2ND ANNUAL REGIONAL WORKSHOP ON

Conservation Agriculture and Sustainable Intensification

28-29 September 2021
Virtual Webinar | 14:00-17:00 GMT+7
Session 4: Driving CA/ SI Dissemination Process Adoption

Facilitator:
Ms. Lucie Reynaud, ALiSEA and ASSET Coordinator

3:05 PM – 3:55 PM (50 mins)

Speakers:

Mr. Mushtaq Gill, founder member of South Asian Conservation Agriculture Network (SACAN).

Mr. Pierre VERNET, French international volunteer working with CIRAD

Mr. Marc Eberle, CEO, SmartAgro Innovative Solutions

Dr. Thatheva Saphangthong, Deputy Director of Department of Agricultural Land Management
Regional Experience on Strengthening Agricultural Innovation System for Sustainable Agriculture Intensification

Mr. Mushtaq Gill, founder member of South Asian Conservation Agriculture Network (SACAN).
CASIC 2nd Annual CA & SI and Agroecology Regional Workshop
28-29 September 2021
Virtual Workshop
CAMBODIA

ENGR. MUSHTAQ AHMAD GILL
Executive Director
SOUTH ASIAN CONSERVATION AGRICULTURE NETWORK - SACAN
TOPIC: SSS Extension Model and strategy for diffusion of LASER Land Levelling Technology in Pakistan
Objectives of the Session

- The objective of this session is to present initiatives related to extension model and strategy, original funding mechanisms, capacity building for higher education, and supportive policies in the region and worldwide.

- Development, implementation and diffusion of LASER Land Levelling Technology among the smallholder farmers.

- Enabling environment and initiatives related to Agriculture Service Provider (ASP) technology transfer extension model.
Content
Agriculture Productivity-Challenges

- Indigenous Crop Production practices
  - Broadcasting/Nursery Transplanting
  - Intensive cultivation/ploughing
LASER Technology
A Precursor and gateway for CA adaptation

Zero Tillage

Rice on Beds

Wheat on Beds

Cotton on Beds

SRI Technology
“Triple S” Technology Transfer Model

**International:** CGIAR Centres, ACIAR, USAID, Academia

**National:** Universities, PARC, PINSTECH, PCRWR, OFWM

**Private Sector:** Manufacturers, NGOs

**Technical Experts:** Public Sector Agri. Departments, Machinery Service Hubs, NGOs, Manufacturers, R & D Organizations

**Public + Private Sector, Manufacturers**

ASPs as Entrepreneurs
Agricultural Service Provider (ASP) model for technology transfer and adoption to small farmers
Capacity Building of ASPs for the Diffusion of LASER Technology
Successful Application of “SSS” Extension Model for diffusion of LASER Technology in Punjab

- **Acquisition**
  Technology acquired by importing one LASER land leveling unit from USA

- **Pilot Testing And Indigenization**
  Equipment tested and various components indigenized involving PINSTECH, PARC, local manufacturers

- **Capacity Building and Dissemination**
  Rental service started to promote the technology amongst farming community by operating units through Punjab agriculture department

- **Up-scaling and Diffusion**
  - Private sector manufacturers and “Agriculture Service Providers (ASPs)” through their capacity building, provision of subsidy and backup support
  - Currently, 20,000 LASER land levers are being operated by ASPs across the Punjab with combined capacity to annually level about four million acres
Key Takeaways
What are the key take-aways

• Capacity building of stakeholders including farmers, ASPs and extension workers is key for successful technology transfer.

• ASPs to work as a linchpin between the researchers/extensionists/academia/service supply companies and farmers

• Supportive government policies through establishing linkages and engagement of civil society organizations/NGOs and networks like SACAN in policy implementation, monitoring and evaluation process.

• Using SSS extension model, ASPs to emerge as small-scale agricultural/rural entrepreneurs.
Thank You

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Session 4: Driving CA/SI Dissemination Process Adoption

3:15 PM – 3:25PM (10 mins)

Mr. Pierre VERNET, French international volunteer working with CIRAD

Mr. Marc Eberle, CEO, SmartAgro Innovative Solutions

Cambodia Experience on Pilot Project to Introduce Farmers to the Carbon Market
DEİ MEAS - ដីមាស : Introducing farmers to Carbon market

Marc EBERLE (SmartAgro)
Pierre VERNET (CIRAD)
Rajiv Pradhan (SwissContact)
Florent TIVET (CIRAD)
Objectives of the Session

- Presenting the first Cambodian payment system rewarding farmers for carbon sequestration and ecosystem services production
- Detailing the pilot structure and outcomes
Topics to be covered

