

**H***i***VOS**

**people unlimited**

# Carbon Credits and Sustainable Agriculture A Development Perspective

- RTOACC, meeting Bonn 11 July 2013
- 1) Background: Hivos, an international development organisation
  - 2) Green Entrepreneurship and Climate Change
  - 3) Climate Smart Agriculture
  - 4) Sustainable Development: Operational Framework Gold Standard

*Harry Clemens – presentation RTOACC Bonn, 11 July 2013*

# Hivos in the world





# Hivos



## Background: Hivos – International Development

- Hivos = Development NGO
- Expression & Engagement
- Rights & Citizenship
- Green Entrepreneurship
- Action for Change
  - Green Entrepreneurship
    - Renewable Energy
    - Sustainable Agriculture
    - Greening Financial Services

# Green Entrepreneurship and Climate Change

- Green Entrepreneurship
- → Renewable Energy → Carbon Finance
- → Sustainable Agriculture --> PES & Carbon Finance (*in development*)

## Renewable Energy

Development Objective: Access to Energy, but

- acknowledging that fossil fuel pathway is no option because of climate change
- decentralized energy solutions provide opportunities for small entrepreneurs and create employment

Example: Domestic biogas programmes, with SNV, in Indonesia, Africa (ABPP 5 countries) and Nicaragua

# Objective ABPP

To contribute to the achievement of the Millennium Development Goals through the dissemination of domestic biogas plants as a local, sustainable energy source through the development of a commercially viable, market-oriented biogas sector.



# Green Entrepreneurship and Climate Change

## Carbon Credits as co-financing source for Renewable Energy

- Hivos Climate Fund buying carbon credits from NBP Cambodia since 2007, registered VGS since 2011
- Development of Gold Standard and CDM projects for domestic biogas programmes in Indonesia, Kenya/ Africa, Nicaragua
  - Sustainable Agriculture --> PES & Carbon Finance
  - > same principles, but different specifics
    - = multiple environmental services =
    - = less carbon revenues =



# Green Entrepreneurship and Climate Change

## Sustainable Agriculture

Development Objective: **Food Security at global and local level**, but

- Acknowledging planet boundaries
  - Improved productivity (incl soil fertility) of smallholders is key to increase rural incomes and employment
  - Adaptation to climate change is imperative / resilience (even necessary without climate change)
- + **Biobased Economy**: beyond food: agriculture/ nature needs to provide more products to replace fossil based economy

# Green Entrepreneurship and Climate Change

## Climate Smart Agriculture

*agriculture that sustainably increases productivity, resilience (adaptation), reduces/ removes GHG (mitigation), and enhances achievement of food security and development goals (FAO)*

Climate Smart Agriculture = Sustainable Agriculture / LEISA  
*Organic Agriculture fits well, but CSA is broader*

Environmental services = broader than climate:

climate, water, biodiversity

*PES & Carbon Credits is part of this*

*carbon finance for CSA is underdeveloped but PES even more!*

# Gold Standard Climate Smart Agriculture

Hivos Pilot projects to test new CSA methodology

- 1) Peru: conversion from rice to banana and cocoa with timber
- 2) Nicaragua: farm restoration from degraded land (coffee, fruit trees and other)
- 3) Kenya: usage of bio-slurry from biogas digester as alternative fertiliser

# Gold Standard Climate Smart Agriculture

1) Peru: conversion from rice to banana and cocoa with timber

Implementing partner: CEPICAFE

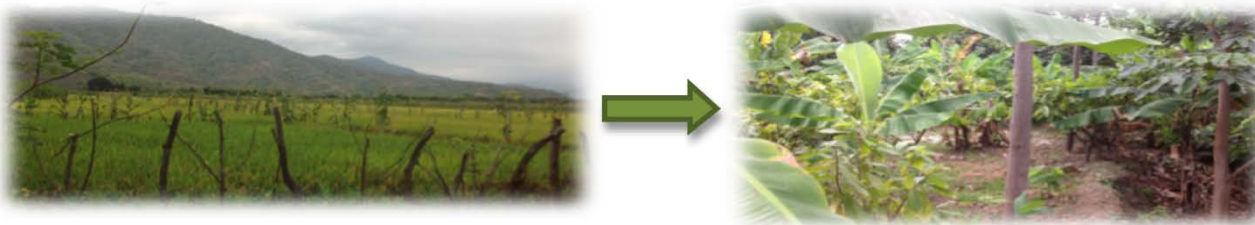
- assisted by Proclimate / Progreso Foundation



