

# Élevage et environnement

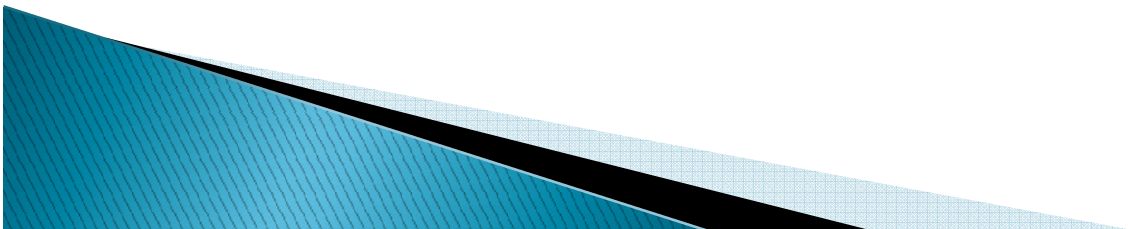
Systèmes d'information et approches pour  
l'évaluation de la performance environnementale des  
filieres d'élevage au niveau mondial

Montpellier, 13 Juillet, 2011



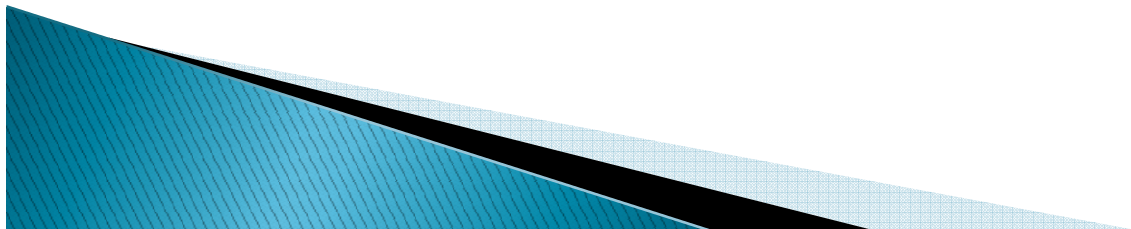
# Plan

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

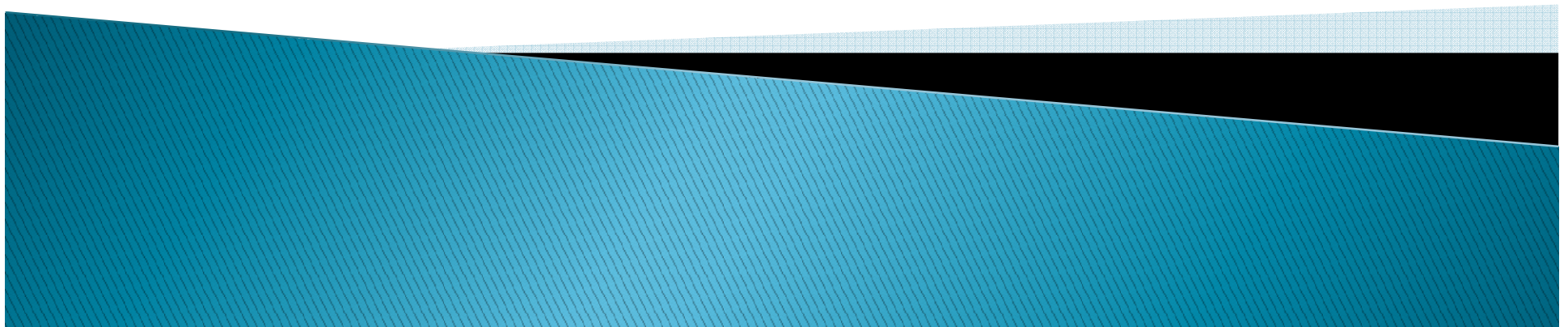


# Key premises

- ▶ 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

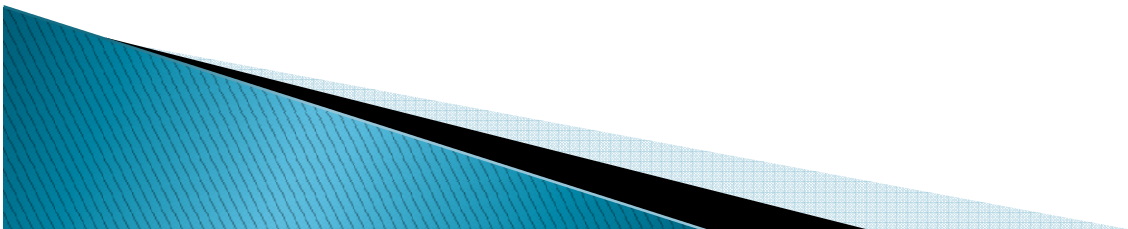


# Évaluation basés sur des entités géographiques



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

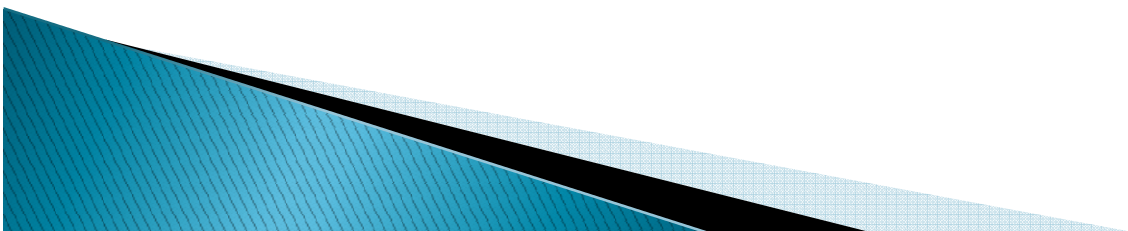
- ▶ OECD agri–environmental indicators
  - *Environmental Performance of Agriculture in OECD countries since 1990* (2008)
- ▶ EUROSTAT
- ▶ FAOSTAT, FRA
  
