



LOW EMISSION DEVELOPMENT & CLIMATE-SMART AGRICULTURE

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Siem Reap, Cambodia
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OUTLINE

1. What are Low Emissions Development Strategies (LEDS)?
2. What is USDA doing related to LEDS?
3. Opportunities for future collaborations

LOW EMISSION DEVELOPMENT STRATEGIES (LEDS)

Key objectives:

- reduce greenhouse gas emissions
- increase resilience to climate change impacts
- achieve social, economic and environmental development goals

Platforms:

- LEDS Global Partnership
- Enhancing Capacity for LEDS (EC-LEDS) – USG interagency initiative

Synergistic to Climate-Smart Agriculture, with development goals more explicitly being spelled out in terms of agricultural productivity

USDA & LEDS

Leveraging technical expertise within the department and at US land-grant universities, such as:

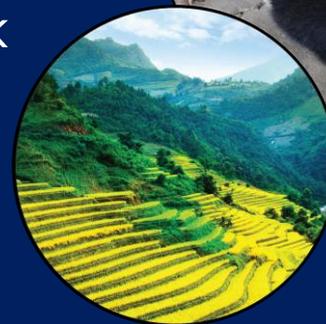
- Agricultural statistics
- Agrometeorology
- Animal productivity modelling
- Climate and crop modelling
- CSA technology development
- Econometric modeling and cost-benefit analyses of practices
- Linking science with policy
- Monitoring and evaluation
- etc.

USDA & ECLEDS

2011-2018



USAID
FROM THE AMERICAN PEOPLE



- **Costa Rica** – Implementation of Livestock Nationally Appropriate Mitigation Action (NAMA)
 - USAID, Min. of Agr, Min. of Env, CATIE, Univ. Wisconsin, ICRAF
- **Mexico** – Agriculture GHG monitoring protocols from cereals, nitrous oxide emissions factors
 - Min. of Agr, CIMMYT, COLPOS, Michigan State University
- **Vietnam** – Improved water and fertilizer use in rice and feed and waste management in livestock
 - Min. of Agr, NAEC, UC Davis, Univ. of Arkansas
- **Kenya** – Protocols for quantifying emissions from CSA practices, scientific exchange programs
 - Min. of Agr, ICRAF, FAO, Cornell, Univ. of Florida

OPPORTUNITIES

- Expansion of USDA EC-LEDS work in Asia under exploration
- Strengthen links between REDD+ and LEDS across landscapes e.g. Agroforestry;
- Sharing lessons and tools with interested country counterparts
 - Leverage the LEDS-GP and EC-LEDS platforms
 - Link with the NDC Leadership Compact initiatives
- USDA works with other USAID missions on climate-smart agriculture outside explicit LEDS work
 - e.g. CSA program with FTF Tanzania - leveraging expertise towards government capacity building needs



THANKS

USDA ECLEDS programs

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SUPPLEMENTAL SLIDES

LEDS GLOBAL PARTNERSHIP

Building skills in low emission development and Nationally Determined Contributions (NDCs) implementation

Working Groups

Agriculture, Forestry and Other Land Use

Benefits

Energy

Finance

Subnational Integration

Transport

- peer learning, technical assistance, knowledge resources, and early mover projects
- formation and implementation of LEDS
- 79 countries, 300 institutions
- 3 regional platforms, 6 technical working groups
- CSA -> AFOLU group, initiated at Asia LEDS 2013 mtg



