



# The Sustainable Livestock Agenda

A Global Agenda in Support of  
Sustainable Livestock Sector  
Development

<http://www.livestockdialogue.org/>

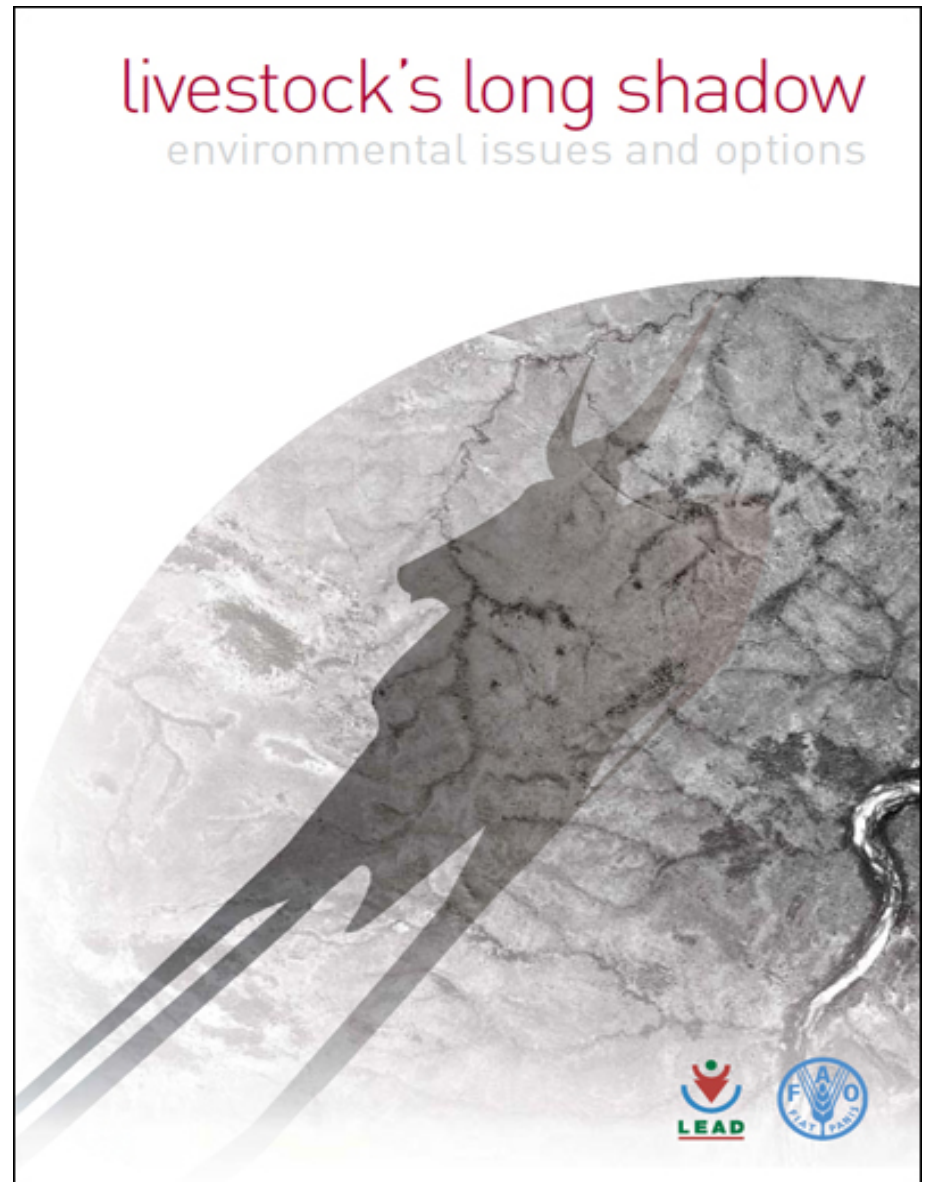
# The sustainable livestock agenda: what's new?

- The thematic focus  
*On improving natural resource use efficiency*
- The action-orientation  
*Targeting change of practice*
- The multi-stakeholder engagement  
*Harnessing synergies*

A look back

# Two major reactions:

- Questions
- Communication break-down



# FAO's response to LLS

- More analysis
  - LCA assessments
  - Economic modeling
  - Technology and Policy Assessments
- Consultations with multiple stakeholders
  - Governments and intergovernmental institutions
  - Private sector
  - Civil Society
  - Research and academia

# Why livestock?

## Specific resource use issues

- Production of animal protein is typically less efficient than that of plant protein
- Remoteness - areas often out of reach (neglect, expansion into forests, overgrazing)
- Intensive systems are often detached from land base - nutrient depletion and overloads

# Why livestock?

## Livestock demand and resource constraints

Global demand to grow by  
70 to 80 % by 2050

- Stagnant in rich countries
- Still strong in emerging countries
- Rapidly growing anywhere else

Growing scarcities and risks

- Growing scarcities - oil, land, water, energy, phosphorus
- Environmental degradation and pollution
- Climate change

# Point of Departure

- The livestock sector is resource-hungry
- The sector has specific resource issues
  - Low NRU efficiency
  - geographic dispersion (extensive systems)
  - geographic clustering (intensive systems)
- Demand will continue to grow and needs to be accommodated within finite resources
- Potential for social, health and economic gains needs to be seized
- The need for connecting actors and for joint action

