



GLOBAL AGENDA FOR SUSTAINABLE LIVESTOCK

# The Manure Knowledge Kiosk, Short introduction and first results

Action Area

***Waste to worth***

*hosting the*

**Livestock and Manure Management Component**  
for reducing Short-lived Climate Pollutants  
of the **CCAC Agriculture Initiative**

a CCAC funded project

Eddy Teenstra, Manager Manure Knowledge Kiosk



CLIMATE AND CLEAN AIR COALITION  
TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS

# Overview

1. Integrated Manure Management
2. The Manure Knowledge Kiosk
3. Results Global assessment
4. Identified Opportunities for Practice Change



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## Waste to worth?



**MANURE IS NOT WASTE !!!**

○ **Manure MISMANAGEMENT is a WASTE !!!**

*→ a waste of valuable resources*

## Food for Thought

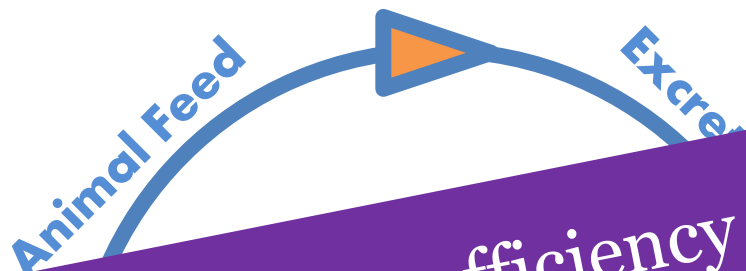
- Farm animals excrete much of the up taken nutrients unused via dung and urine
- Capturing these nutrients and recycling them to the soil is essential for the sustainability of crop and livestock systems
- Efficiency depends on manure management
  - ➔ awareness, knowledge, skills, attitude etc.
  - ➔ manure policy and enabling environment

# Cycle principle

inputs →

**Animals**

→ outputs



**Increase efficiency**  
→ reduces emissions  
→ reduces need inputs



inputs →

**Soil**

emissions



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# Integrated Manure Management

Collection

Storage

Application

- Great diversity; no single solution
- Taking into account local circumstances
  - Climate, scale, tradition, agricultural practices etc.
  - Increase efficiency / reduce emissions

# Integrated Manure Management

Collection

Treatment

Storage

Application

- Anaerobic Digestion
- Composting
- Drying
- Separating
- ...

