



**USAID**  
FROM THE AMERICAN PEOPLE



# SANREM CRSP

Sustainable Agriculture and Natural Resource Management  
Collaborative Research Support Program



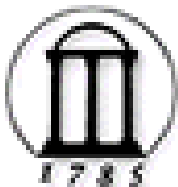
SANREM CRSP

## Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program



# SANREM CRSP

Sustainable Agriculture and Natural Resource Management  
Collaborative Research Support Program

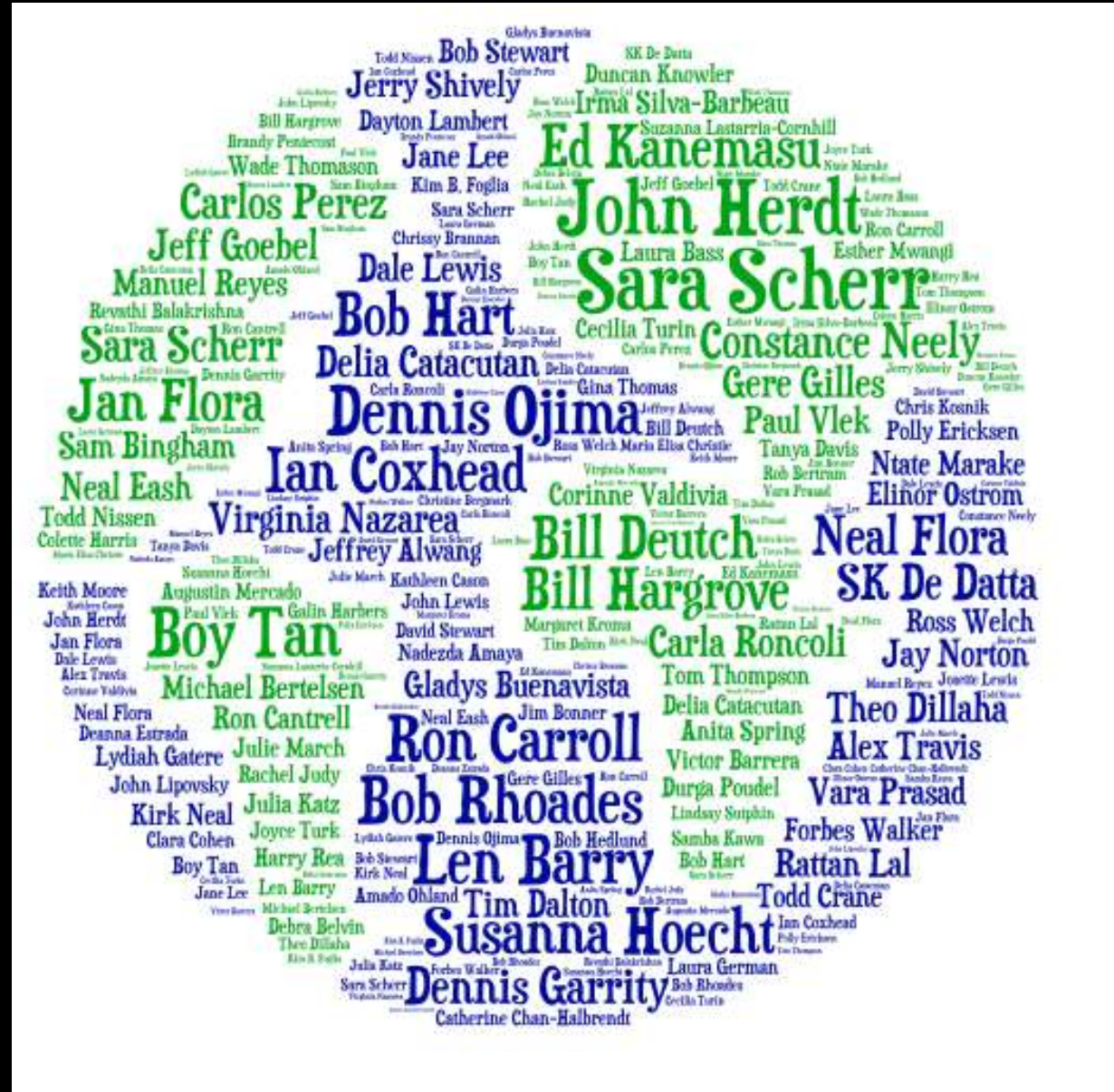


**University of Georgia**

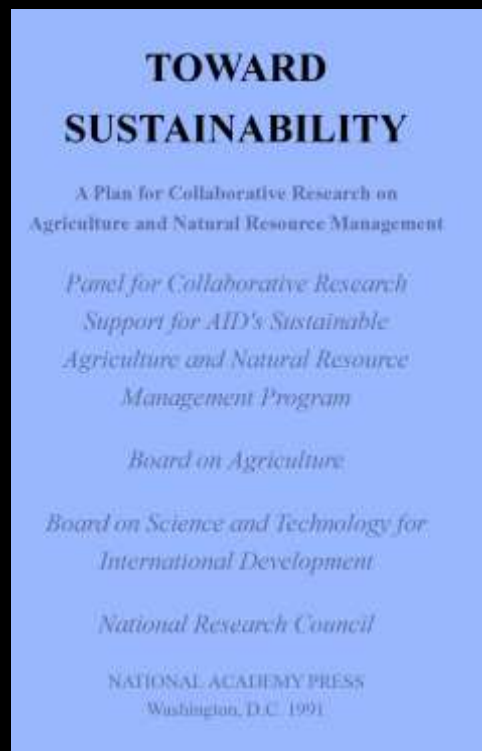


**VirginiaTech**  
*Invent the Future*

# No shortage of human resources



# Raising awareness and Setting (Evolving) Targets



NRC-NAS

1992

Earth Summit

1996

World Food Summit

UN CSD Review

2000

Millennium Development Goals (target 2015)

2002

World Summit on Sustainable Development (Rio+10)