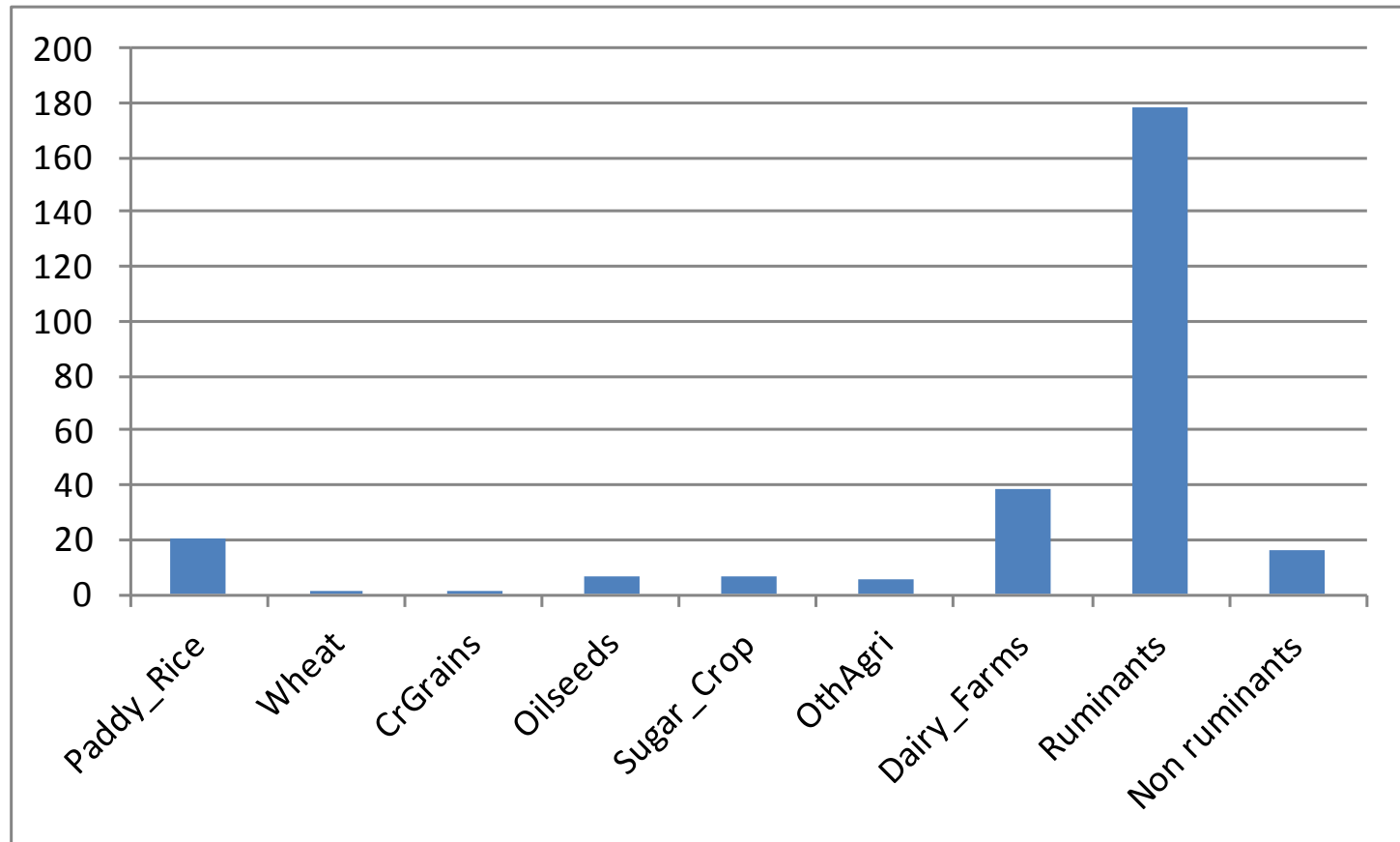
# Direction of Change

Improving the efficiency of natural resource use

Three focus areas:

1. Closing the efficiency gap: catching up in technology adoption
2. Restore value to grasslands: supporting soil carbon, ecosystem health and productivity restoration with climate finance
3. Zero discharge: towards full recovery of nutrient and energy from animal manure

