Agroforestry and Sustainable Vegetable Production in Southeast Asian Watersheds

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North Carolina Agricultural and Technical State University

Virginia Tech
Invent the Future
Strong Partnership

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Pioneered no-till vegetable production in the USA
VIP Universities

V - Vietnam

I - Indonesia

P - Philippines
Vietnam team June 2, 2005

Dr. Dang Ha and his team

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VIP Teams

V - Vietnam

I - Indonesia

P - Philippines
VIP Farmers

V - Vietnam

I - Indonesia

P - Philippines
Vietnam

Vietnamese farmers May 11, 2006
Indonesian farmers May 4, 2006
Outline

1. Problem Statement
2. Objectives
3. Location
4. Methodology
5. Questions and Discussions
Problem Statement

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

Nghia Trung, Budang District, Binh Phuoc Province Vietnam
May 11, 2006
Problem Statement

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

Nanggung, Indonesia
May 3, 2006
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
June 9, 2005
Response

TMPEGS

“TeaMPEGS”
PEG

A pin forming a projection that may be used as a support or boundary marker

TMPEGS Philosophy:
To be a support to small scale farmers both women and men
Outline

1. Problem Statement

2. Objectives

3. Location

4. Methodology

5. Help & Questions!!!
TMPEGS Technology
TMPEGS

Marketing
Policy
TMPEGS

Environmental & economic-social impact
Gender
TMPEGS

Scaling-up
Repeat Objectives

TMPEGS

“TeaMPEGS”
TMPEGS
Marketing

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Scaling-up
Technology:
Develop economically viable and ecologically-sound vegetable-agroforestry (VAF) systems
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Develop economically viable and ecologically-sound vegetable-agroforestry (VAF) systems
Quantification of optimum tree spacing for vegetable production

Competition:
- Light
- Nutrient
- Water

$N_2$ fixation
$CO_2$ fixation

reduction of negative effects through silvicultural management

Yield of control tree-crop nutrient transfer through pruning and roots and nodules turnover.

leaching of nutrients to lower depths 0 - 100 cm depth

uptake from safety net zone

competition: light, water nutrient
Technology:
Develop economically viable and ecologically-sound vegetable-agroforestry (VAF) systems

Nanggung, Indonesia
May 3, 2006
Technology:

Develop economically viable and ecologically-sound vegetable-agroforestry (VAF) systems
TMPEGS

Marketing:

Develop a market value chain at the local, regional, and national levels that builds upon existing marketing strategies.
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Nanggung, Indonesia, May 4, 2006
Policy:
Identify policy options and institutional frameworks that promote sustainability of vegetable-agroforestry production and reward environmental services.
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Environmental and Socio-economic:
Assess the short and long-term environmental and socio-economic impacts of integrated vegetable-agroforestry systems
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TMPEGS

Gender:

Provide mechanisms to ensure women’s involvement in decision-making and sustainable production and marketing practices to improve their socioeconomic wellbeing within the VAF system.
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Something is wrong!!!!!!
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TMPEGS

Scaling-up:

Build host country capacity to manage and disseminate integrated vegetable-agroforestry system
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AVRDC’s Indigenous Vegetable Germplasm
Outline

1. Concise Problem Statement
2. Objectives
3. Location
4. Methodology
5. Questions and Discussions
Vietnam

Binh Phouc Province
Vietnam

VAF:
Cacao and Vegetables
Indonesia

- Nanggung Sub-District
- Near Jakarta
Indonesia

- Nanggung Sub-District
- Near Jakarta

VAF: Home-garden
Indonesia Site

Chose Nanggung to be the research site

- Complementary with a previously funded USAID project
- Kebun – ‘home garden setting’

Pasir Sarongge

If additional funds are provided, scale-up site

Dr. Susila – farmer – Sweet potato

Farmer proudly showing his new home
Philippines

- Lantapan, Bukidnon
- Island of Mindanao

VAF: Alley-Cropping
Chose Lantapan, Bukidnon, Mindanao as project site. This is complementary with a USAID funded ‘Growth with Equity in Mindanao’ project. If additional funds are available, scale up site, adjoining vegetable growing communities in Mt. Kitanglad Range Natural Park, Bukidnon Province.
Vegetable Agroforestry (VAF) systems is inevitably the most appropriate technology for the uplands to enhance the productivity, profitability and protective functions of vegetable production system in a sustainable manner, while reducing production risks and environmental hazards of vegetable production system.
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Methodology

Organizational Structure:

*VIDIN - A city of extreme northwest Bulgaria on the Danube River near the Yugoslav border. Founded in the first century A.D. as a Roman fortress, it was under Turkish rule from 1336 to 1807. Population 64,000.*
Methodology

- Rapid Assessment Survey
- Baseline Survey
Methodology

Menu of Technology some of which are:

- Vegetable-Agroforestry
- Improved and indigenous vegetables
- Drip irrigation
- Integrated Pest Management
- No-till

****VIDIN Technologies****
Menu of Technology some of which are:

- Vegetable Agroforestry
- Improved and indigenous vegetables
- Drip irrigation
- Integrated Pest Management
- No-till

Not all these technologies may apply in a country and we may find out none of them may apply in a country.
Methodology

• Determine our intervention technologies

• Conduct experiments in farmer fields
Outline

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Help, Questions and Discussions

Thanks!!!!!