UN CSD Review

2008

2010  
MDG Summit

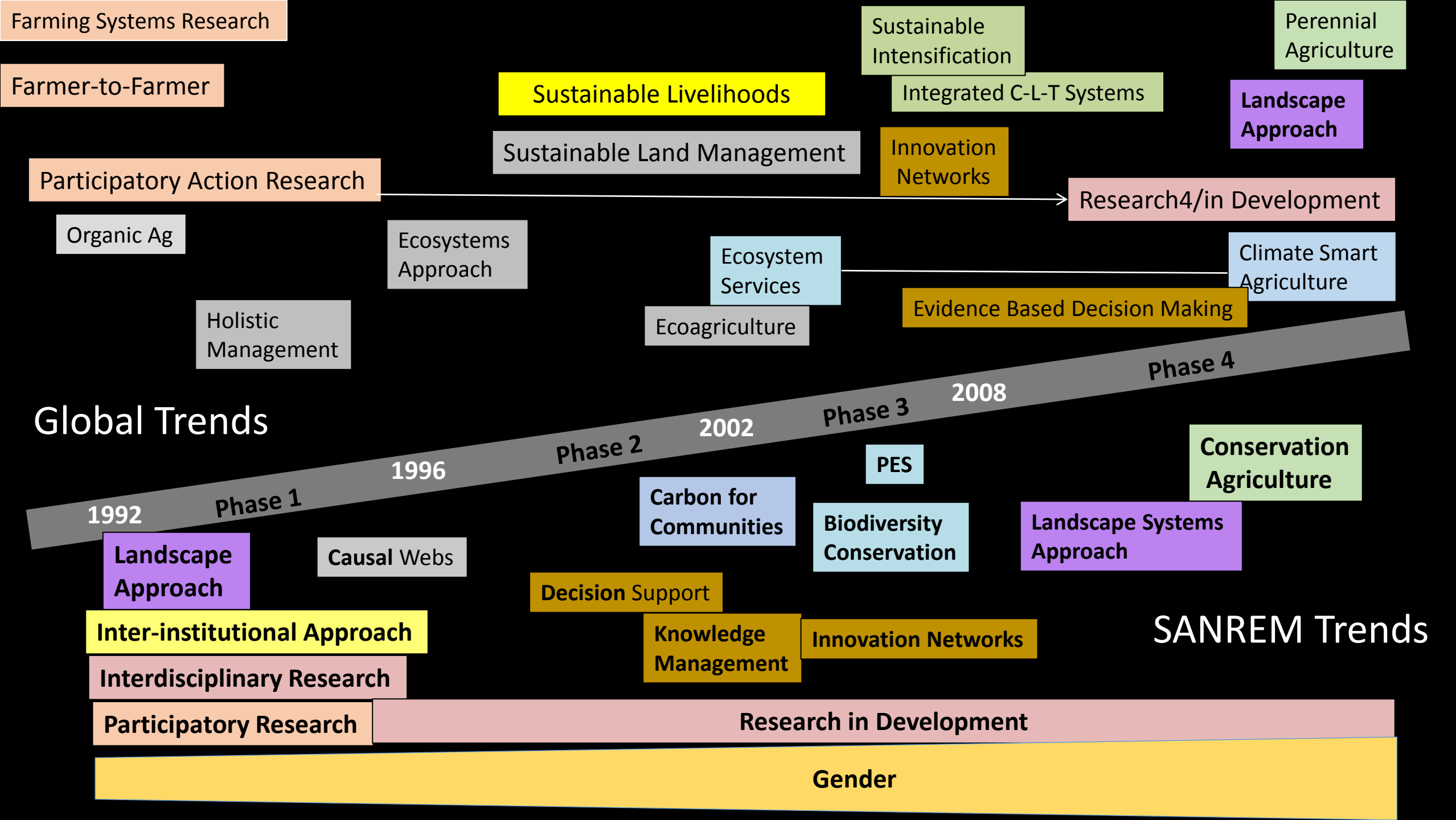
Green Economy Governance

2012

Sustainable Development Goals

2014







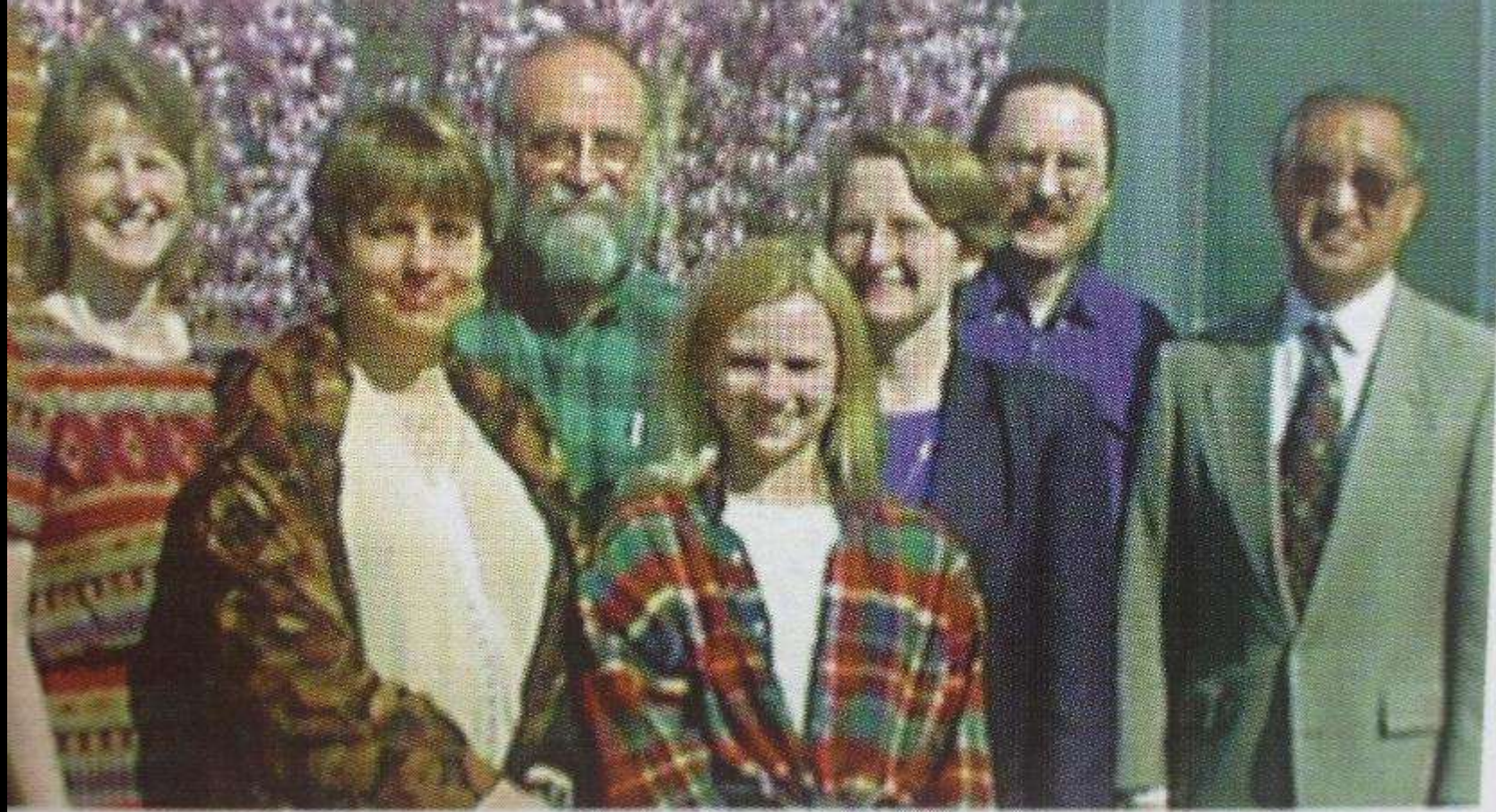
# SANREM SITES

Phase 1	Phase 2	Phase 3	Phase 4
<b>AFRICA</b>			
Burkina Faso Cape Verde	<b>Mali</b>	Zambia, <b>Kenya</b> , <b>Uganda</b>	<b>Kenya, Uganda</b> , Ghana, <b>Mali</b> Lesotho, Mozambique
<b>ASIA</b>			
<b>Philippines</b>	<b>Philippines</b>	<b>Philippines</b>	<b>Philippines</b>
		Vietnam	Cambodia
		Indonesia	
<b>LATIN AMERICA</b>			
<b>Ecuador</b>	<b>Ecuador</b>	<b>Ecuador</b>	<b>Ecuador</b>
		Mexico, <b>Bolivia</b> , Peru	<b>Bolivia</b> Haiti