# Global non-CO<sub>2</sub> emission intensities by commodity (tCO<sub>2</sub>eq/t protein)

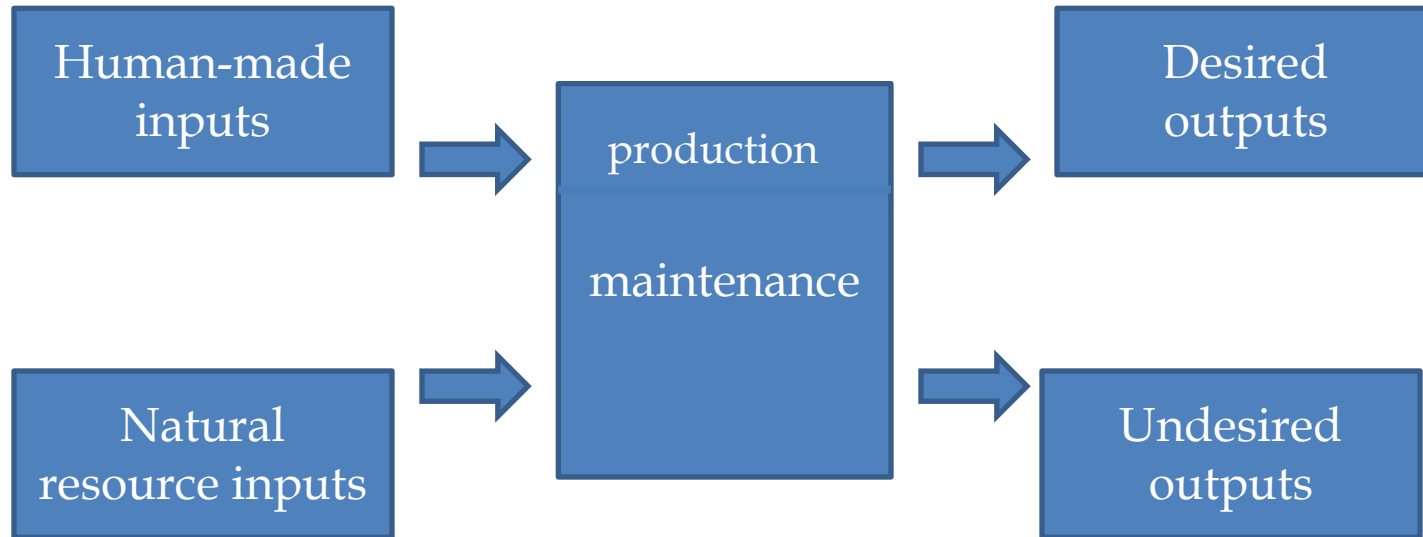


# About efficiency

Labor, capital,  
technology

livestock

Food, manure, services