# Integrated Manure Management

**always site specific**

Collection

Treatment

Storage

Application

Collection

Storage

Application

Collection

Application

Collection

Treatment

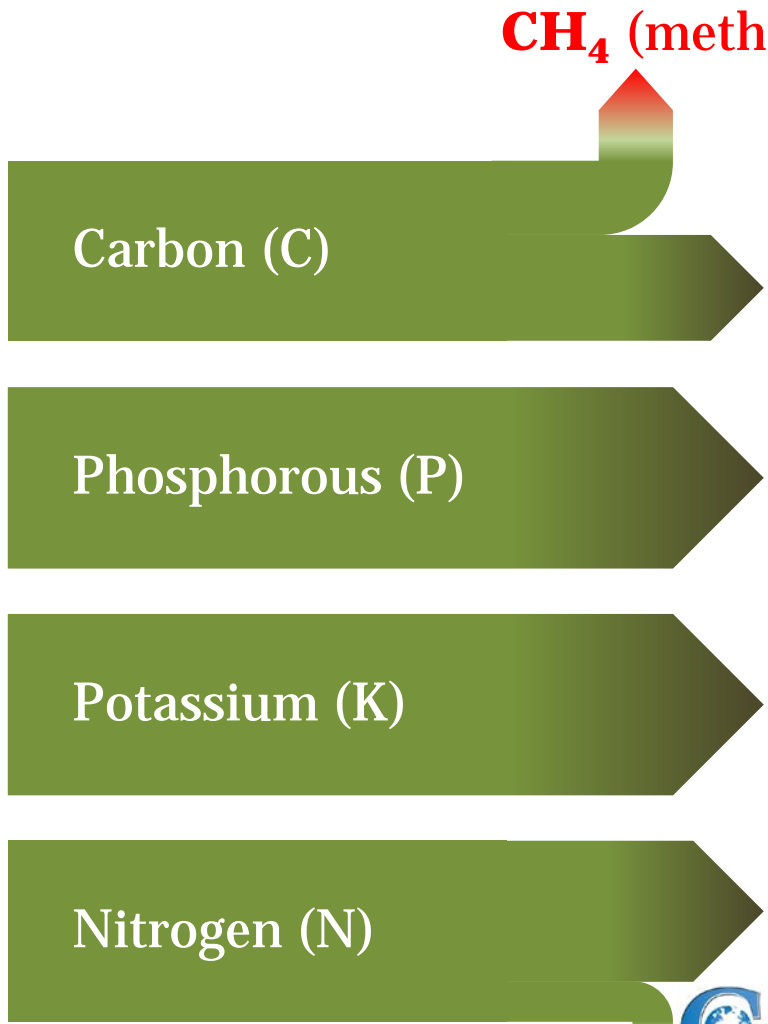
Application



# Minerals



D  
U  
N  
G  
&  
U  
R  
I  
N  
E



CH<sub>4</sub> (methane)



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# Minerals

**CH<sub>4</sub> (methane)** → **Anaerobic Digestion**

→ **Biogas**

- Save fossil fuel
- Save firewood
- Electricity

← **Digestate**

Carbon (C)

Phosphorous (P)

Potassium (K)

Nitrogen (N)

**S**

**O**

**I**

**L**

**NO<sub>x</sub>/NH<sub>3</sub> (emissions)**



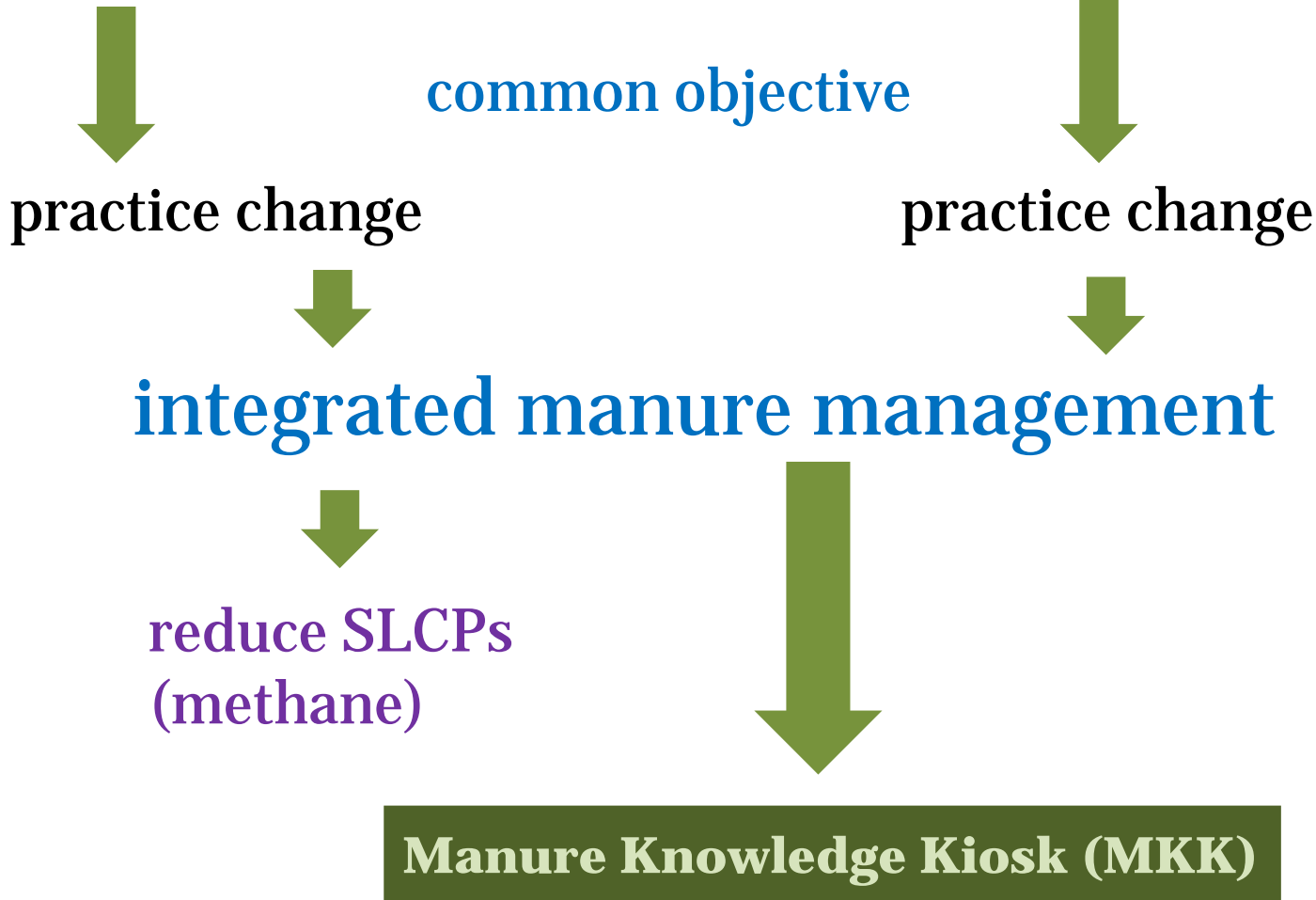
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# LMMC implementers