Phase I and II









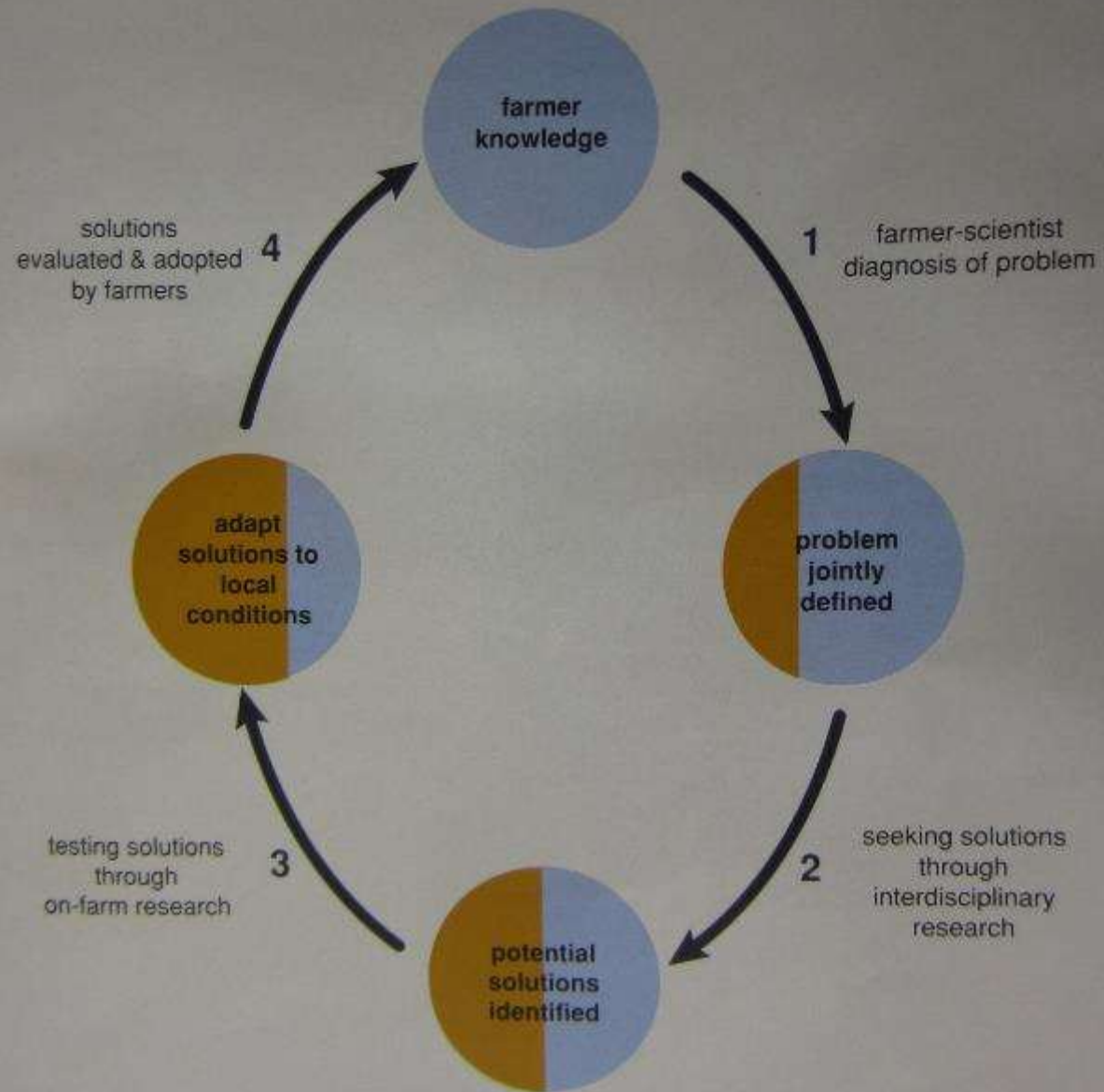


# The Cornerstones



1992-1997

# FARMER-BACK-TO-FARMER MODEL





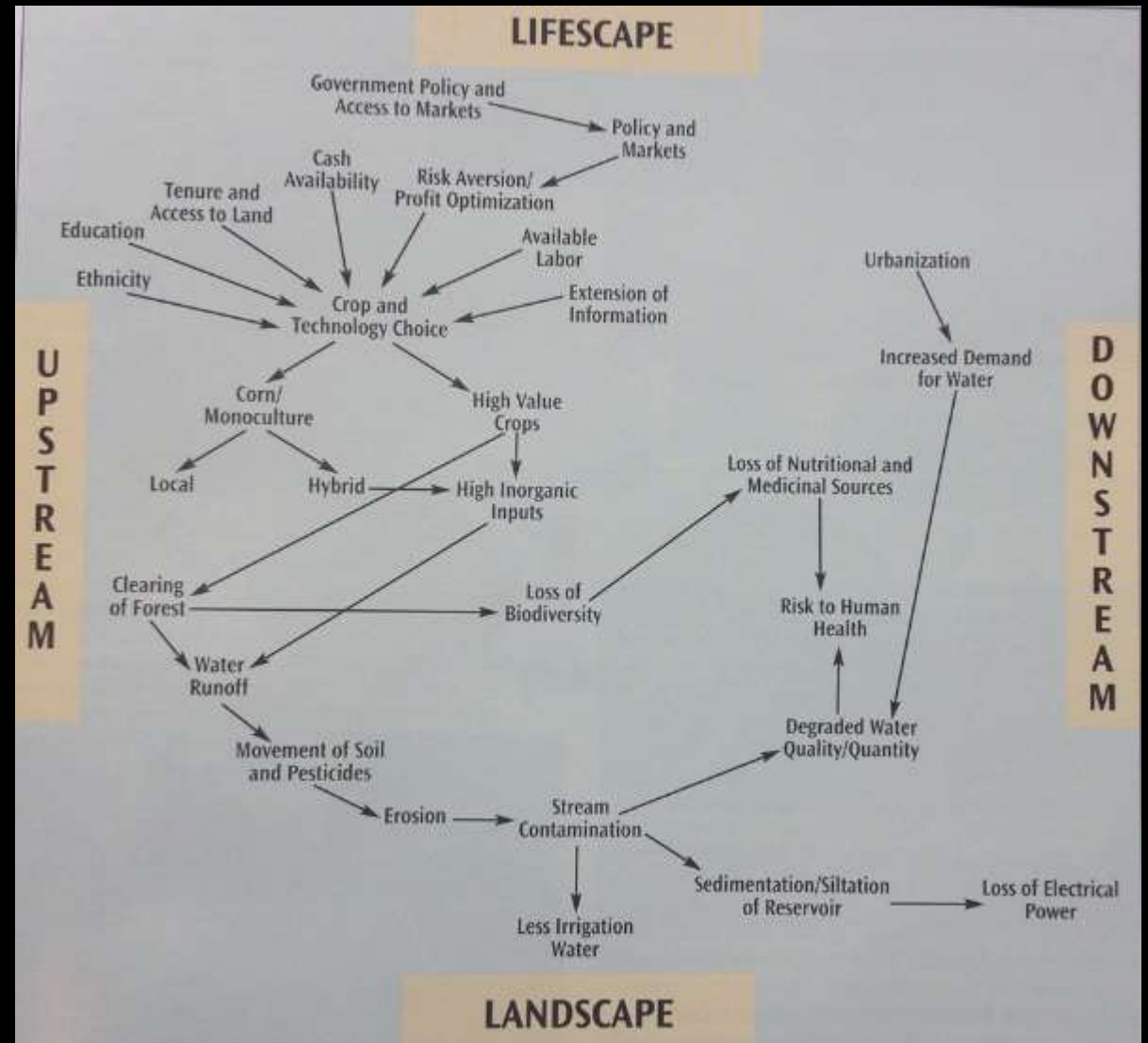
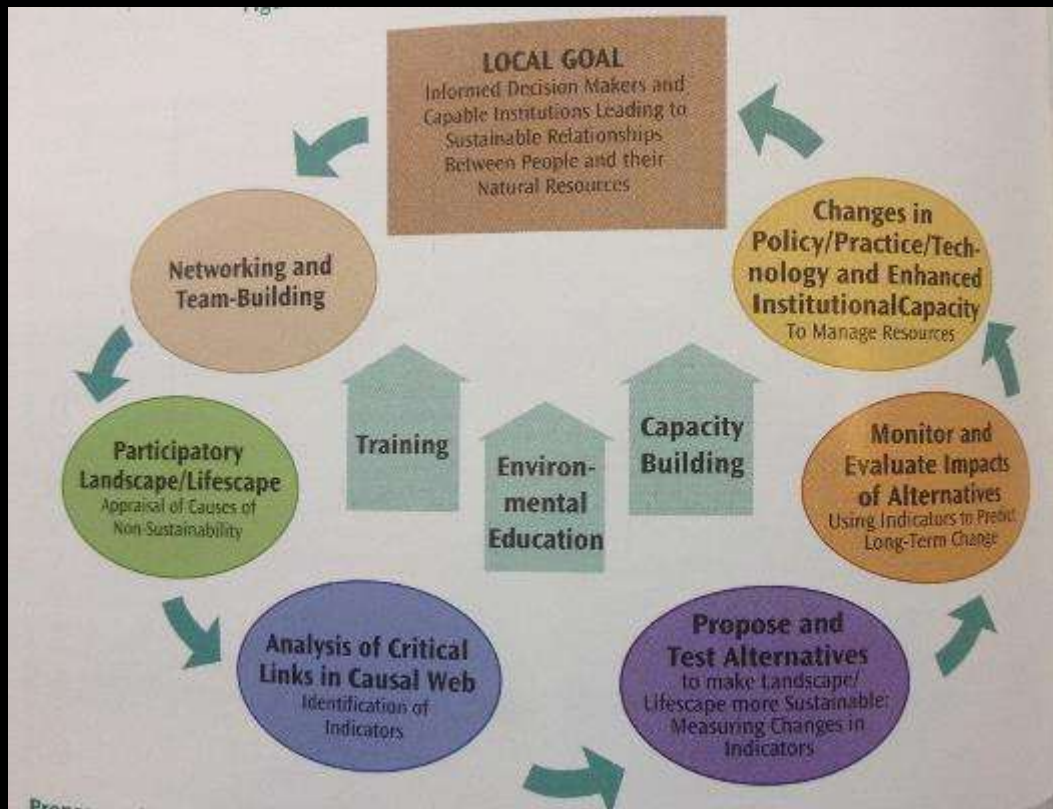
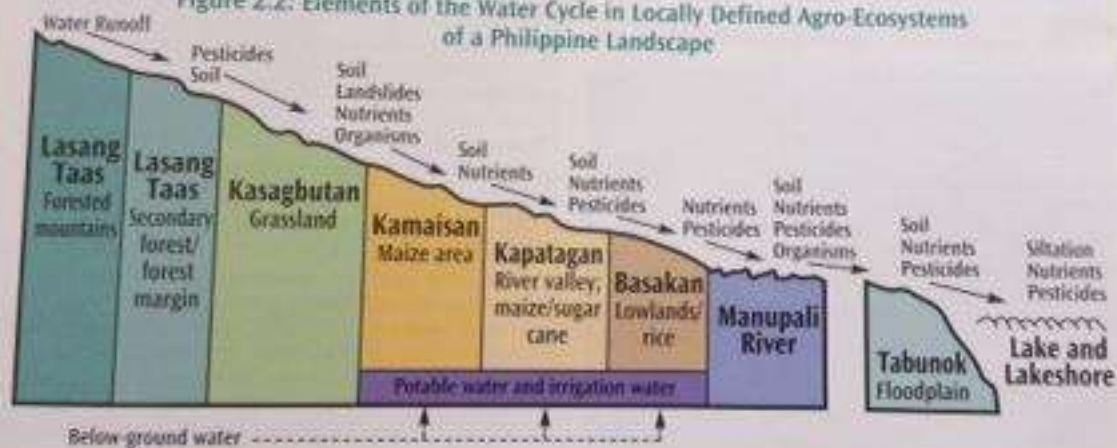


Figure 2.2: Elements of the Water Cycle in Locally Defined Agro-Ecosystems of a Philippine Landscape