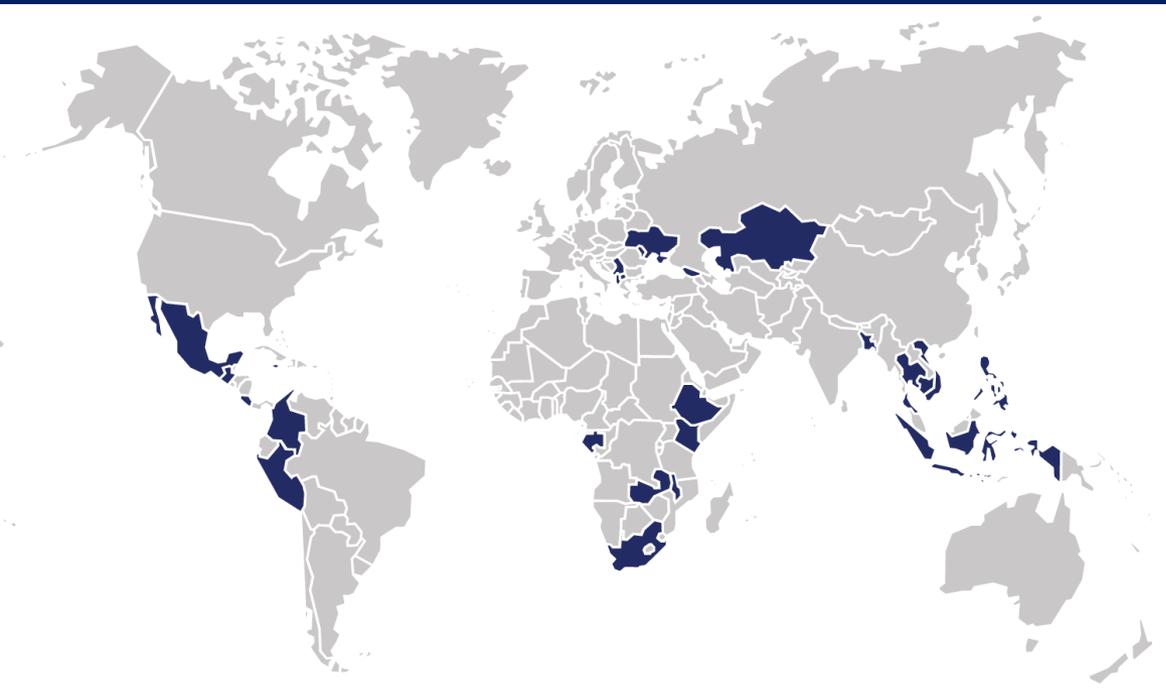
ENHANCING CAPACITY FOR LOW EMISSION DEVELOPMENT STRATEGIES (EC-LEDS)

US Government interagency effort to assist countries developing and implementing LEDS

Works with partner countries on:

1. Targeted technical assistance
2. Building shared knowledge base on LEDS

EC-LEDS: WHERE & WHAT



Planning

- Supporting institutions
- Greenhouse gas (GHG) inventories
- Data and analysis

Action

- Clean energy
- Sustainable landscapes

USDA EC-LEDS VIETNAM

Current: Managing beef and dairy cattle for productivity and low emissions

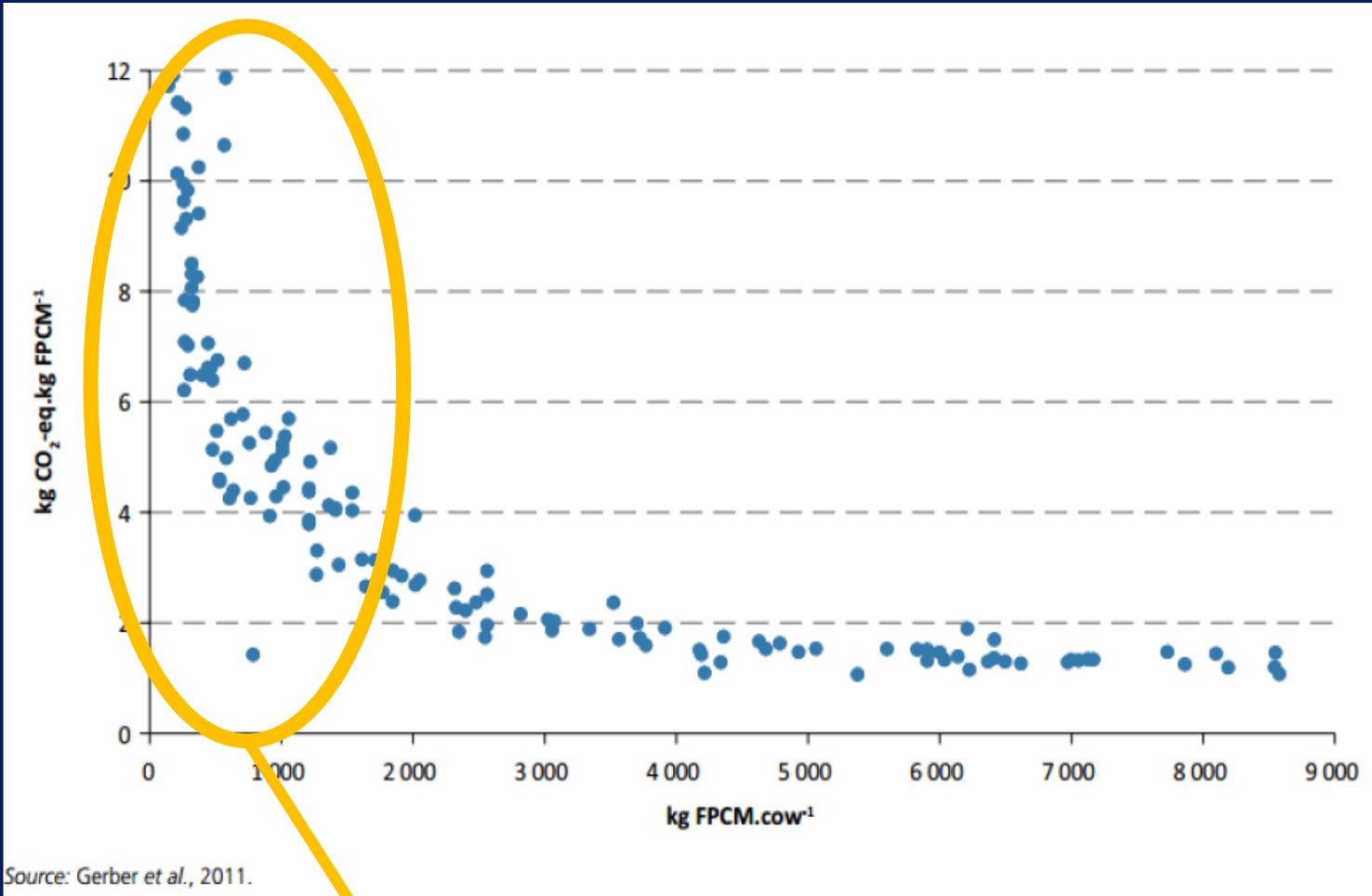
- Partners: Ministry of Agriculture and Rural Development (MARD), National Agriculture Extension Center (NAEC), UC Davis
- Output: Beef and dairy cattle Least Cost Ration Formulation Programs
- Training extension officers how to improve feed recommendations, based on locally available feed, to increase productivity and decrease emissions