- ▶ Joint preparation of the 2nd edition
  - Joint OECD/Eurostat Working Group on Environment Information and Outlooks
    - I. Soil
    - II. Water
    - III. Air and Climate Change
    - IV. Biodiversity
    - V. Agricultural Inputs



# Future developments - Greenhouse Gases

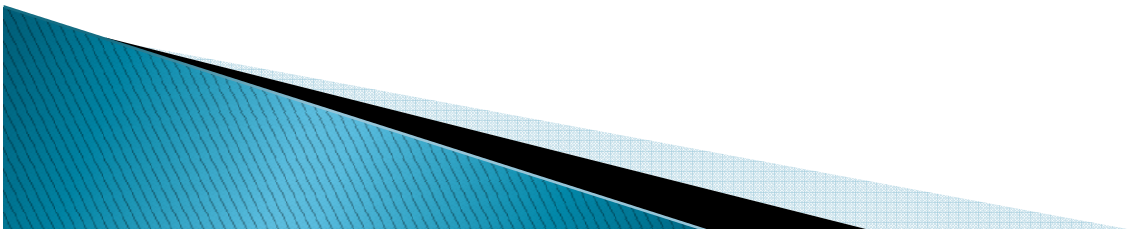
## ► Methane (CH<sub>4</sub>)

- National total CH<sub>4</sub>
  - Agricultural total CH<sub>4</sub>
    - CH<sub>4</sub> emissions from agriculture soil
    - CH<sub>4</sub> emissions from grassland
    - CH<sub>4</sub> emissions from rice cultivation
    - CH<sub>4</sub> emissions from field burning of agricultural residues
    - CH<sub>4</sub> emissions from livestock enteric fermentation
    - CH<sub>4</sub> emissions from livestock waste



# Future developments - Nutrients

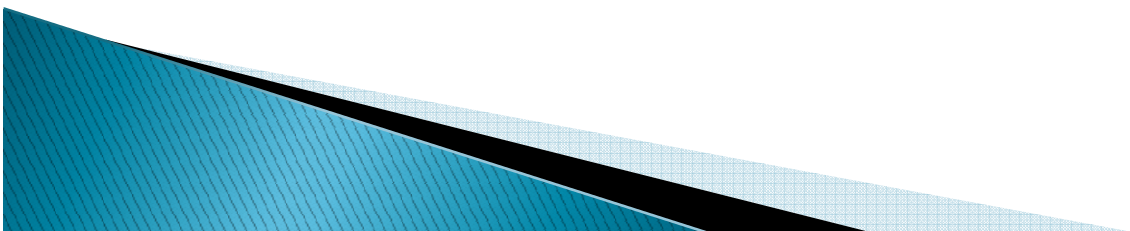
- ▶ Nitrogen content of crops and livestock
  - Nitrogen content of inorganic and organic fertiliser products
  - Nitrogen content of livestock manure production
  - Nitrogen content of livestock manure: withdrawals, changes in stocks and imports
  - Nitrogen uptake by crops and forage
  - Nitrogen content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