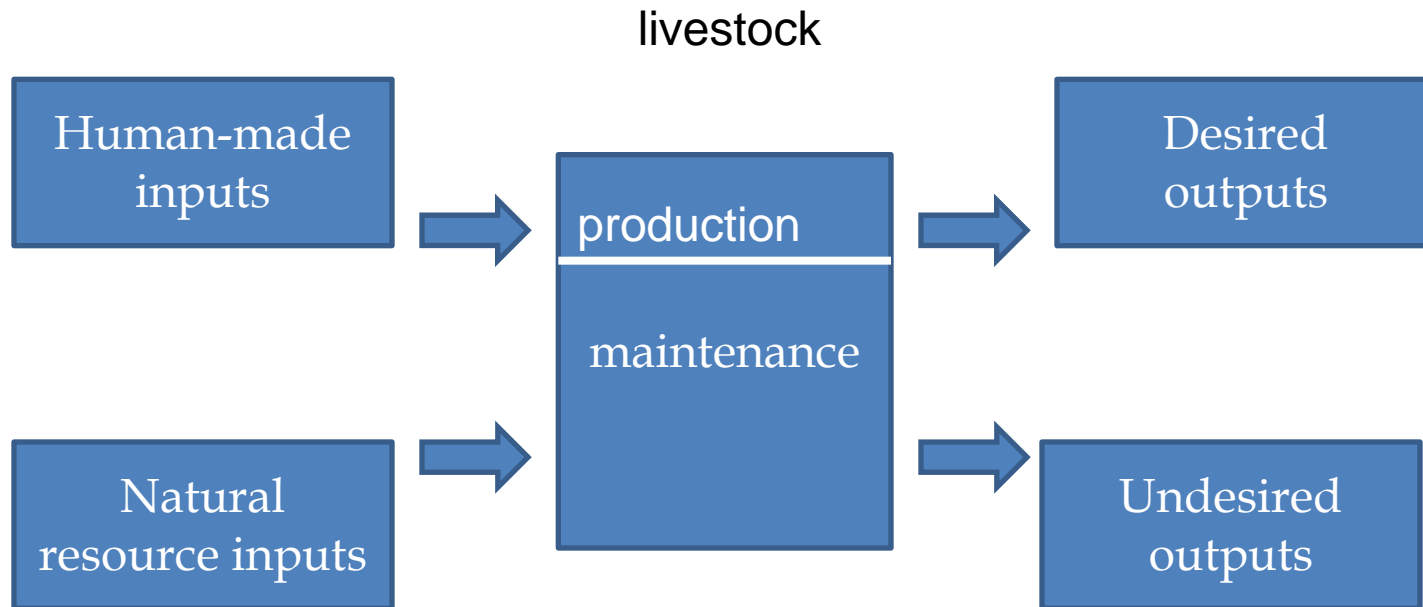
Land, water, energy, nutrients

Often underpriced

Gas, waste

Underpriced, un-priced

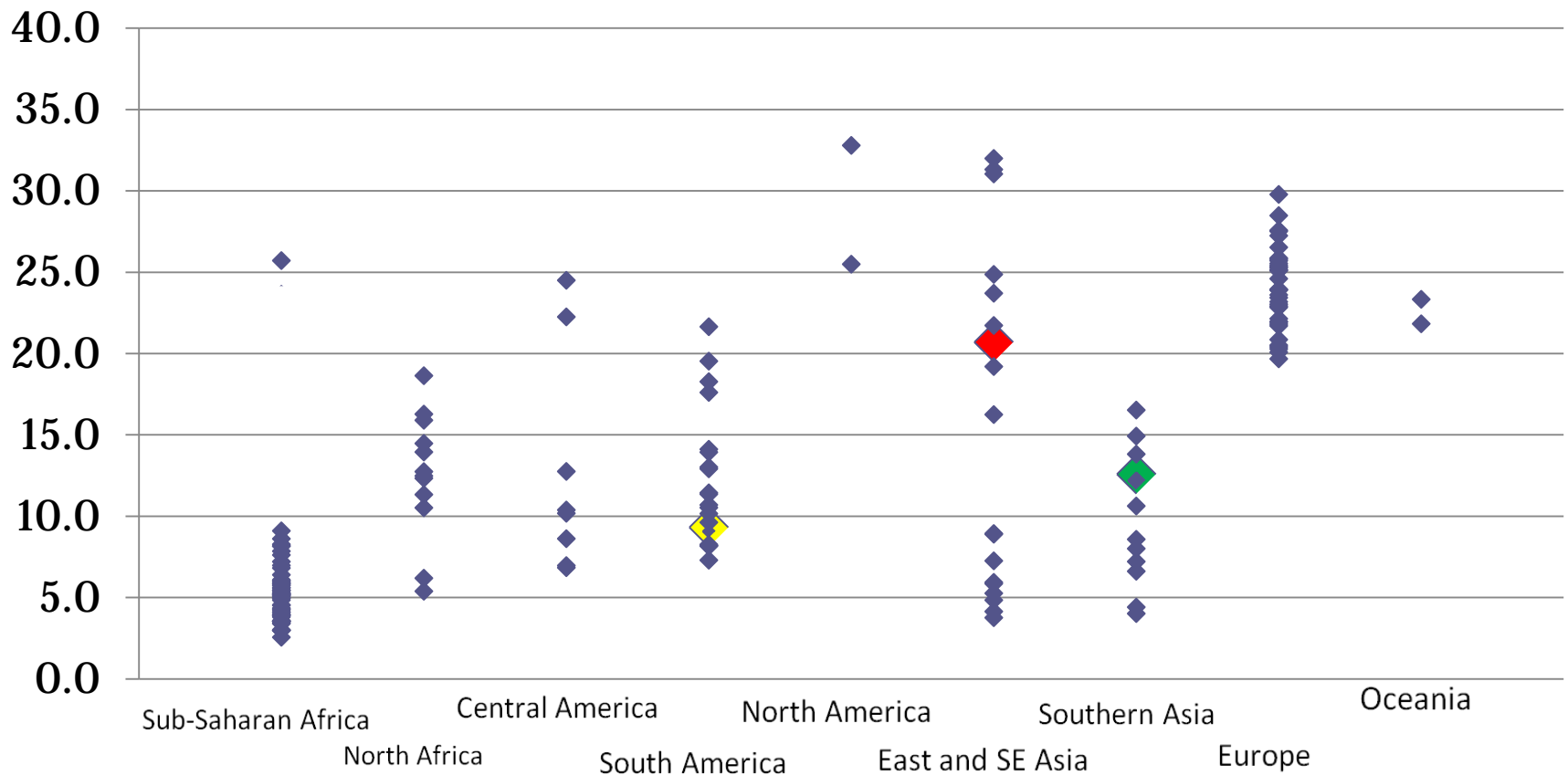
# Efficiency gains result from substitution



