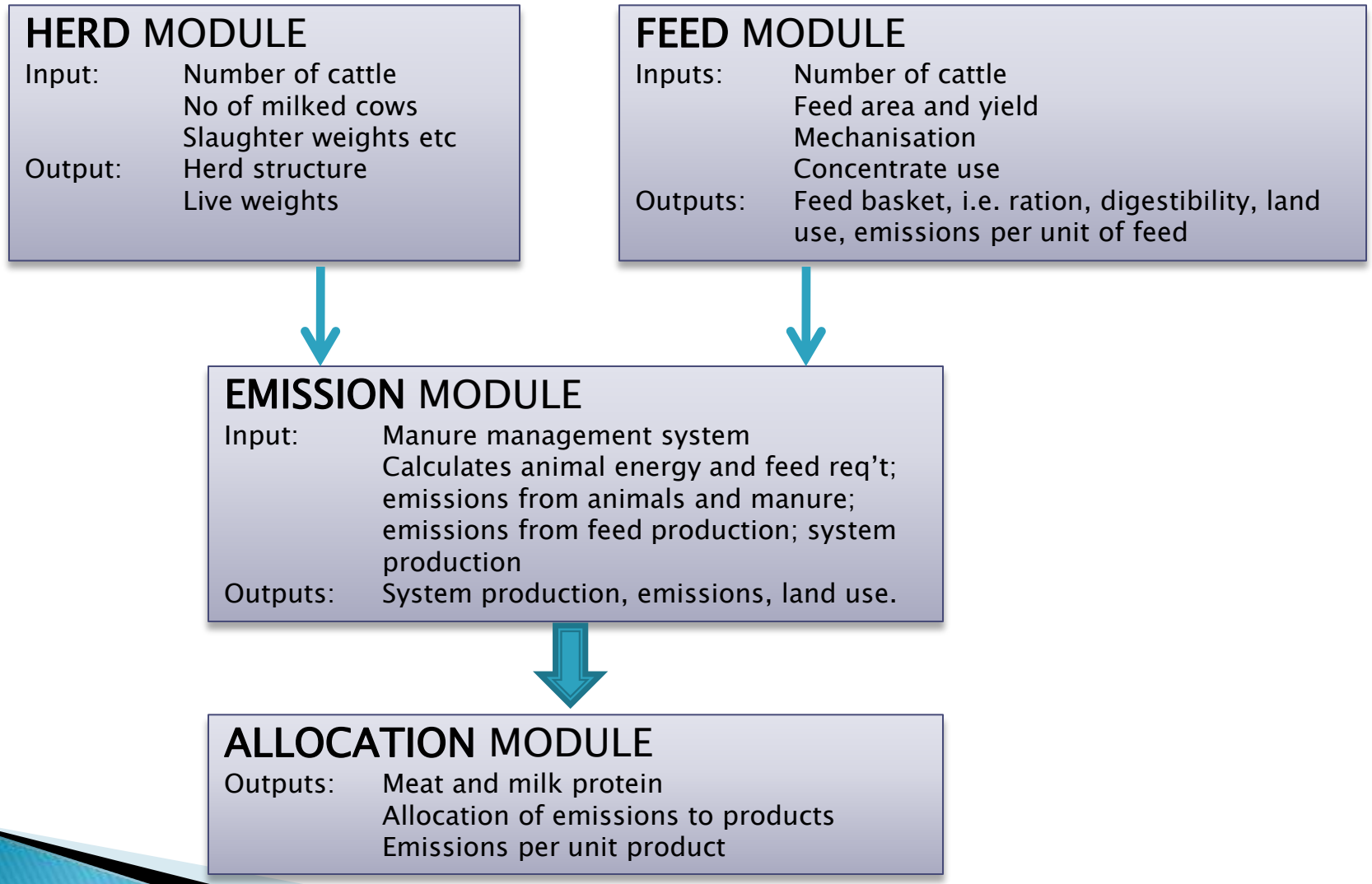
Source: Carbon Trust Analysis; CICERO / SEI / CMU GTAP7 MRIO Model (2004)

# Variability means opportunities



# The FAO LCA data flow



# Information systems based on life cycle analysis

- Supports the identification of most effective points of interventions
- Avoids pollution swapping along the chain
- Can be combined with other food chain analysis, e.g. stakeholder analysis, HCCP
- Limits of intensity metrics

# Partnership on benchmarking and monitoring the environmental performance of animal food chains

# Origins of the proposed partnership

- Move from the assessment of livestock and environment interactions to the direct support of action
- Demand expressed by Private Sector and Member Countries
- Aligned with FAO's Strategic Framework 2010-2019 and strategy on partnerships
- Assessment of environmental performance of livestock food chains needs to be inclusive

# A multitude of related initiatives

- Global Research Alliance
- Animal Change

- UNEP/SETAC International Life Cycle Initiative
- Agri-BALYSE
- Global Agenda of Action

- European Food Sustainable Consumption and Production Round Table
- Global Roundtable for Sustainable Beef
- SAI platform

- Common Carbon Footprint Approach for Dairy: The IDF guide to standard lifecycle assessment methodology for the dairy sector

- Standards, e.g. ISO, PAS2050, WRI
- …

- Involve companies, private sector organizations, Governments, civil society

# What is specific to the partnership we envisage?

- Focus on livestock food chains: sector specific guidance
- Environmental performance: benchmarking and monitoring change – continuous improvement
- Range of environmental criteria: GHG emissions, water, nutrient cycles, etc.
- Rely on a core analytical capacity and related databases
- Multi-stakeholder: private sector organizations, Governments, civil society

# Definition of success / end point

**Vision**: improved environmental performance of the livestock sector, while considering economic and social viability

**Objective**: The vision is supported through guidance on environmental performance assessment and its use.

**Outputs:**

- Improved **assessment** of the LS environmental performance :
  - supported or developed **tools and databases**
  - a **comprehensive set of environmental performance indicators** is defined
  - methods are informed by and fed into **existing standards**, and ISO in particular
- **capacity built** within the membership
- improved **communication**

**Implementation** through a partnership involving private sector representatives, civil society, FAO and FAO Member Countries

# Concluding remarks

- Information influences action
- Potential environmental gains are substantial
- Most impacts take place upstream but market signals and standards issued downstream
- LCA complementary to system analysis (forces to identify main outputs)
- Promising developments