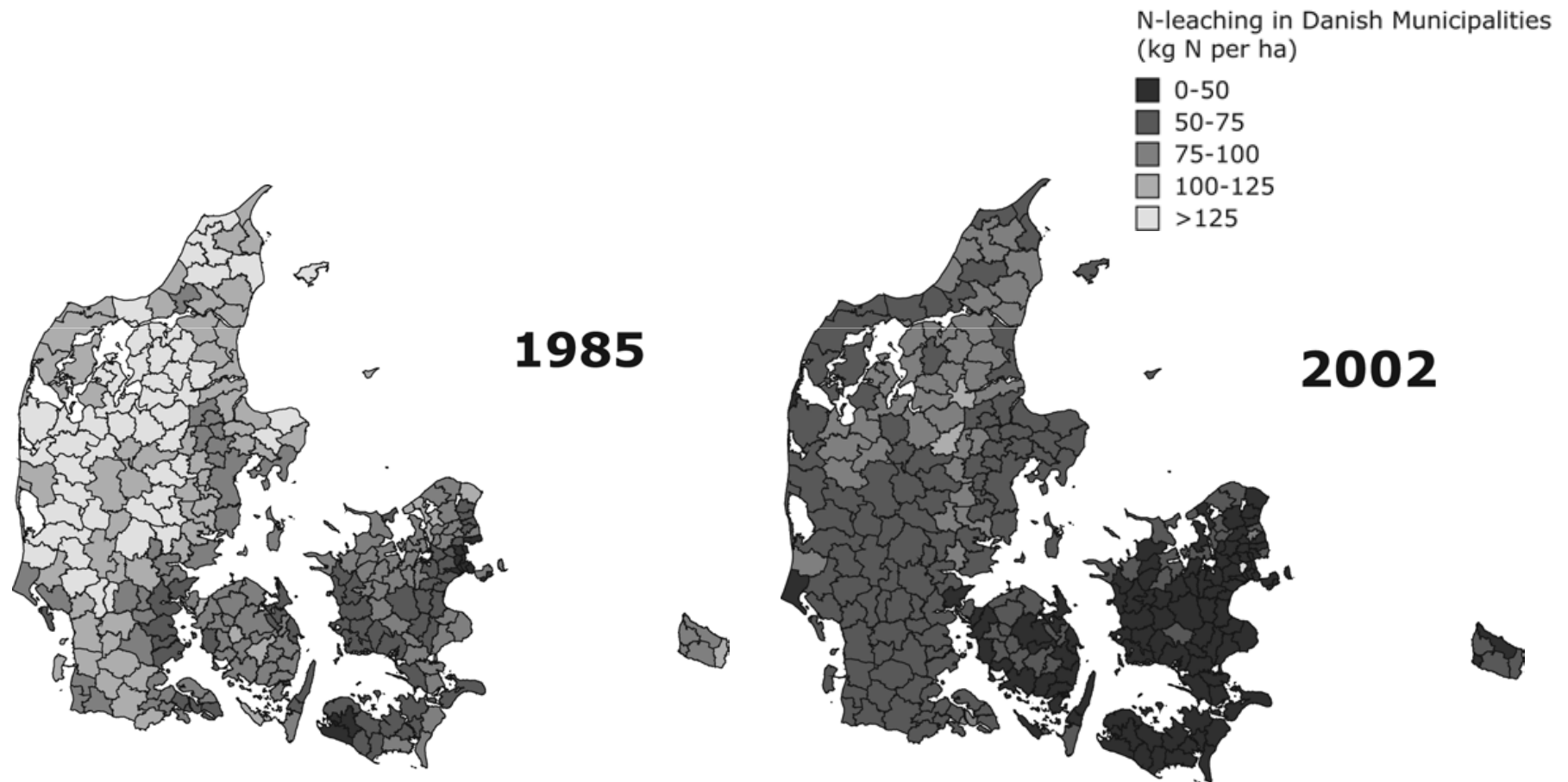
# Global/regional Information systems with spatial or system resolution (i)

