



# **CCAC Agriculture Initiative: Livestock and Manure Management Component Start-up Meeting**

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Photo: C. Hernandez, ICE 2013



## **Costa Rica Carbon Neutral.... encouraging context**

**NAMAs:**

**Coffee (25% emissions GHG)**

**Livestock (40% emissions GHG)**

**Sugar cane (11% emissions GHG)**







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**Organic Waste used  
for:**

**a. Fertilizer (mainly)**

**b. Source of energy  
(for self consumption  
at farm level)**



# Manure: an important resource...



**Experiences in Costa Rica**



**Reducing  
fertilizer cost**

**but**

**What is the  
effect in  
underground  
sources of  
water?**







**A: pasture area with  
manure**

**B: pasture area without  
manure**

**Soil effects?**

**Grass effects?**

**Air effects?**

**Economics effects?**







Biodigestor capacity among 20-60 kw		
Number	Biogas (m3/day)	Methan (m3/day)
8	20-290	14-200
Source: K. Hernandez; 2013		



Photo: C. Hernandez, ICE 2013





**In organic farms the use of manure is very popular**

**Composting with different kind of organic residues**







**Application in  
cutting pasture  
areas**



**Collection in a  
tank to add micro-  
organisms**





**Application in  
cutting pasture  
areas**



**Collection in a  
tank**



*Constrains: points to study more.*

*Research on manure efect uses in different soil types*

*Relevant data on environmental and economic effects  
due to manure uses in site and off site*

*Laboratory capacities*



*Thank you*



Photo: R. Azofeifa, 2012.