# Gold Standard Climate Smart Agriculture

## 1) Peru: conversion from rice to banana and cocoa with timber

- Experience with CarbonFix in coffee region/ reforestation
- - initial project 250 farmers, 500 ha ; will be expanded



- Land conversion from rice to banana/ cocoa/ timber
- Feasibility assessment has been completed May 2013
- Emission reduction potential calculated with Cool Farm Tool
- BE (rice) 16,5 tCO<sub>2</sub>e/ha PE 1,4 -> ER 15,1 tCO<sub>2</sub>e/ha

## Emissions from rice cultivation (Cool Farm Tool)

Rice	Emissions for total area,			Per hectare	Per tonne	Per tree (if relevant)
	CO2	N2O	CH4			
fertiliser production	1.101,3			1,1	1,1	0,0
direct and indirect field N2O	1.106,3	9,0		3,8	3,8	0,1
paddy methane			447,0	11,2	11,2	0,4
pesticides	20,5			0,0	0,0	0,0
crop residue management	-	1,4	-	0,4	0,4	0,0
carbon stock changes	-			-	-	-
livestock enteric emissions			-	-	-	-
livestock manure management		-	-	-	-	-
livestock feed	-			-	-	-
field energy use	-			-	-	-
primary processing	-			-	-	-
waste water			-	-	-	-
off-farm transport				-	-	-
<b>totals</b>	<b>2.228,1</b>	<b>10,4</b>	<b>447,0</b>	<b>16,5</b>	<b>16,5</b>	<b>0,5</b>

## Emissions from cocoa-tree cultivation (Cool Farm Tool)

Cocoa shade system	Emissions for total area,			Per hectare	Per kilogram	Per tree (if relevant)	
	CO2	N2O	CH4				tonnes CO2 eq
fertiliser production	3.218,2			3,2	3,2	0,0	11,6
direct and indirect field N2O	-	8,7		2,6	2,6	0,0	9,2
paddy methane			-	-	-	-	-
pesticides	41,0			0,0	0,0	0,0	0,1
crop residue management	-	0,9	-	0,3	0,3	0,0	0,9
carbon stock changes	(4.693,3)			(4,7)	(4,7)	(0,0)	(16,9)
livestock enteric emissions			-	-	-	-	-
livestock manure management		-	-	-	-	-	-
livestock feed	-			-	-	-	-
field energy use	-			-	-	-	-
primary processing	-			-	-	-	-
waste water			-	-	-	-	-
off-farm transport				-	-	-	-
<b>totals</b>	<b>(1.434,2)</b>	<b>9,5</b>	<b>-</b>	<b>1,4</b>	<b>1,4</b>	<b>0,0</b>	<b>5,0</b>

## Gold Standard Climate Smart Agriculture

### 2) Nicaragua: farm restoration from degraded land (coffee, fruit trees and other)

Implementing partners: CEDECO (Costa Rica) & PRODECOOP (Nica)

- CEDECO has developed Cam(Bio)2 methodology
- 3 components: SOC, GHG ER (incl fertilizer change) and Energy efficiency
- PRODECOOP: total 2,300 members, 4,295 ha; pilot project on 2 coops 262 members (incl 75 women)
- Baseline study ongoing (soil, biomass, emissions, socio-economic, food security, biodiversity)
- Measures: composting, shade/ biomass/ fruit trees?, other?



## Gold Standard Climate Smart Agriculture

### 3) Kenya: usage of bio-slurry from biogas digester as alternative fertiliser

Implementing partner: Kenya Federation of Agricultural Producers (KENFAP)

- Kenya Domestic Biogas Programme KENDBIP

- Already CDM/GS certified (registered at CDM) as a Renewable Energy ER project (AMS-I.E fuelwood replacement, AMS-III.R for methane avoidance not included for Kenya)
- We would like to add ER effect of bio-slurry : (fertilizer replacement, other?) -> *bio-slurry liquid application, dried or composted*
- Replicable to other domestic biogas projects

# Gold Standard & Sustainable Development Framework

Two tracks:

1) Carbon accounting

2) Sustainable Development

- Local Stakeholder Consultation Meetings
- Do Not Harm Assessment
- Sustainable Development Matrix
- Gold Standard Passport / part of Project Design Document
  
- NGO Supporters feedback
- Monitoring of ER & Monitoring of SD Indicators