## **Central Hub**

- Wageningen UR Livestock Research
- U.N. Food and Agriculture Organization (FAO)

## **Regional Centres**

- Centro Agronómico Tropical de Investigación y Enseñanza (CATIE)  
(Tropical Agricultural Research and Higher Education Center)
- Stockholm Environment Institute (SEI)
- International Livestock Research Institute (ILRI)



# Manure Knowledge Kiosk

## Web-based Knowledge Counter

### 👉 one Front Door to:

- Subject library
- Global overview of lessons learned
- Entry to Livestock GEO wiki (Google Earth mapping)
- E-Market for service and assistance (Roster of Experts)
- List of Opportunities for Practice Change

[www.manurekiosk.org](http://www.manurekiosk.org)

Under  
construction



# Roster of Experts

## Objective

Provide a network of experts to people and organizations in search for knowledge/expertise about integrated manure management

**Invitation to join the Roster → just contact me**



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# Global Assessment

... of Manure Management Policies and Practices

## Two steps

1. **General information about national manure policies and the enabling environment**
2. **More in-depth information about manure practices in areas with large numbers of livestock in confinement**



## Preliminary Results Manure Policy (MP)

- All countries have a kind of MP
- Always Agriculture and Environment  
some also Energy and Health
- Problem oriented  
e.g. air pollution by Health
- Often weak enforcement and unclear rules
- ‘Stronger’ policies seem to cover less factors, but
  - increase the administrative burden for farmers
  - show more stimulation of good practices



## Preliminary Results Enabling Environment (EE)

- Available subsidies and credits
  - ➔ not always available for large scale farms
- Knowledge level IMM not always high enough (some wishful thinking...)
- Social media are spreading but its potential value is probably underestimated (yet)
- Beside knowledge the EE doesn't **seem** to be the major bottleneck in improving manure management practices (the in-depth survey may provide the answers)



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## Opportunities for Practice Change (OPCs)

- **Kiosk financially supports OPCs with high potential to leverage ongoing investments and enhance their potential impact**
- **Five areas with key barriers:**
  - (1) gathering knowledge
  - (2) raising awareness
  - (3) partnerships/networks
  - (4) policy and capacity development
  - (5) support of financing



## Some examples of OPCs

### ○ **Argentina**

**Coping with the feedlot revolution: Creating knowledge base on manure management in Argentinian feedlots**

- Focus: gathering knowledge, raising awareness; and policy and capacity development
- Problem: law enforcement without complete information and adequate tools

### ○ **México**

**Improving sustainability for small-scale farmers: focusing on better manure management practices**

- Focus: gathering knowledge, raising awareness, partnerships/networks; and policy and capacity development
- Problem: lack of knowledge about proper manure use; quantity, timing, application, and costs



## Some examples of OPCs

### ○ **Malawi**

Manure management through family size biogas plant of rural smallholder farmers

- Focus: gathering knowledge and raising awareness
- Problem: lack of knowledge about the optimal mixtures of manure and other organic waste to 'feed' bio-digesters