- ▶ Country reports to UNFCCC
- ▶ Increasing availability of GIS data



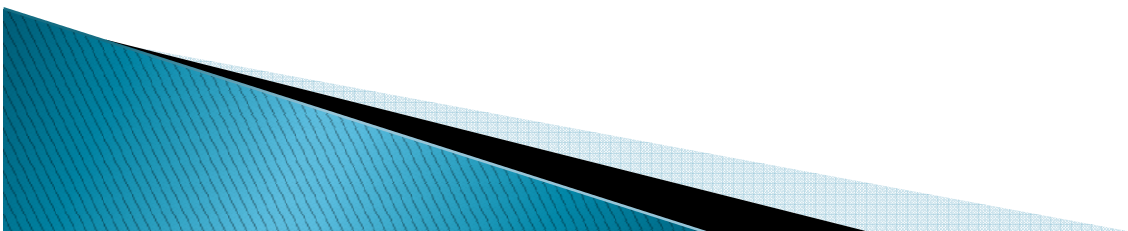


# N-leaching in Danish municipalities

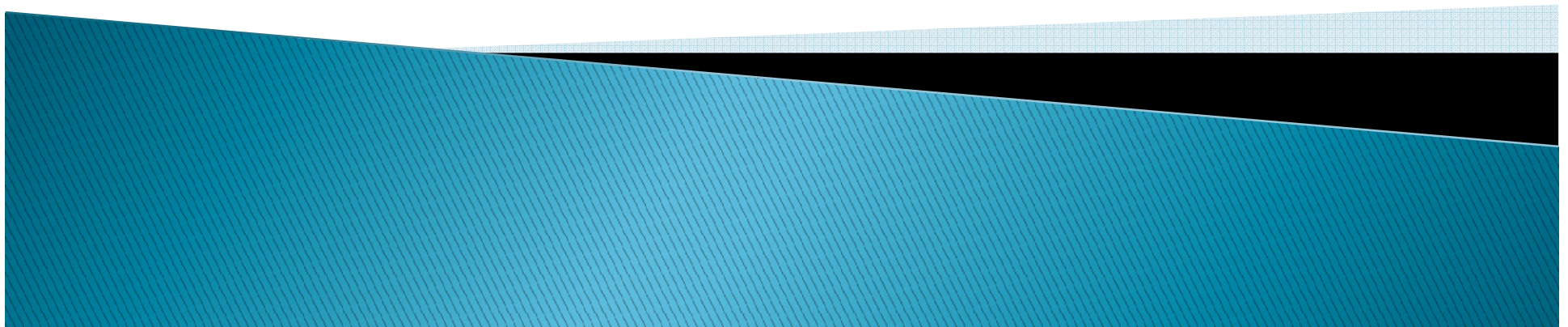


# Information integrated on regional / system level

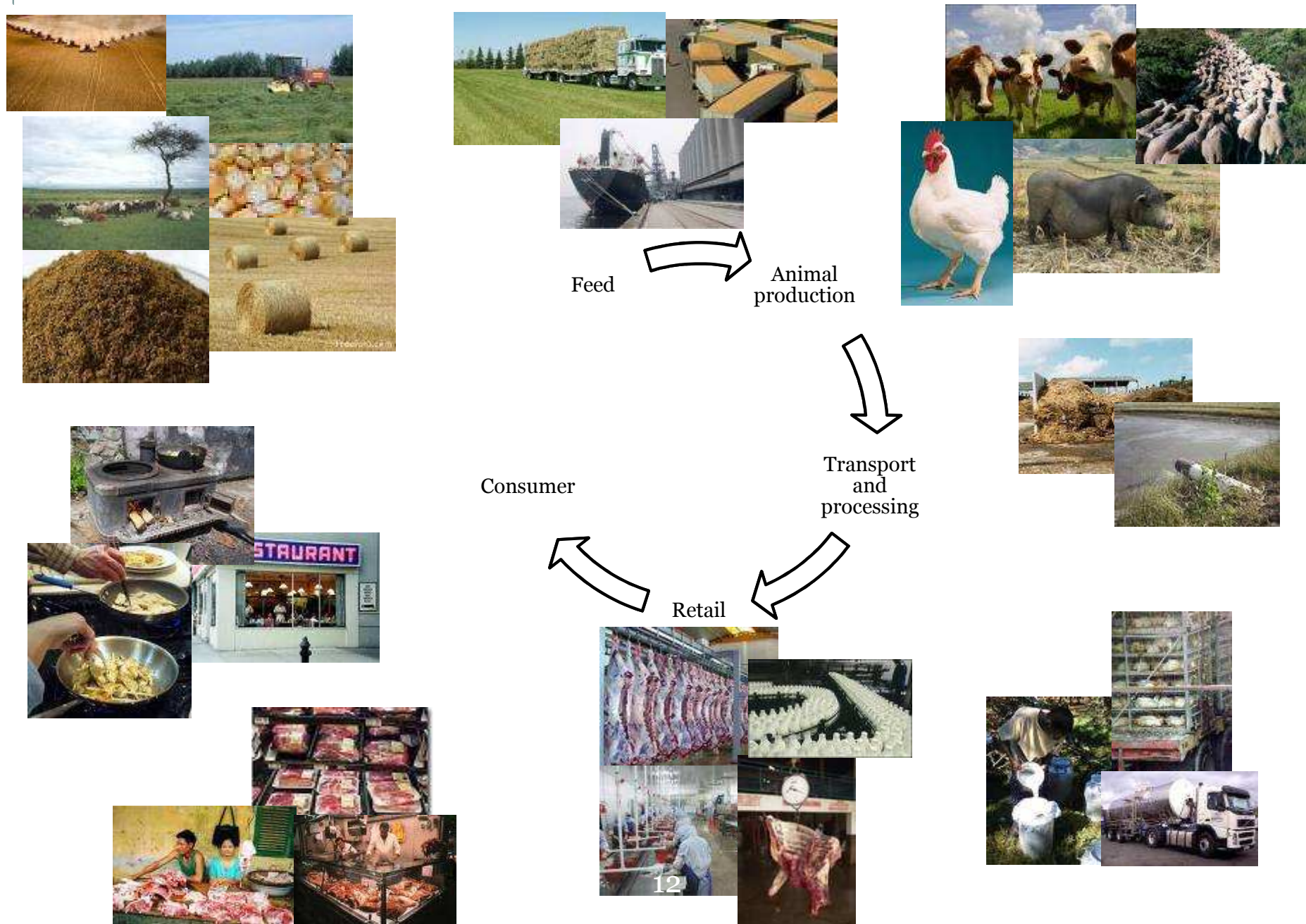
- ▶ Aggregated view on a geographical unit / production system
- ▶ Based on national reports: accepted and updated
- ▶ Macro-level guidance
- ▶ Not very suitable to inform action among industry / consumer