1966



1990



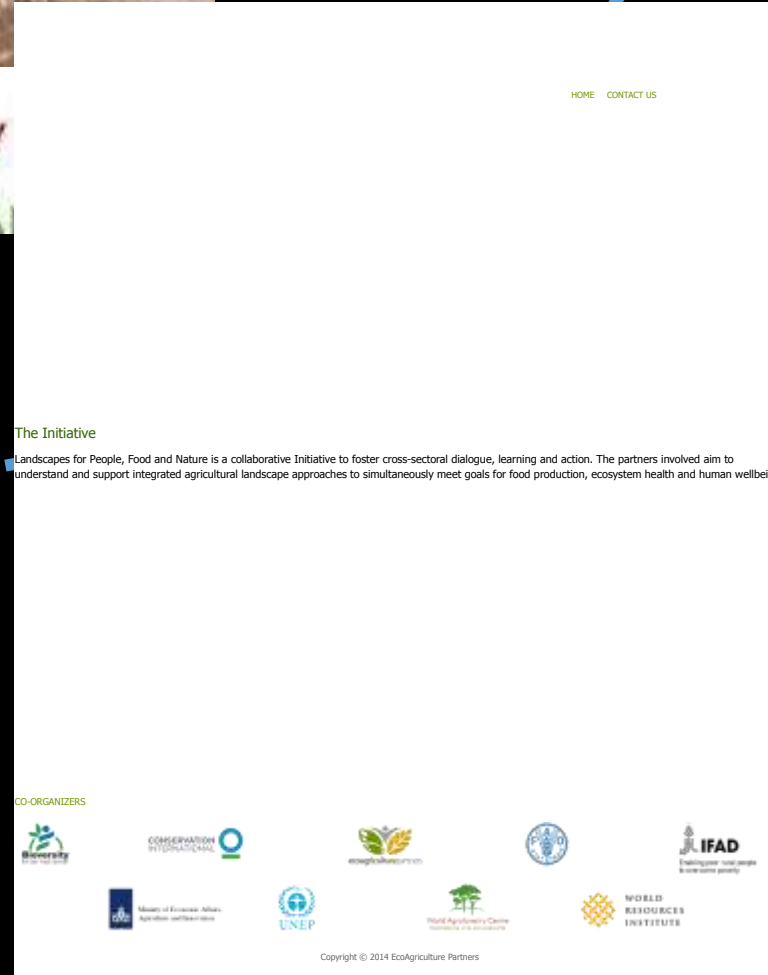
2014







World Agroforestry  
TRANSFORMING LIVES AND LANDSCAPES

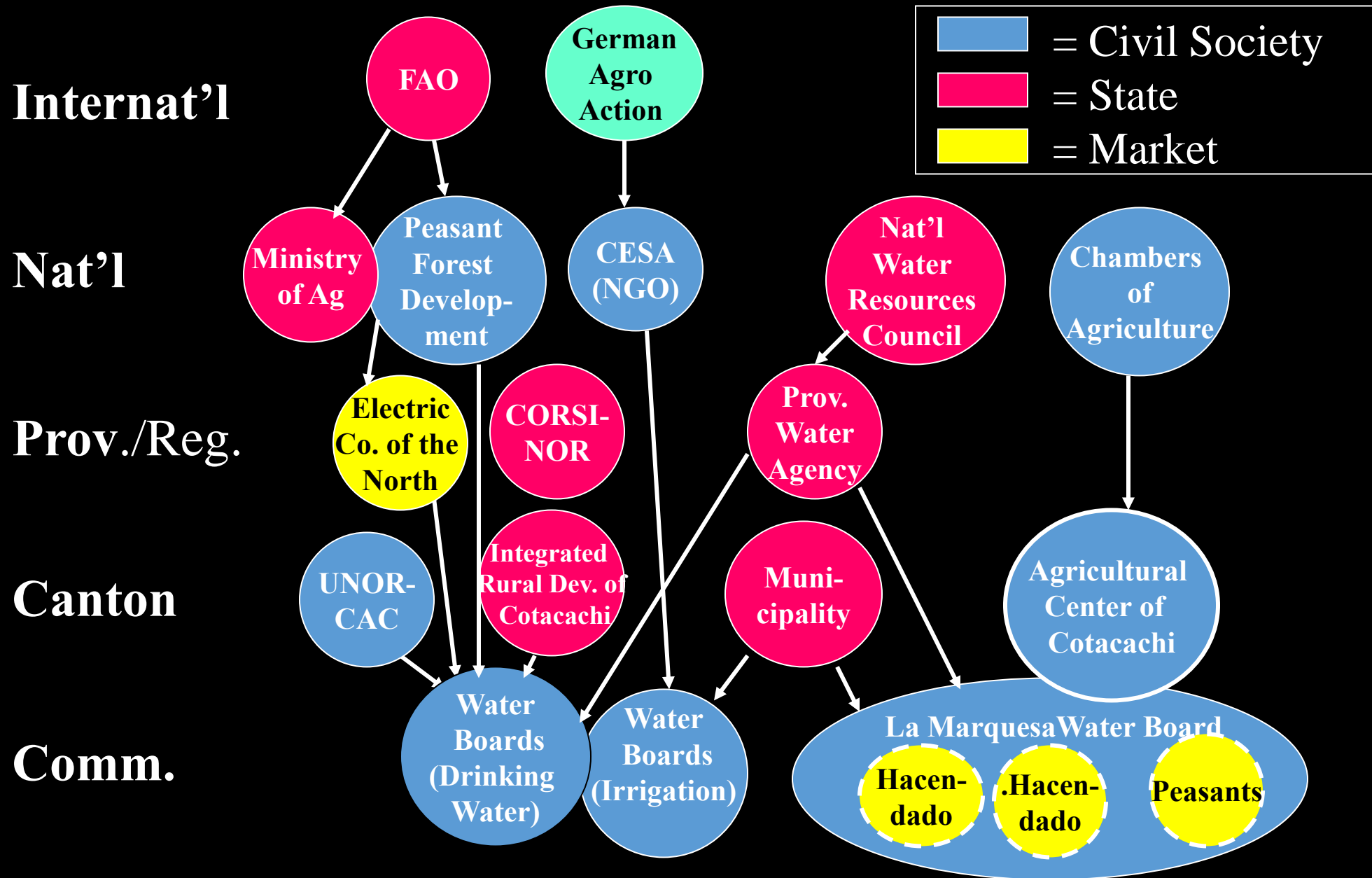


Landscapes for a new climate and development agenda

HOME NEWS ARTICLES DIALOGUE

“We were Landscapes when Landscapes weren’t

# Figure 3. Advocacy Coalitions-Water





























Ritual of Understanding: Tala-andig Indigenous People, Lantapan, Bukidnon, Philippines













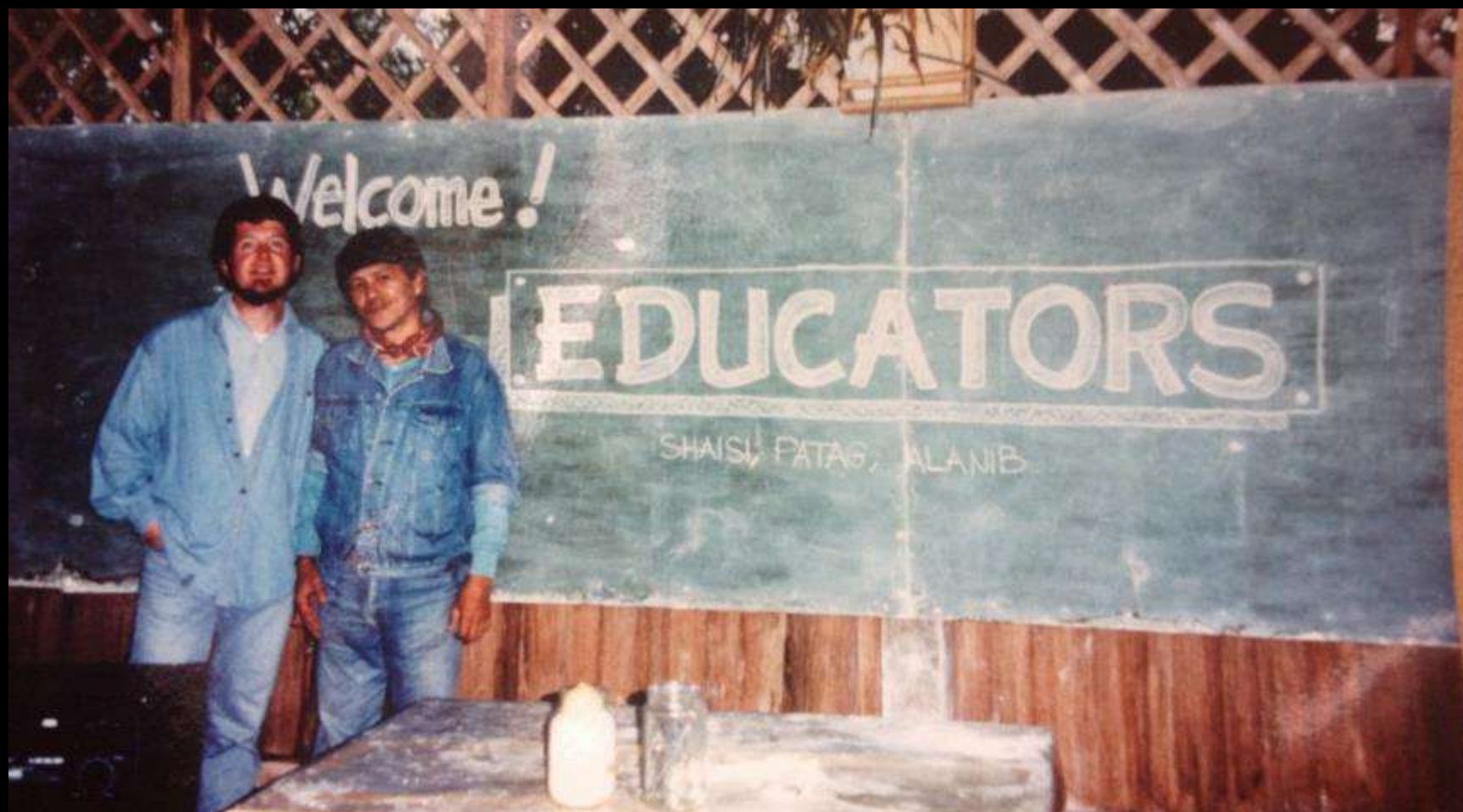
*Field researchers and local participants analyze local resources*