### ○ **Nigeria**

### ○ **Ethiopia**

### ○ **Viet Nam**

### ○ **Bangladesh**

### ○ **Thailand**

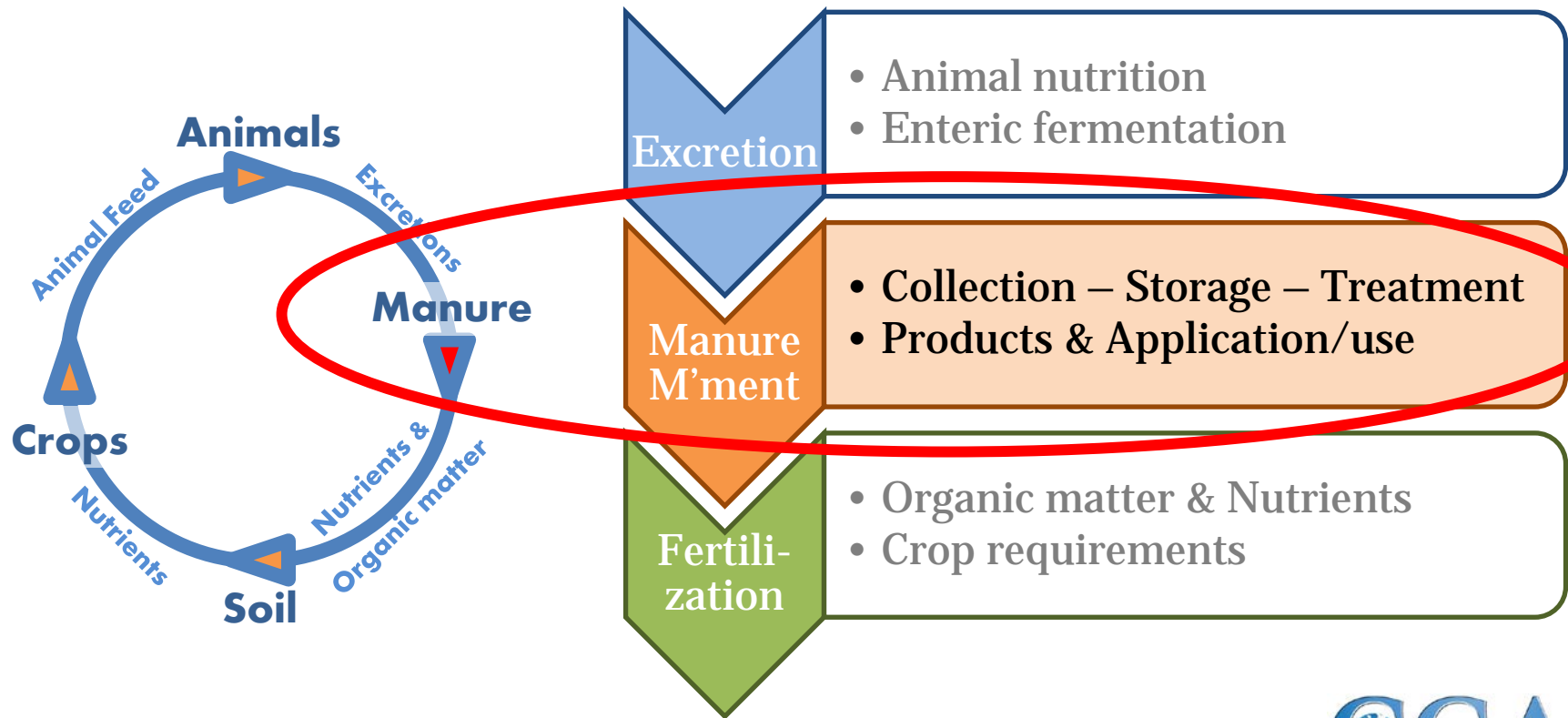
### ○ **Costa Rica**

**Much emphasis on biogas**

- **To install**
- **To improve performance**
- **To use digestate**



# Scope Manure Knowledge Kiosk



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# Food for Thought

- Do we want **OUR** world, which is the world of our **CHILDREN**, to change into this?



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I wish you a lot of wisdom and inspiration!



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## Time for questions

e.g.

- Subject areas
- Geographical areas
- Roster of Experts
- ...



[www.livestockdialogue.org](http://www.livestockdialogue.org)