# Évaluation basés sur des analyseS en cycle de vie



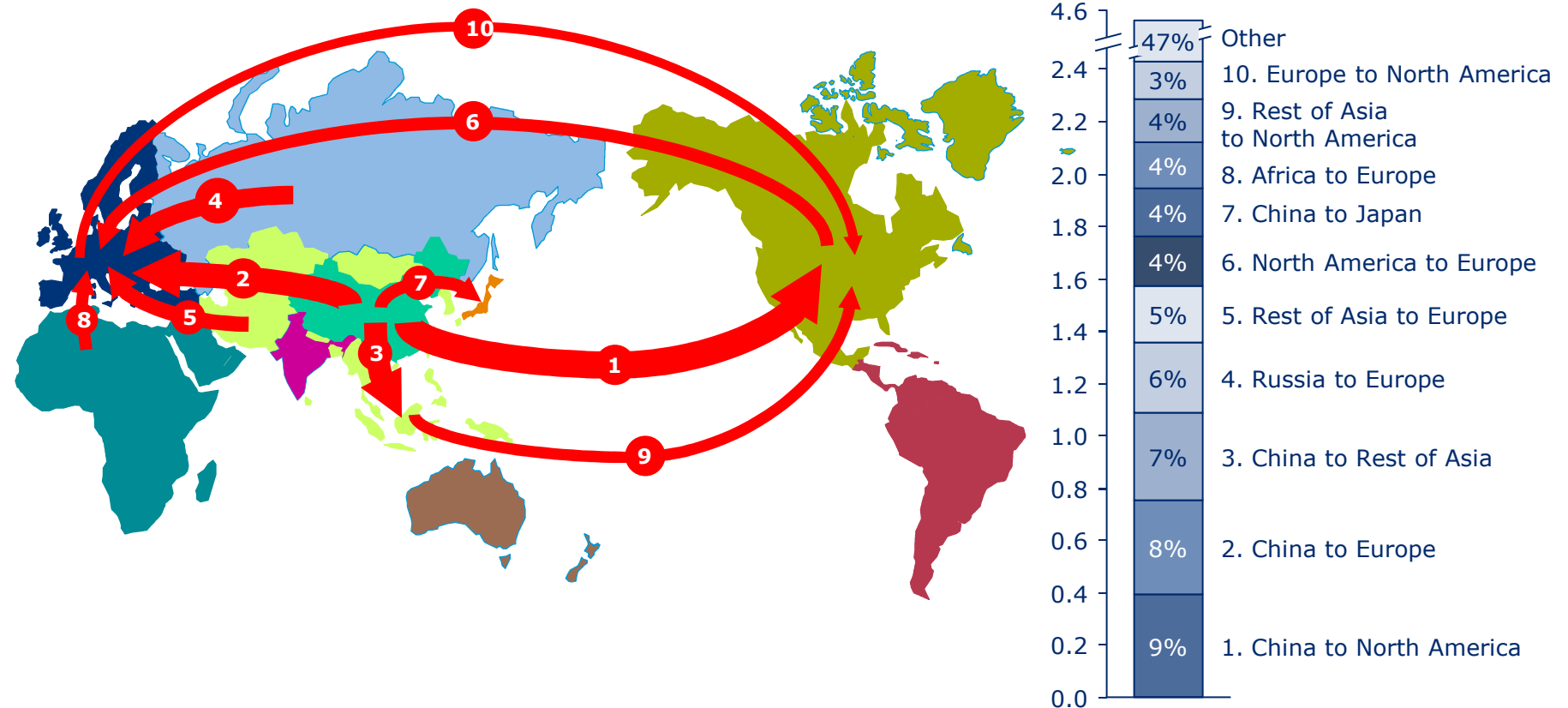
# An overview of livestock food chains (LFC)



# Top 10 regional flows of CO<sub>2</sub> embedded in goods and commodities



**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

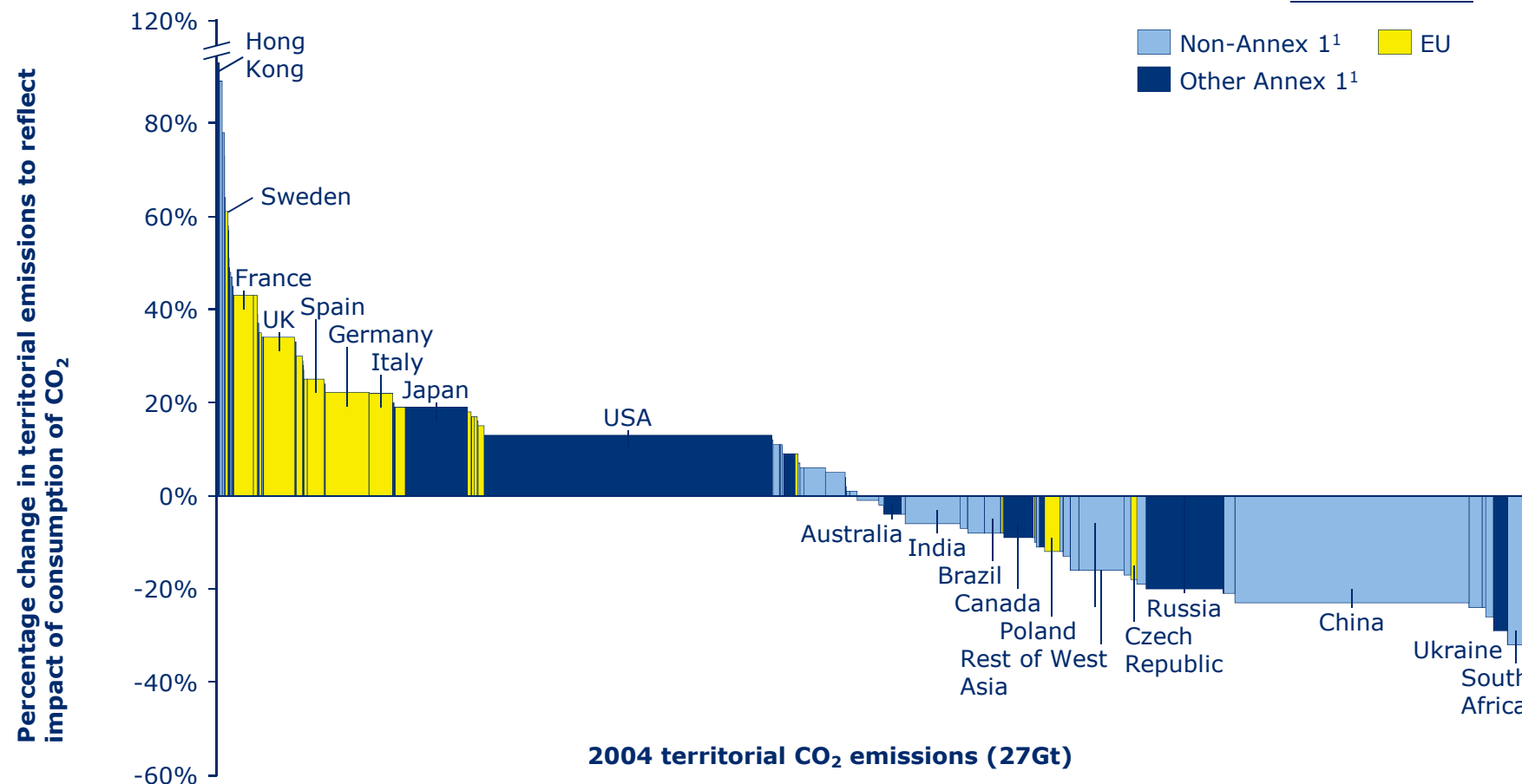
Source: Carbon Trust Analysis; CICERO / SEI / CMU GTAP7 EEBT Model