# “Lessons without borders”

















**BOSQUET DE L'AMITIE**



**DONSE**

**CRSP**





International participants at multi-institutional workshop in Cape Verde



# Carbon from Communities













**LOOKING BACK ON THE LANDSCAPE:  
IMPACTS AND LESSONS FROM THE SANREM CRSP**



# DEVELOPMENT WITH IDENTITY

COMMUNITY, CULTURE AND  
SUSTAINABILITY IN THE ANDES



Edited by  
Robert E. Rhoades



KAWSAIKAPAK RĪKUCHĪYKUIA  
RECETAS PARA LA VIDA  
RECIPES FOR LIFE



AITĪKUIAMANTA MĪIPATAPĪ KUIAKUYKUIA, YACHARĪSHKAKUIAPASH  
CONSEJOS, COSTUMBRES Y COCINA DE LOS FOGONES ANDĪNOS  
COUNSEL, CUSTOMS, AND CUISINE FROM THE ANDEAN HEARTHS

VĪRGĪNĪA D. IIAZAREA, JUANA CAMACHO Y NATALĪA PARRA  
TANTACHĪKKUIA COMPILADORAS COMPILATORS

Sara Báez, Mary García,  
Fernando Guerrero, Ana María Larrea



# COTACACHI

Capitales comunitarios  
y propuestas de desarrollo local



# MANAGING NATURAL RESOURCES LOCALLY

An Overview of Innovations  
and Ten Initial Steps  
for Local Governments



# *Winning the Water War*

watersheds, water policies and water institutions



edited by  
Agnes C. Rola, Herminia A. Francisco  
and Jennifer P.T. Liguton



# Land Use Change in Tropical Watersheds

EVIDENCE, CAUSES AND REMEDIES



Edited by  
I. Coxhead and G.E. Shively



# Conflict, Social Capital and Managing Natural Resources

*A West African  
Case Study*

Edited by Keith M. Moore



CABI Publishing





# Ecoagriculture:

## A Review and Assessment of its Scientific Foundations

Louise E. Buck  
Thomas A. Gavin  
David R. Lee  
Norman T. Uphoff

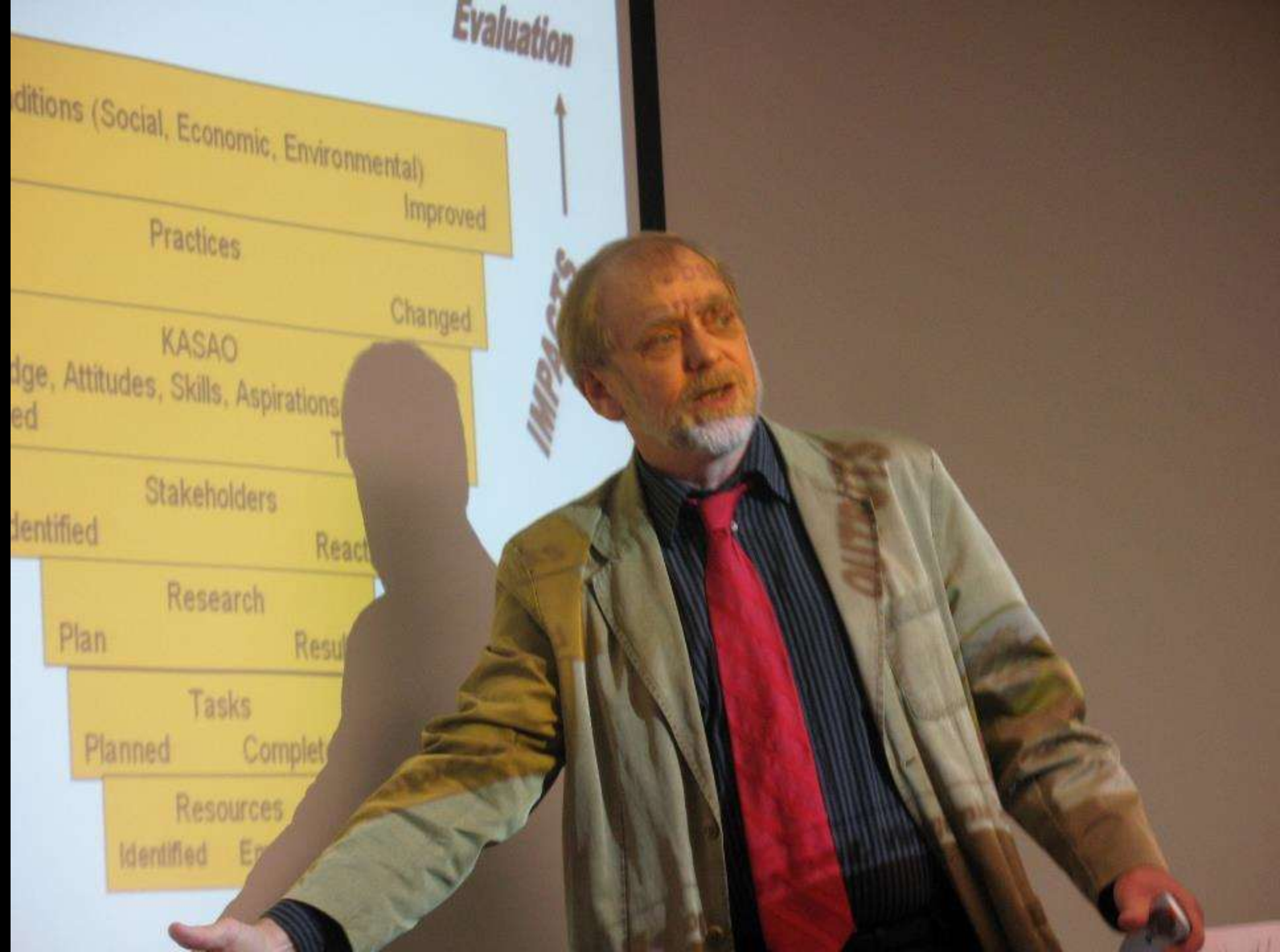
*with*

Diji Chandrasekharan Behr  
Laurie E. Drinkwater  
W. Dean Hively  
Fred R. Werner