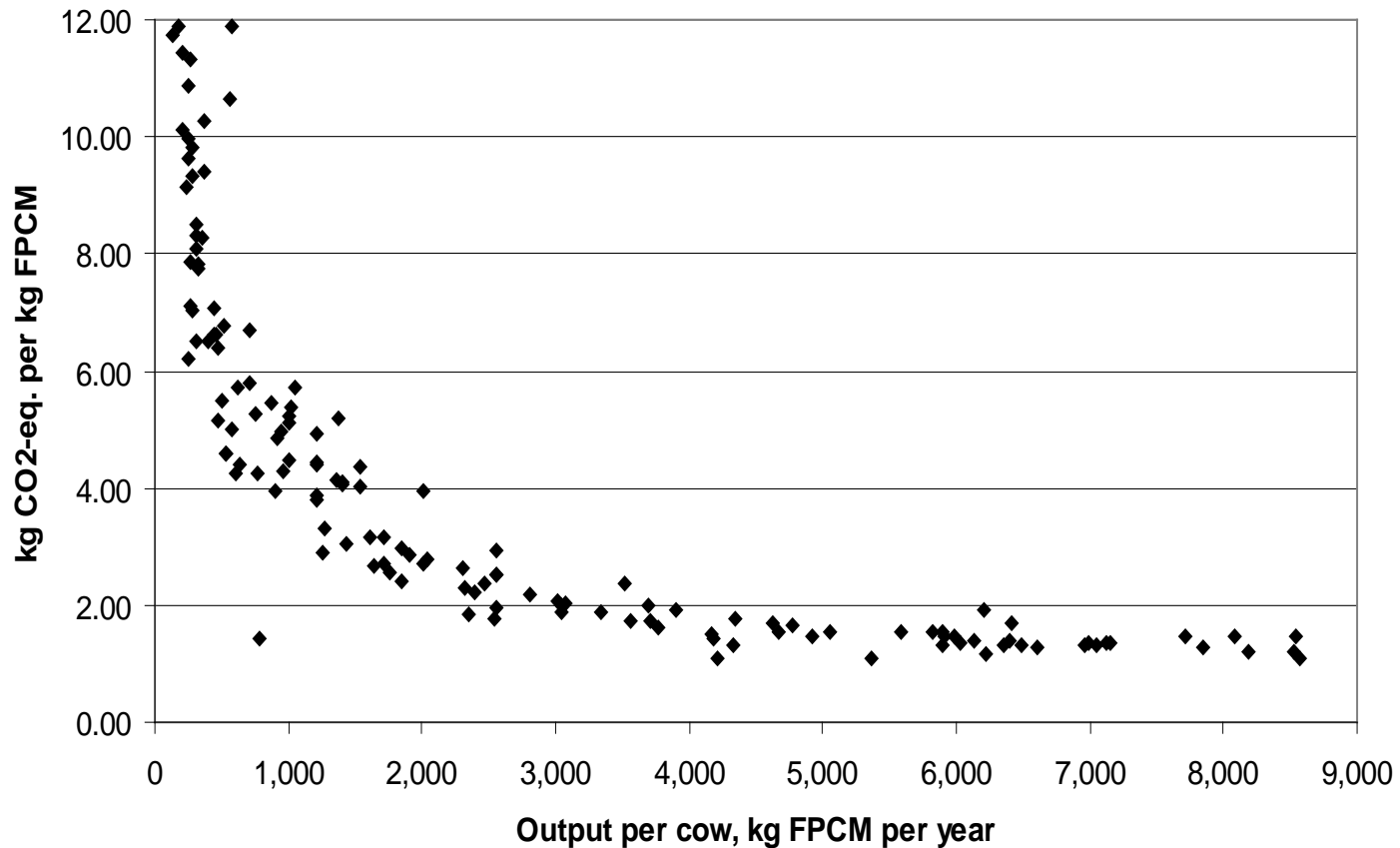
# Closing the Efficiency Gap

# Inter-country comparison of nitrogen use efficiency in dairy production

(Share of ingested N found in milk and meat)



# Relationship between total greenhouse gas emissions and milk output per cow

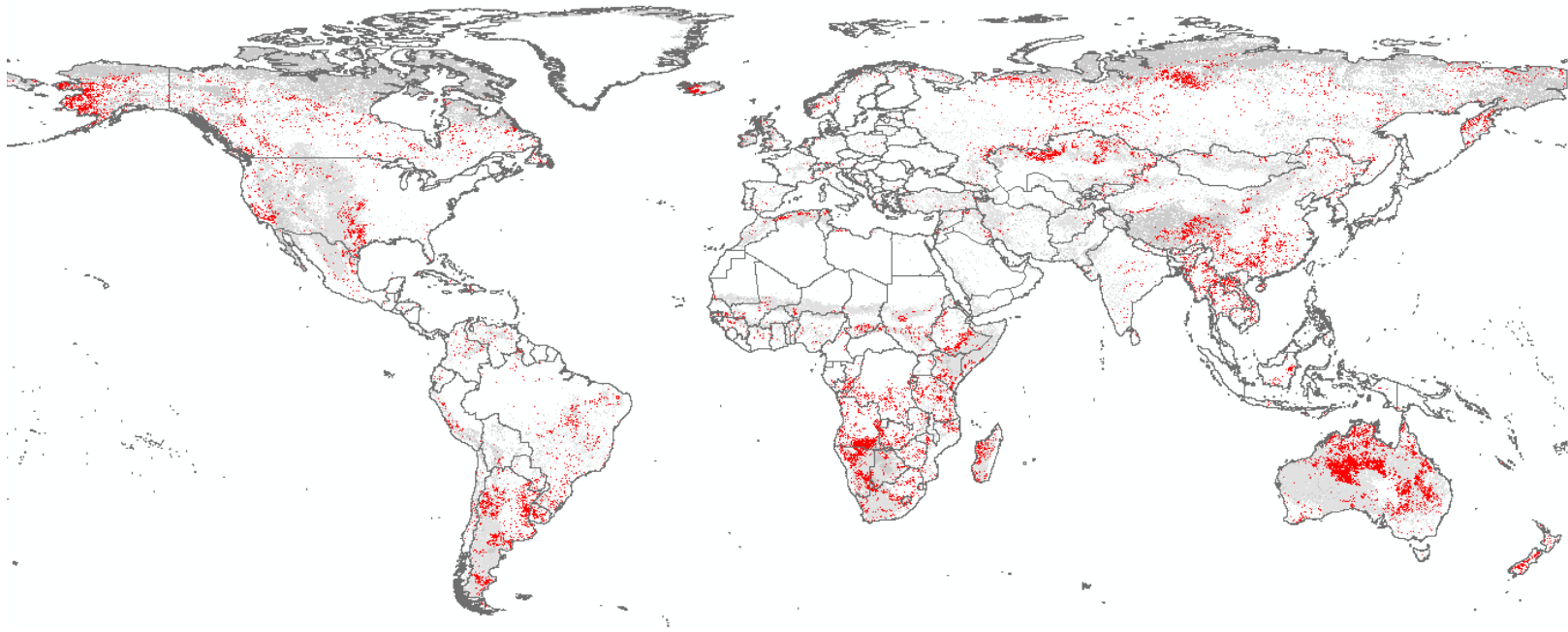


# Closing the efficiency gap

- Resource constraints have started to “bite” - high commodity prices induce innovation and drive technology
- Productivity and efficiency gains move largely in parallel
- Huge gaps between attainable and actually attained efficiency
- Gaps can be narrowed with existing technology
- Globally there is more gain from large numbers of producers catching up than from pushing the frontier
- Prices need to reflect true scarcities of natural resources