USDA EC-LEDS VIETNAM

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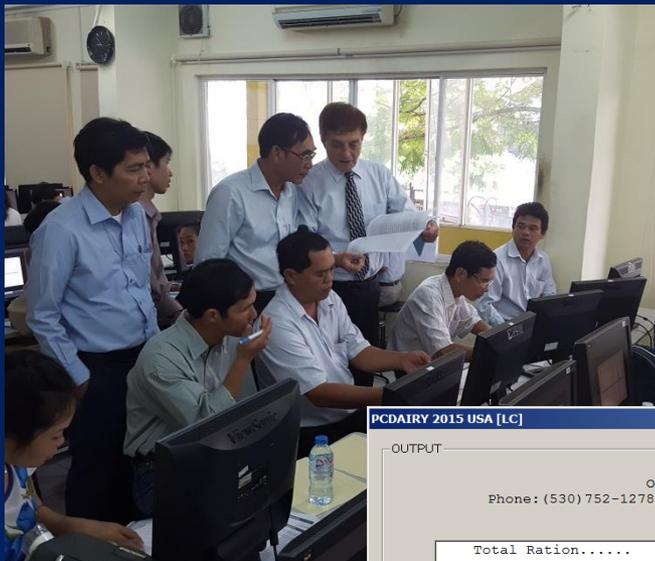
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Relationship between productivity and emissions intensity (kg fat and protein correct milk (FPCM) vs. kg CO₂ equivalent/kg FPCM)



Increased productivity and decreased emissions intensity coupled for cows producing <2000kg FPCM/yr

TAURUS & PCDAIRY SOFTWARE UCDAVIS



PCDAIRY 2015 USA [LC]

-OUTPUT-

California Dairy Cattle Ranch
One Shields Avenue, Davis, CA 95616
Phone: (530) 752-1278 FAX: (530) 752-0175 http://animalscience.ucdavis.edu

Total Ration.....	84.835	49.316
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Roughage:Concentrate Ratio = 43:57 (DM)

Cost Analysis	\$ per cow	per day
Roughages	1.19	
Concentrates	2.39	
Total Ration	3.58	

New module for this version of PCDAIRY

METHANE EMISSION
Lactating Cows

Methane Emission in MJ per day per head.....	21.669 MJ/d
Methane Emission in Mcal per day per head	5.179 Mcal/d
Methane Emission in gram per day per head	389.733 g/day
Methane Emission in gram per lb dry matter intake ..	7.903 g/lb
Methane Conversion Rate	5.155 Percentage

The methane conversion rate is the fraction of gross energy in diet converted to methane (percent). Normal Range 2-12: 3.5 Extremely Low, 4.5 Very Low, 5.5 Low, 6.5 Average, 7.5 High, 8.5 Very High, 9.5 Extremely High.

Files < Go to > Combine DM Basis Feed Group Help Input Main Menu

Trainings:
2015 Taurus
2016 PCDAiry

Software in English
and Vietnamese
(&Spanish PCDAiry)

NEXT STEPS

- Scaling results through extension system
- Local case studies & recommendations
- Factsheets for farmers



ADDITIONAL CONTACTS

Taurus and PCDairy software: Ermias Kebreab, ekebreab@ucdavis.edu

EC-LEDS: USAID GCC office; DOS Ashley Allen allena4@state.gov

LEDS-GP: secretariat@ledsgp.org

LEDS-GP AFOLU working group: afoul@ledsgp.org