Phase III and IV



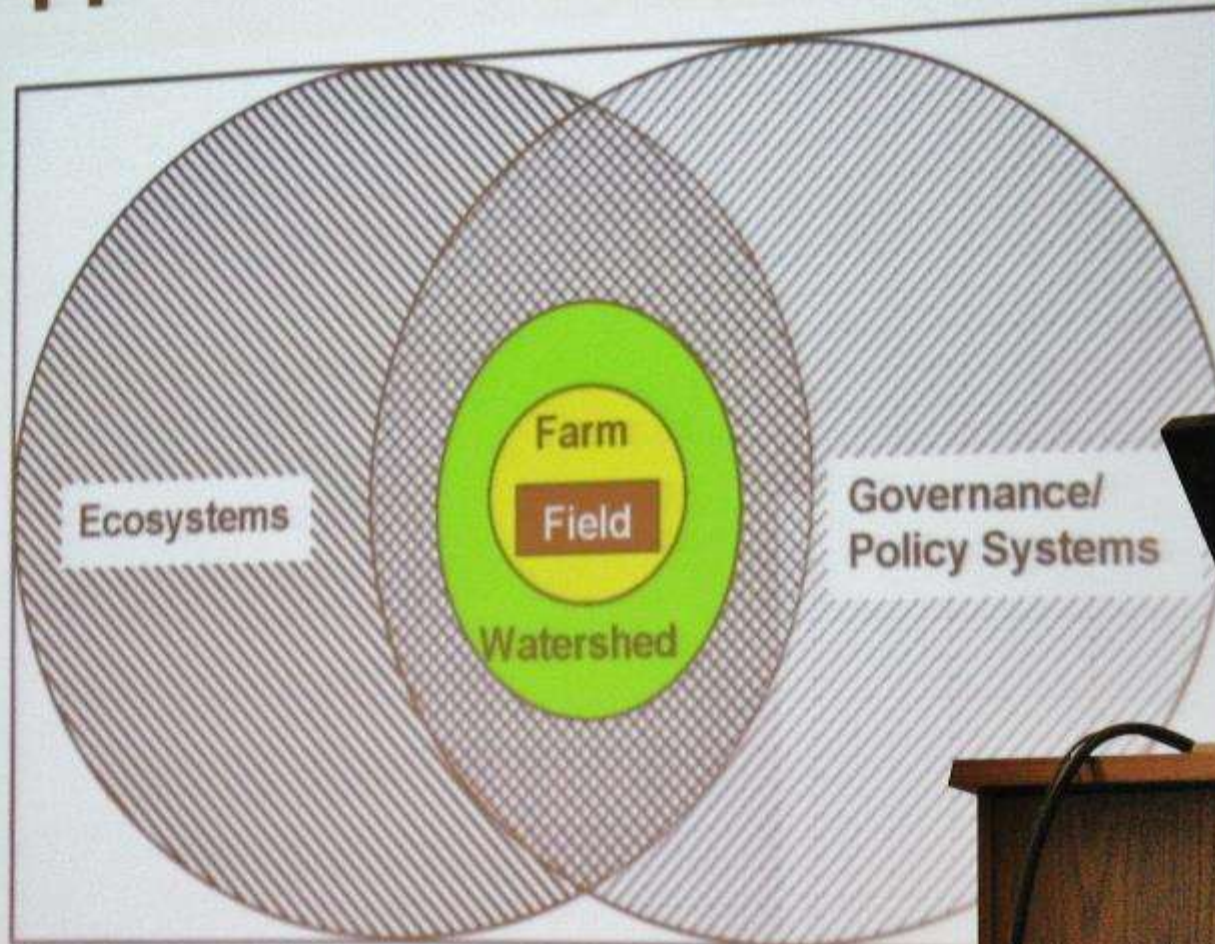


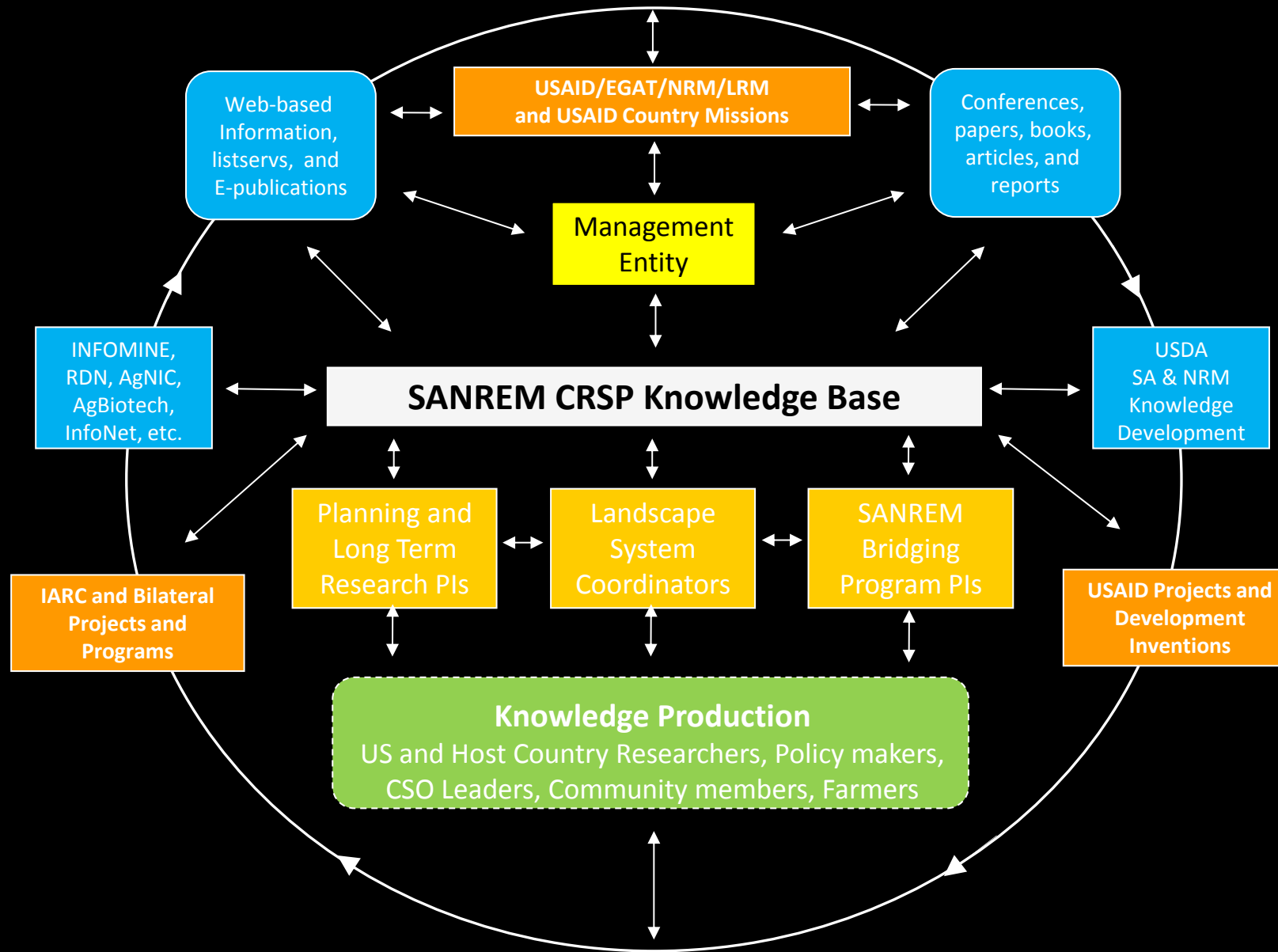




Feb. 26-28, 2008

# Landscape Systems Approach





**SANREM CRSP Knowledge Management System**







## Sustainable Production of Bio-based Energy and Novel Plant Growing Substrate

### The Model Bio-based Energy and Product Development System

This system is designed to produce bio-based energy and products from agricultural waste and crop residues. The system is designed to be sustainable and to provide a source of renewable energy and products.

### What is the system?

The system is a model for the production of bio-based energy and products from agricultural waste and crop residues.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.

The system is designed to be sustainable and to provide a source of renewable energy and products.



