# A consumption perspective alters the distribution of emissions between countries



2004 Data



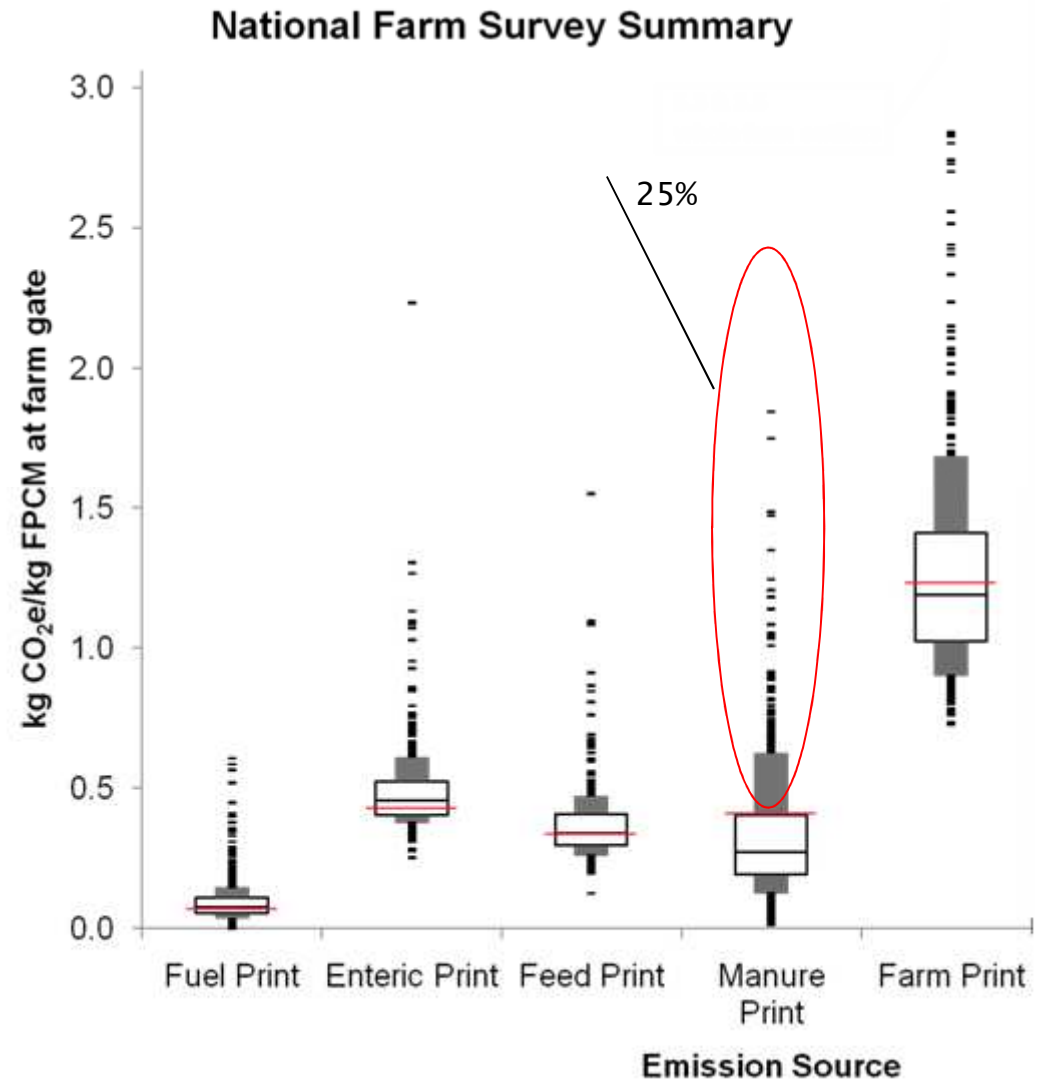
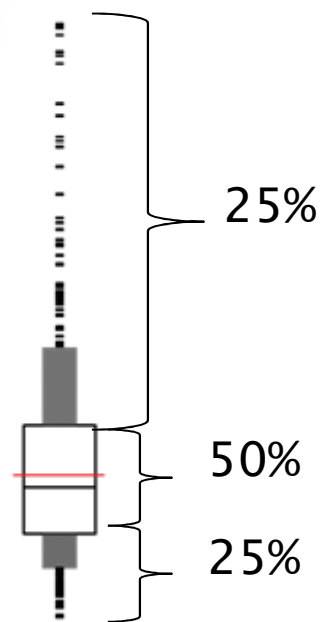
1. Annex 1 to UNFCCC

Note 1: Includes CO<sub>2</sub> emissions from production, process, transport and household sources only (27Gt in 2004); excludes non-CO<sub>2</sub> 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