# Restoring Value to Grasslands

# Degraded grasslands



*Satellite derived map using NDVI (Normalized Difference Vegetation Index) data from 1981 until 2003  
Methods to obtain this map: NDVI is converted to NPP (net primary productivity) and corrected by Rain-Use Efficiency (correct the rainfall variability effect).  
the trend in time (1981-2003) defines improvements (higher NDVI) or decline of the vegetation*

# Restoring value to grasslands

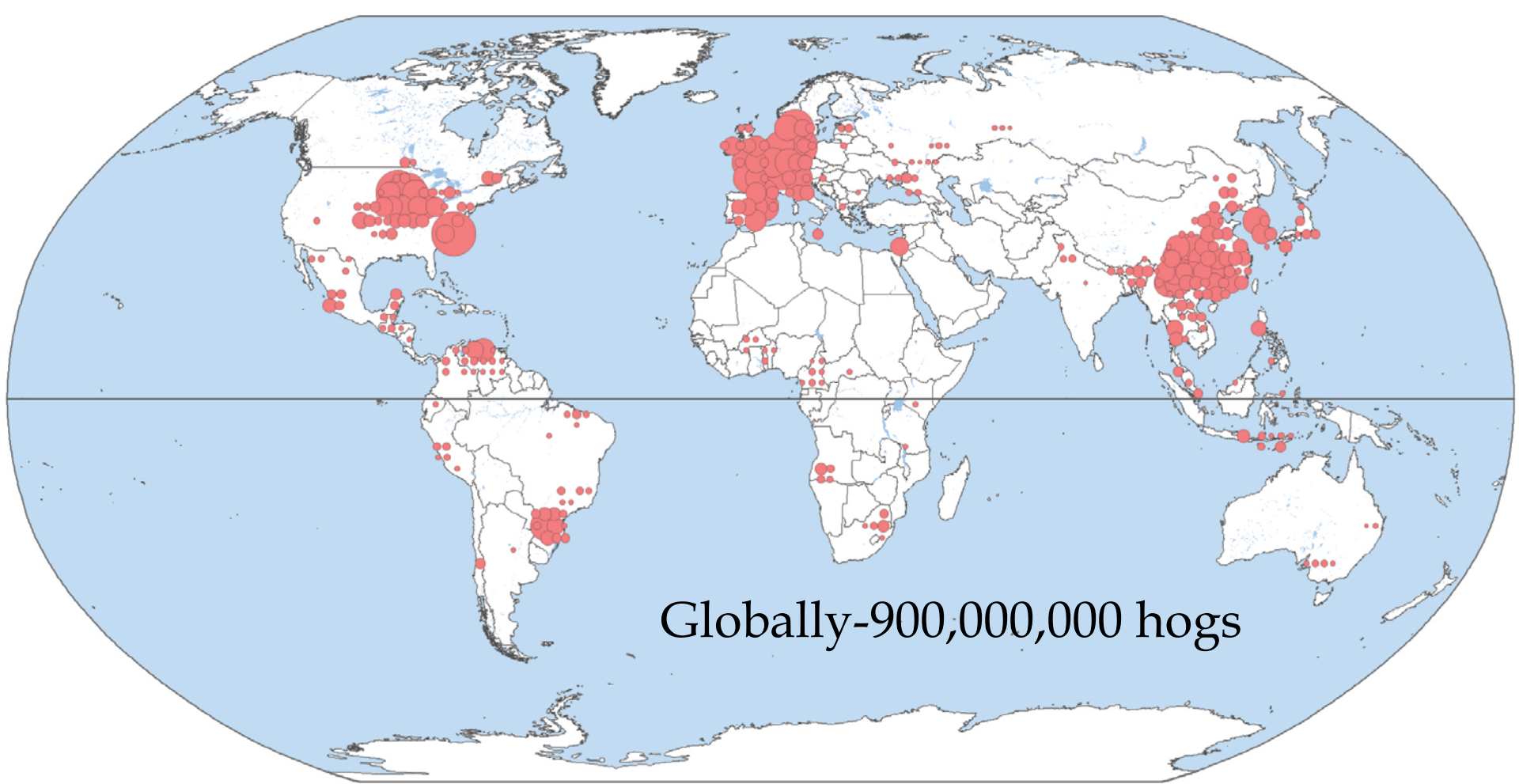
**Issue:** neglect of extensive grazing areas, their people and their potential services

- improved range management can help store soil carbon: average  $0.13$  to  $0.81 \text{ tCO}_{2-e} \text{ ha}^{-1} \text{ yr}^{-1}$  for moist and dry grasslands, respectively (IPCC, 2006)
- strong synergies between productivity gains, climate change mitigation and adaptation and other environmental services

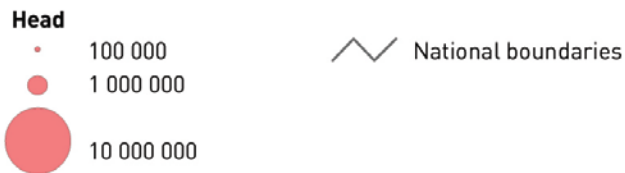
# Restoring value to grasslands

- Carbon finance and other PES can alter the production function of grasslands, particularly in marginal areas
- Develop a “business case” for grasslands – multiple, global and local, environmental services
- Certification methodologies are required
- Institutional mechanisms for benefit sharing need to be developed