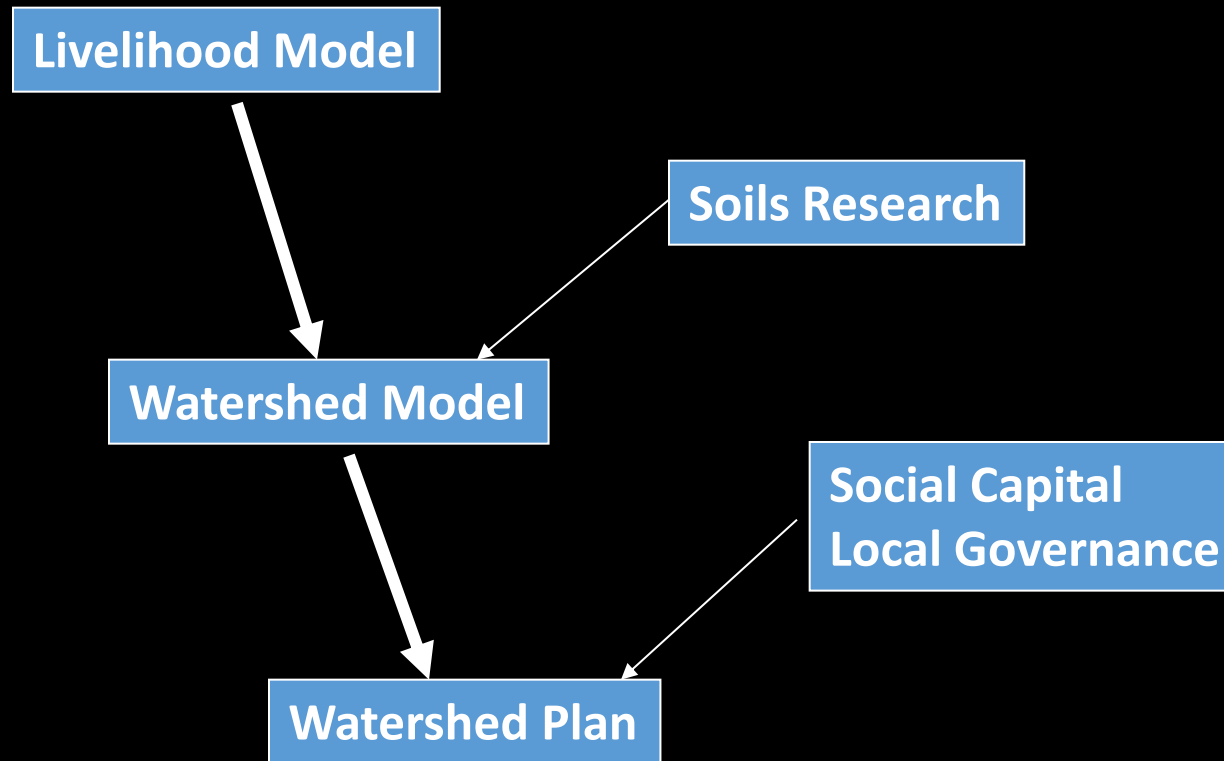








# Transdisciplinary Framework (LTRA-3)



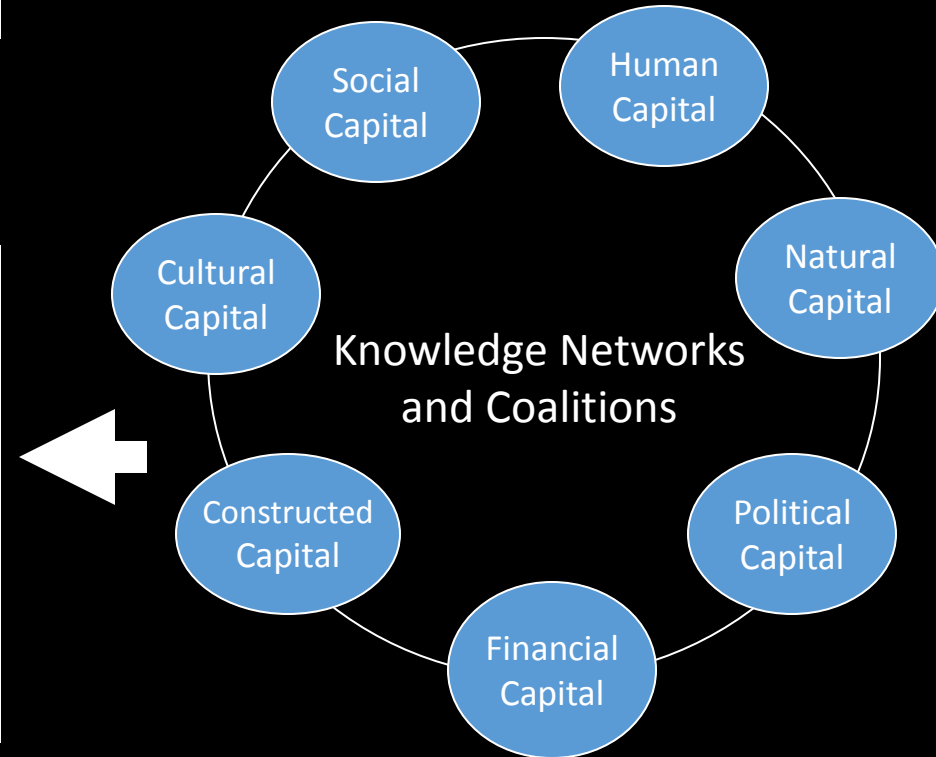
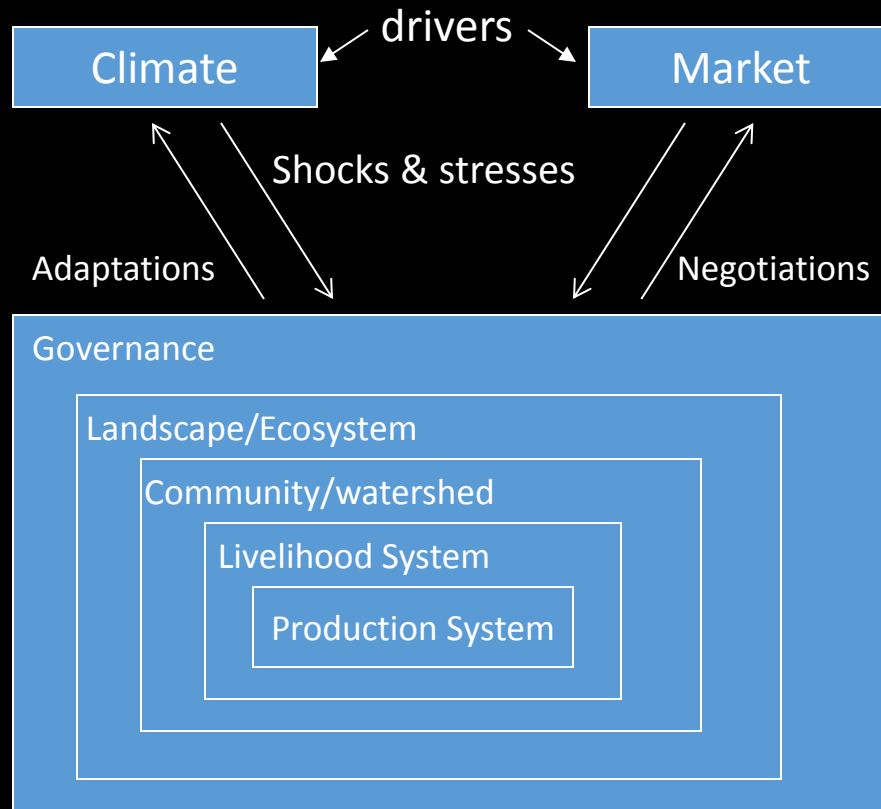
Hypotheses of relationships within and between models:

# Transdisciplinary Framework (LTRA-4)

(with suggested direction for research hypotheses)

Structure

Agency



## Hypotheses on the current state and its drivers

Pests	Local Climate
Soils	Local Markets
Biodiversity	Livelihoods

## Transformative Hypotheses

Bridging knowledge systems for change  
Building coalitions to implement change  
Risk and dread and ability to act

Secondary research is used to fill in the gaps in primary research as needed for each site.









Sustainable Agriculture and Natural Resource Management  
Collaborative Research Support Program (SANREM-CRSP)

Project Title: Effect of Low-Cost Drip Irrigation System on crop yield under  
Agroforest & Vegetable Production Systems in the Philippines

Objective: To determine the effect of drip irrigation on the quantity and quality of  
Yield of selected Vegetable Crops under Agroforestry & Vegetable  
production systems in the Philippines

Experimental Design: 4 Replication for "with" and "without" irrigation  
Crops Planted: TOMATO (*Lycopersicon esculentum*) CABBAGE (*Brassica oleracea*)  
SWEET PEPPER (*Capsicum frutescens*) CHINESE CABBAGE (*Brassica rapa*)

Location: Bulogan, Gongco, Lantapan, Bukidnon, Philippines

Cooperator: HENRY S. BINAHON

Project Leaders: Dr. Victor B. ELLA University of the Philippines Los Baños  
Dr. MANUEL R. REYES North Carolina A & T State University

Collaborating Agencies: Central Mindanao University  
ICRAF - Philippines  
Central Queensland University  
Asian Vegetable Research & Development Center

USAID  
FROM THE AMERICAN PEOPLE

TMPEGS Southeast Asia







# SANREM CRSP 2008 Annual Meeting

May 26-28, 2008, San Remo, Italy







**The Sciences and Art of Adaptive Management**  
Innovating for Sustainable Agriculture  
and Natural Resource Management