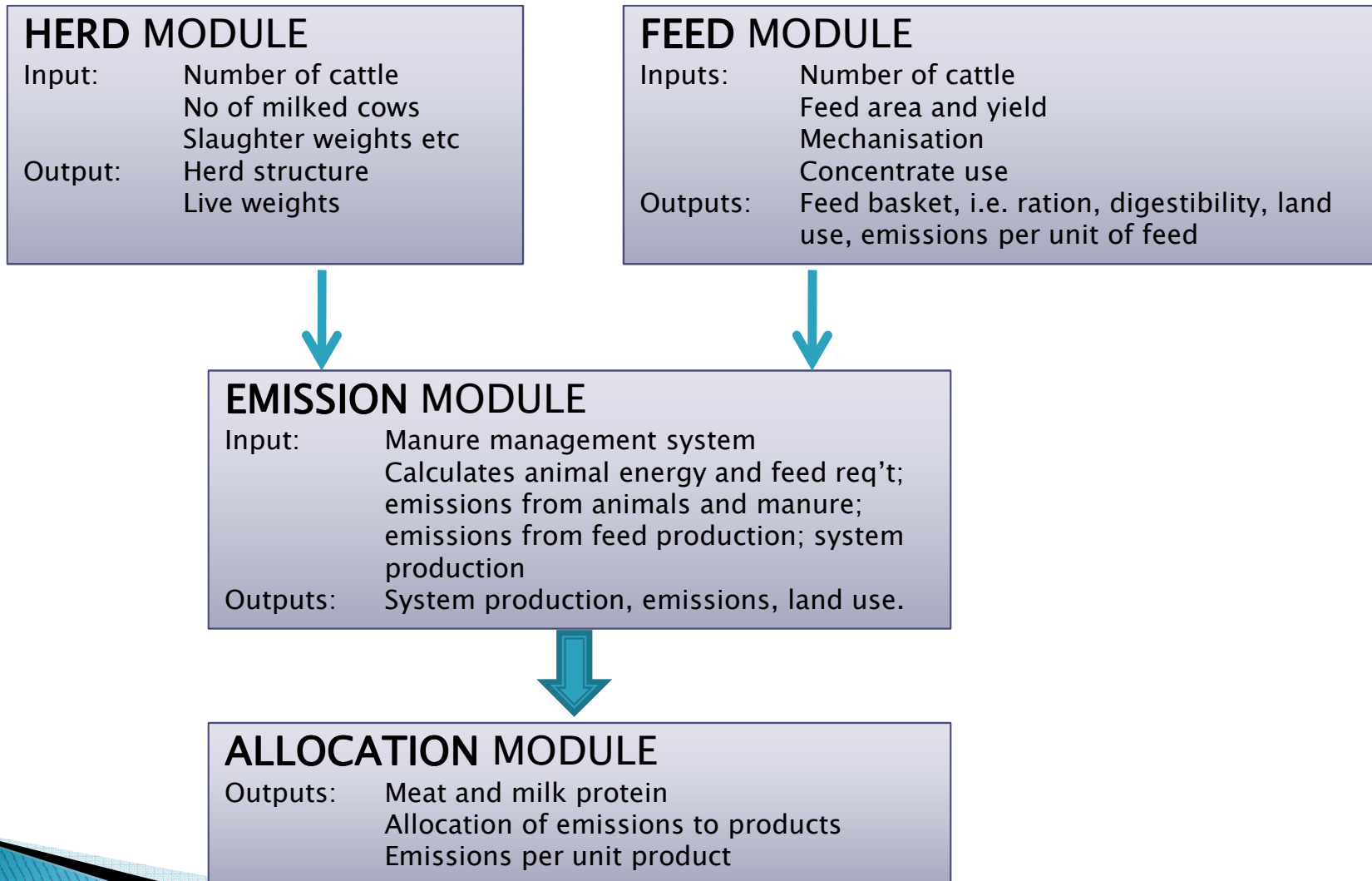
Source: Carbon Trust Analysis; CICERO / SEI / CMU GTAP7 MRIO Model (2004)