Towards zero discharge

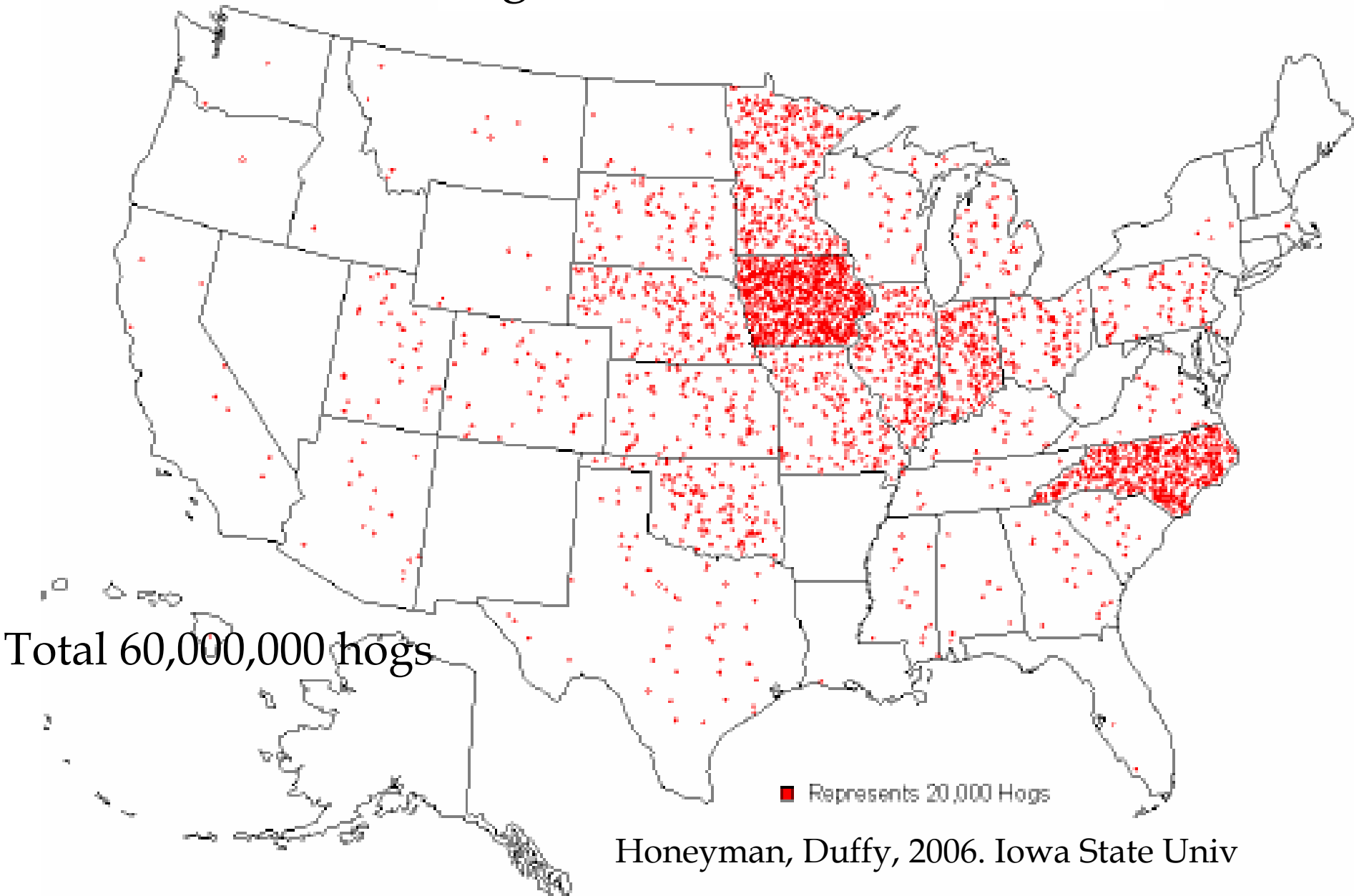


Globally-900,000,000 hogs



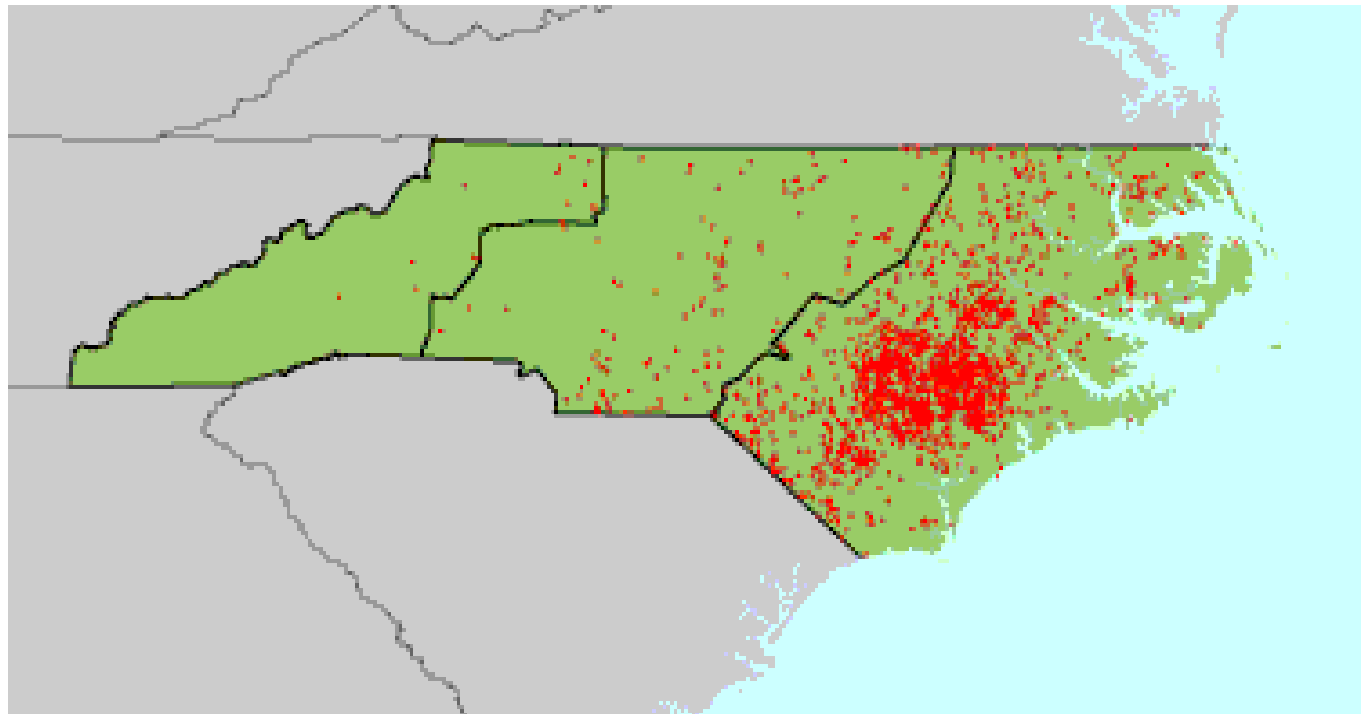
Estimated distribution of industrialized produced pig populations. Livestock's Long Shadow, 2006

# Pig Distribution in the US



# Pigs in North Carolina

- 9,800,000 hogs and pigs
- 63% are grown in 5 of the 100 counties of the state
- 45% are in 2 of the 100 counties of the state and are on the coastal plain



# Towards zero discharge:

Recovery of nutrients and energy from animal manure

**Issue:** Discharge of animal manure into the environment caused by geographic concentration of livestock

- total amounts of nutrients in livestock excreta > synthetic fertilizers
- 50 to 90 percent of nutrients contained in feed are excreted as manure, 30 % of energy
- Technology exists to recover most of the energy (biogas) and nutrients (except N)
- Policies to address spatial distribution of livestock are required





















# Programme of action and structure

# Closing the natural resource use efficiency gap

**What has changed:** The natural resource constraint is increasingly perceived by stakeholders

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Actions	Governments	Private Sector	Civil Society Org.	Science	Inter Governmental Org.
Measuring efficiency <b>Partnership</b>					
Assessing natural resource use efficiency gap and options to close the gap					
Develop PPPs and other models to foster innovation and technology transfer					
Promote investment programmes for efficiency improvement					






















**Expected result:** More knowledge intensive practices, with more efficient natural resource use

# Restoring value to grasslands

**What has changed:** Payment for Environmental Services and climate change finance can reverse the neglect of grasslands and enhance productivity and incomes

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Actions	Governments	Private Sector	Civil Society Org.	Science	Inter Governmental Org.
Assessing and targeting the potential for carbon sequestration and synergies with food security and other env. services					
Developing Monitoring Reporting and Verification methodologies					
Piloting institutional and technical approaches 					