Keith M. Moore, Editor

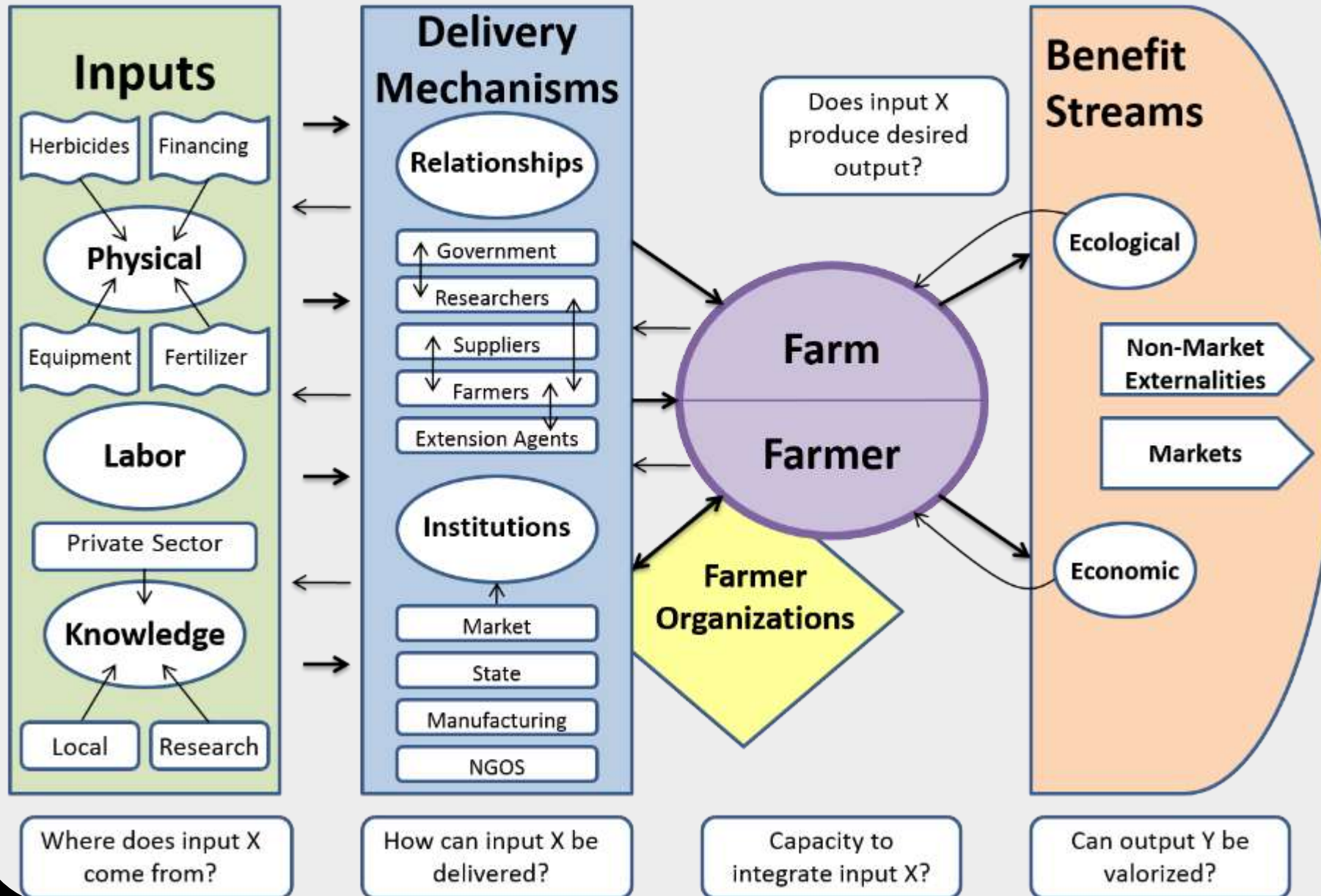








# Model of Conservation Agriculture Production System







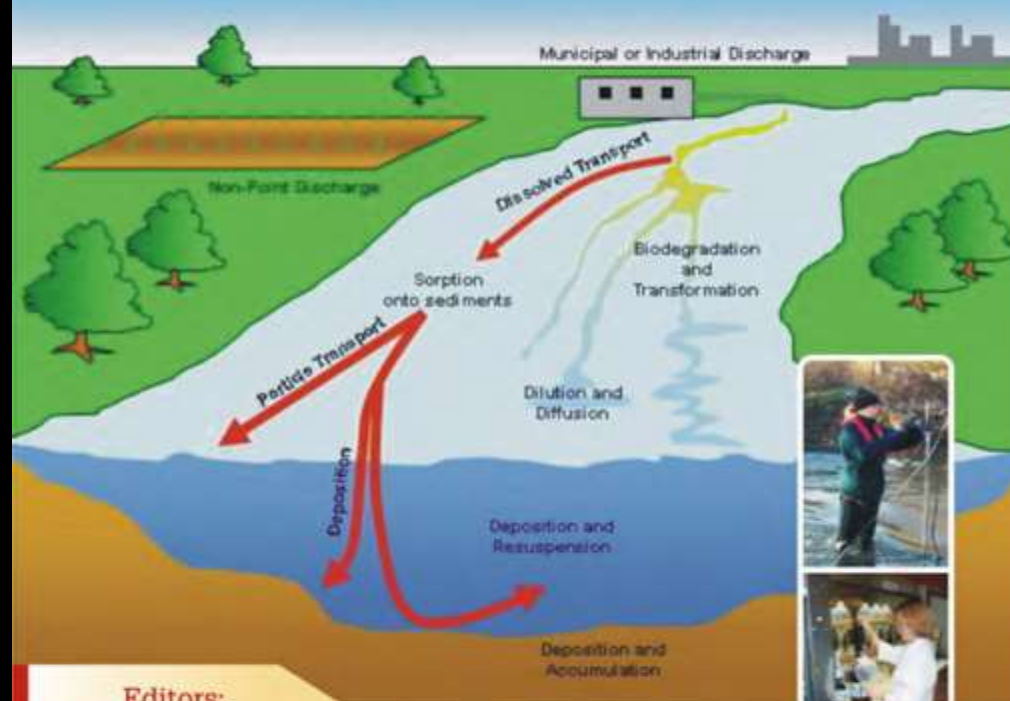








# Soil and Water Assessment Tool (SWAT) Global Applications



## Editors:

Jeff Arnold	Fang Hua Hao	
Raghavan Srinivasan	Ann van Griensven	Victor Ella
Susan Neitsch	Ashvin Gosain	Luis Leon
Chris George	Patrick Debels	Attachai Jintrawet
Karim Abbaspour	Nam Won Kim	Manuel Reyes
Philip Gassman	Hiroaki Somura	Samran Sombatpanit

























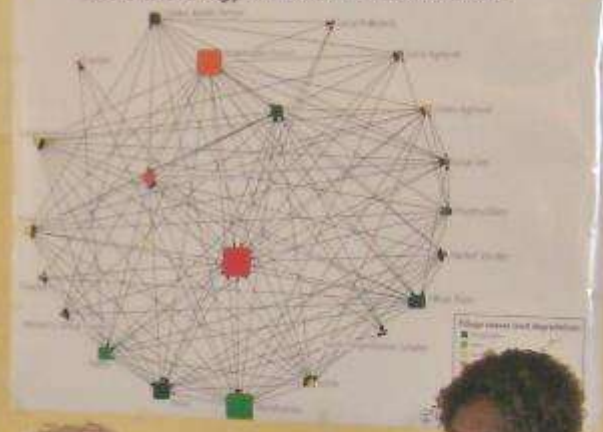








Kitale Technology Network Information Flows











# Experiencias en el manejo integrado de recursos naturales en la subcuenca del río Chimbo, Ecuador

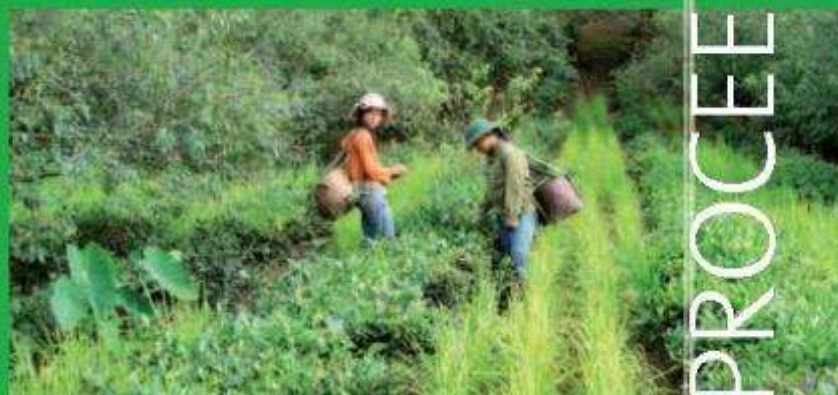
EDITORES:

Víctor Hugo Barrera  
Jeffrey Alwang  
Elena Cruz



# The 3<sup>rd</sup> International Conference on Conservation Agriculture in Southeast Asia

Hanoi · 10<sup>th</sup> > 15<sup>th</sup> December 2012



Conservation Agriculture  
and Sustainable Upland Livelihoods  
Innovations for, with and by Farmers  
to Adapt to Local and Global Changes

PROCEEDINGS





**USAID**  
FROM THE AMERICAN PEOPLE



# Conservation Agriculture in Southeast Asia and Beyond



**Editors:** Michael J. Mulvaney, Manuel R. Reyes, Catherine Chan-Halbrecht,  
Stéphane Boulakia, Kaesorn Jumpa, Chinapatana Sukvibool  
and Samran Sombatpanit







*Student Stars*  
of SANREM





Polly Ericksen

Program Leader, Livestock Systems and Environment, ILRI/Nairobi





Todd Nissen

US Director, Services Trade Negotiations, Office of the US Trade Representative



Delia Catacutan

Senior Social Scientist and Country Representative, ICRAF, Vietnam





Esther Mwangi

Senior Scientist for resource governance, CIFOR, Indonesia



Todd Crane

Climate Adaptation Scientists, International Livestock Research Institute (ILRI)





Victor Barrera  
INIAP/Ecuador



Laura German

Assistant Professor, cultural anthropology, University of Georgia





Cecilia Turin

Climate Change Adaptation and gender, International Potato Center (CIP)



Durga Poudel

Professor and Coordinator of Environmental Science Program,  
University of Louisiana at Lafayette





Lydiah Gatere

Agriculture and Food Security Center, The Earth Institute, Columbia University



Nadezda Amaya

Gender Research Specialist, International Potato Center (CIP)





Margaret Kroma

Assistant Director General for Partnerships, ICRAF



Gladys Buenavista  
International Consultant