# Variability means opportunities



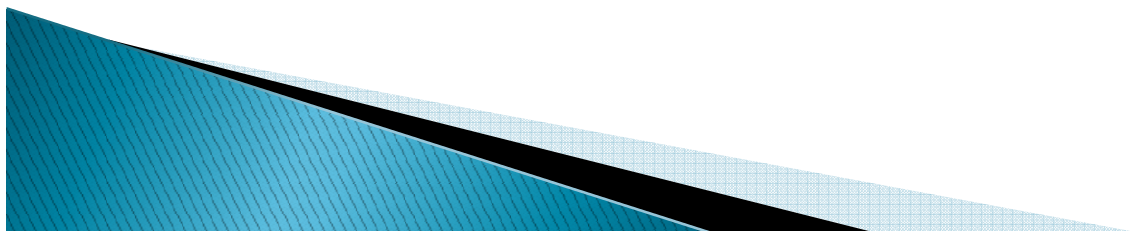


# The FAO LCA data flow

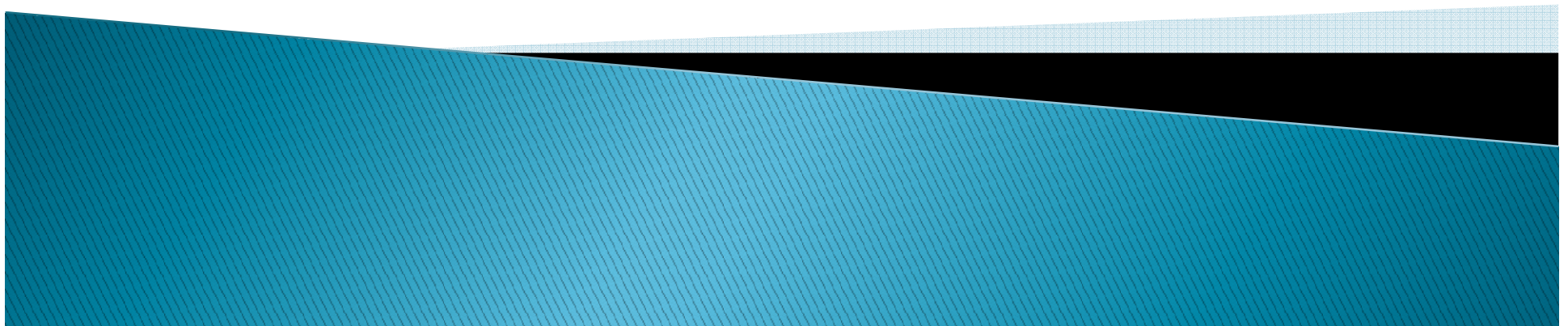


# Information systems based on life cycle analysis

- ▶ 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

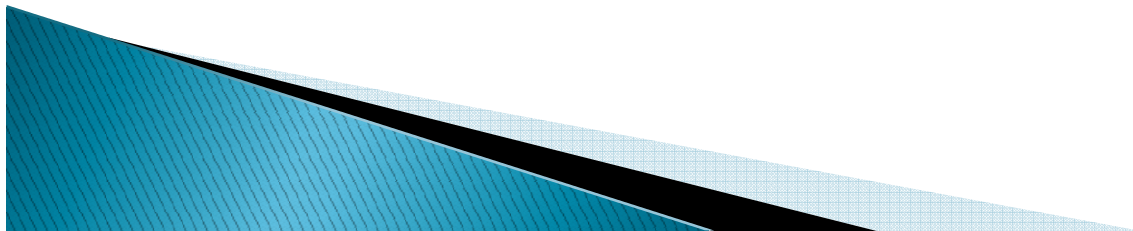


# Partnership on benchmarking and monitoring the environmental performance of animal food chains



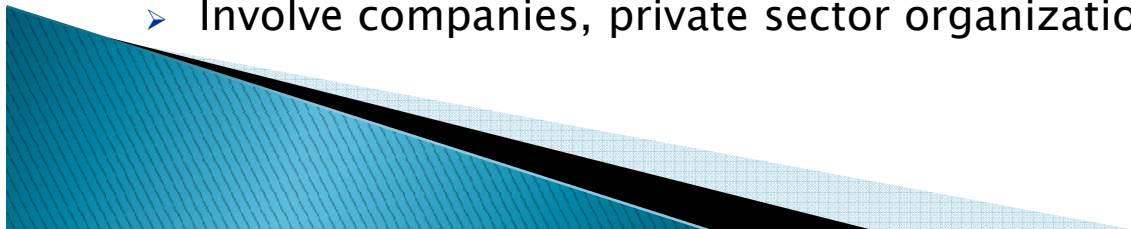
## Origins of the proposed partnership

- ▶ 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



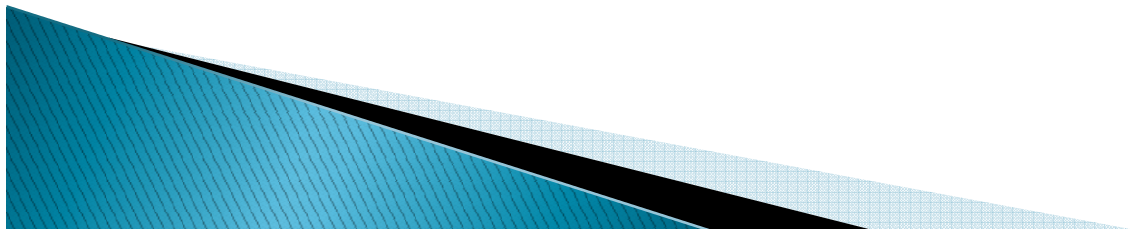
# A multitude of related initiatives

- ▶ 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

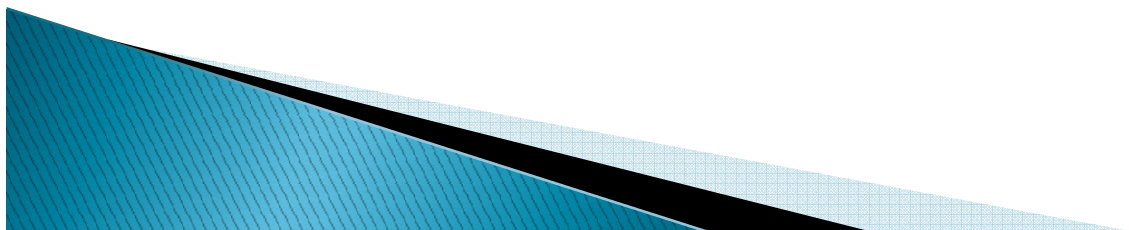
**Vision:** improved environmental performance of the livestock sector, while considering economic and social viability

**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

