Agroforestry and Sustainable Vegetable Production in Southeast Asian Watersheds

Presentation at USAID-EGAT
Ronald Reagan Building
August 31, 2009
Strong Partnership
Strong Partnership

North Carolina Agricultural and Technical State University
Outline

1. Problem Statement
2. Objectives
3. Promising Results
4. Questions and Discussions
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Problem Statement

Communities in many forest and vegetable producing watersheds in Southeast Asia are suffering from poverty, and forest, soil and water resources degradation.

Lantapan, Philippines
May 2007
Outline

1. Problem Statement

2. Objectives
   - Physical and Biological Sciences (first one)
   - Social Sciences (five others)
TMPEGS Technology ‘complementarity’
TMPEGS

Marketing

‘value chain’
TMPEGS

Policy

‘incentives’
TMPEGS

Environmental & economic-social impact

‘it works’
TMPEGS

Gender

‘equity’
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Vietnam
Cacao can be grown under Cashew
Vietnam

- Binh Phouc Province
- Watershed drains in Ho Chi Minh City (Saigon)
Vietnam Top Cashew Exporter

Nation holds spot as top cashew exporter

(31-01-2008)

HA NOI — Viet Nam last year led the world in cashew export sales for the second time, according to the Viet Nam Cashew Association (Vinacas).

In 2007, Vinacas reported the cashew industry exported 153,000 tonnes of nuts, up 20.6 per cent over the previous year.

Vietnamese cashews for export were last year priced 7 per cent higher than the previous year due to the high quality of the product, Vinacas also reported, helping the industry earn US$650 million.

120,000 tonnes per year
Cashew Fruit
Harvesting Cashew
Cracked manually

Crack and get the seeds
Separate the Whole from Cracked
Cooked and then Canned

[Image of Planters Cashew Nuts]

[Image of Planters Cashew Lovers Mix]
Promising Result
Vietnam
TMPEGS has proof that Cacao grows well under Cashew

Dr. Ronald Cantrell
Director General International Rice Research Institute
(1999 to 2005) progress reviewer assigned to this project
Proof that Cacao grows well under Cashew
To see is to believe
To see is to believe
To see is to believe
To see is to believe
To see is to believe
To see is to believe
To see is to believe
To see is to believe
no cacao
To see is to believe
Promising Result
Vietnam
Cacao Seedlings are Being Killed by Termites
Biocontrol of Termite in Cacao Trees

Termite damage on cacao tree

Vetiver grass
TMPEGS has Proof that Vetiver Grass can control termites in young cacao seedlings
Soil Quality study

Residue
Cacao and beans
Cacao beans are dried
Huge Cashew small farm enterprise in Vietnam

There is a high potential for expanding cacao-cashew system in Binh Phuoc province (172,000 ha existing cashew area) and to other cashew planting regions in Vietnam.
Vietnam Policy

The expansion of cacao-cashew system is expected to contribute significantly to the achievement of Vietnam policy to expand cacao area from 10,000 ha in 2008 to 80,000 ha by 2020.
Economics - Profit

The assessment of cacao-cashew system indicates that by integrating cacao into existing cashew plantation, farmers’ income as measured by increased by 136%.
Excellent SANREM story

The Story of...
SUSTAINABLE COCOA

By...
Dr. Howard-Yana Shapiro
Director, Plant Science
Mars Inc.
(Maker of M&M’s and Snickers)

Reducing poverty, improving lives, protecting the environment one chocolate bar at a time

Monday, March 20
1–2 p.m., Webb Hall Auditorium

Sponsored by:
N.C. A&T State University
SANREM-CRSP project
NRED-SAES

Office of International Programs
Gamma Sigma Delta

North Carolina Agricultural
and Technical State University
Promising Results for Indonesia
Indonesia
Indonesia

- Nanggung
- Watershed drains in Jakarta
Tree system here is mixed

Inside the forest
From SANREM research Vegetable recommendation book and brochures
Encountered a bump!!

Fertilizer is subsidized for Rice but not for vegetables

• Solution: farmer cooperative – on-going

Proposal in SANREM IV:
Development of organic fertilizer technology
To see is to believe
To see is to believe
To see is to believe
What do you notice?

To see is to believe

Indonesian farmers May 4, 2006
To see is to believe
To see is to believe
To see is to believe
To see is to believe
To see is to believe
To see is to believe
Men are listening 😊
How did this come about?

Katuk? (means crazy in Filipino)
Katuk under guava

To see is to believe
To see is to believe

Get and share
To see is to believe

Hi five!!
To see is to believe
Philippines
Philippines

• Lantapan, Bukidnon, Island of Mindanao

• Mindanao is a major conflict region in the Philippines
Can vegetables be more productive under tree-based systems?
Philippines

To see is to believe
Philippines

To see is to believe
Indigenous Vegetables

To see is to believe
Medicinal Vegetable Trees

To see is to believe
Can vegetables be more productive under tree-based systems?

Yes for unique vegetable tree combinations
Municipality had passed an Incentive based policy on conservation agriculture
Clamoring for organic fertilizer technology
Binahon Agroforestry Farm

Refer to handout
Questions