Develop intergovernmental support for grasslands, e.g. within UNFCCC					





















**Expected result:** Pastoralist adopt practices that provide environmental services and improve food security

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**What has changed:** Discharge of animal manure is less and less accepted

Actions	Governments	Private Sector	Civil Society Org.	Science	Inter Governmental Org.
Analyze the clustering trend and assess the constraints to the adoption of good manure management practices					
Develop regional networks that can provide assistance to policy makers					
Create opportunities for nutrient recycling and energy recovery					
Foster the development of PPPs and other models to foster technology transfer and farmers' participation					

**Expected result:** Increased nutrient and energy recovery from manure, resulting in reduced pollution

# The Agenda's stakeholders

- Governments
- Private sector (branch organizations)
- CSOs
- Research and academia
- Intergovernmental organizations (global, regional)
- Smallholders/pastoralists not represented at global level (will be at operational level)

# Implementation entities

- Platform of all members
- Steering Group
- Secretariat
- Centers of excellence and *ad hoc* expert groups
- Regional hubs, closer to stakeholders, along focus areas

# Timeline

- Thematic consultations : April and May 2011
- Presentation to COAG: May 2012
- Next Platform meeting: June 2012
- Launch: before end 2012



# Where FAO fits in

- Part of the debate, as one of the main initiators
- A central engagement in the process so-far, responding to the request of COAG 22
- COAG to advise on the nature and level of FAO's engagement
- COAG to consider the Agenda of Action as a concrete contribution to Greening the Economy with Agriculture and related intergovernmental processes (eg. Rio+20)

# What's new?

- The thematic focus
  - *Offers strong synergies between economic gains and environmental impact reduction*
- The action-orientation (change in practice)
  - *Build on the sense of urgency to put what we know into practice*
- Value added of the multi-stakeholder engagement
  - *Convergence of interests and action will translate into change of practices*