• Global challenges and opportunities
• Cambodian context
• Conversation agriculture: Impacts and co-benefits
• Deï Meas - ដីមាស
• The voluntary carbon market
• Pilot structure
• Project developer and partners
• Pilot location
2 Content
Global Challenges
Requires holistic approach: Agroecology

Climate Change
Agriculture, Forestry and Other Land Use (AFOLU) account for:
• 24% of GHG emissions globally,
• 44% in Asia

Food Security
Need to feed 10 billion people by 2050, doubling food production on the same surface

Amplified by fast growing population

Ecosystem Services
• Biodiversity loss
• Land degradation
• Erosion
• Deforestation for more farm land

Cambodian context
The Problem: Agricultural land degradation

- 79% of Cambodians live in rural area.
- 42% of agricultural land is medium to severely degraded (C depleted)

Annual cost of land degradation is estimated at USD 677 million or 3% of GDP in 2010. (UNCCD, 2018)

https://knowledge.unccd.int/sites/default/files/ldn_targets/2018-12/Cambodia.pdf
The Solution: Conservation agriculture

Impacts and co-benefits

1. Minimum or no soil tillage

2. Permanent soil cover

3. Species diversity and spatial arrangement

Co-benefits:

- Climate Change mitigation & adaptation
- Soil improvement (reduced erosion, increased fertility and water retention)
- Increased profits, enhanced resilience, reduced emissions
- Increased biodiversity and natural resource conservation

Carbon emissions reduction

Carbon sequestration

Enhance biodiversity
PILOT: DEÏ MEAS (GOLDEN SOIL)
A TRANSITIONING SYSTEM FOR CARBON FARMERS

QUANTIFYING CARBON SEQUESTRATION WITH AN EFFECTIVE AND INEXPENSIVE MRV + R

INCENTIVIZING SMALLHOLDERS TO ADOPT REGENERATIVE PRACTICES WITH A
The voluntary carbon market

Timeline

- Carbon certification process takes 3 to 5 years,
- Farmers are not willing to wait and risk transition to new practices without incentives

1. Enrolling in carbon registries
2. Mobilizing farmers to join,
3. Collecting data about baseline carbon levels,
4. Verifying emissions reductions, MRV
5. Selling carbon
The voluntary carbon market

Incentivizing the transition

...what if farmers entered the carbon market and were paid in the first year of transition?

Carbon markets aim to reduce GHG emissions cost-effectively by enabling a trading scheme.
DEÎ MEAS PILOTATA G LANC E

6,000 HA OF REGENERATED FARMLAND

3 YEARS

2,000 FARMER HOUSEHOLDS

$150,000 FARMERS’ REWARD PER YEAR

3 PRACTICES

COVER CROPS, NO-TILL, DIVERSIFIED ROTATIONS
Credit Classes

- **NO-TILLAGE (NT) + CROP DIVERSIFICATION**
  - $x$/? (per year no tilled, no of species per crop sequence)

- **NT + CROP DIVERSIFICATION + SINGLE COVER CROPS**
  - $x$/? (Linked to biomass produced)

- **NT + CROP DIVERSIFICATION + Mixed COVER CROPS**
  - $x$/? (Linked to no of species per season)

- **ALTERNATE WETTING AND DRYING (AWD)**
  - $x$/? (Linked to draining field for x days)
INCREASED FARMERS LIVELIHOOD AND BETTER QUALITY OF FOOD PRODUCTS THROUGH IMPROVED SOIL & ECOSYSTEM HEALTH & ENHANCED RESILIENCE

FARMER CENTRIC RESEARCH DRIVEN BY PhD STUDIES

GETTING TO SCALE BY LINKING FARMERS TO NEW ECOSYSTEM PAYMENT SCHEMES

BUILDING THE MARKET CREATING DEMAND & SUPPLY FOR ALL STAKEHOLDERS

EST. 10,000 + METRIC TONNES OF CO2-EQ STORED IN SOILS PER YEAR
Farmers (supply carbon credits)

-~2000 farmers

- Demand creation
- Technical assistance
- Reward farmers

Service provider
Private sector SmartAgro/ Loran…

Transition component

Farmers Aggregator
Framers Aggregator
Framers Aggregator
WAT4CAM
MetKaseKor
Others…

Project developer

- SmartAgro/ SwissContact/ CIRAD

Companies (buy carbon credit certificates)

- Early buyers!

Aggregator

- Farmer’s reward for transition → After Year 1

Donors/ Investors (Financing the gap from y0 to y3)

Grants

Credit component

- Third-party Verifier tba
- Online Platform SC/Wat4Cam
- Satellite Remote-sensing C-Quest
- Soil tests CASC

MRV

- Proof of Impact on ES
- Proof of C sequestration

REGISTRY

- Methodologies
- Regen Network

Certification

- PDD, reports, audits...
- PDD, reports, audits...

Verification

Online Platform

Data

Service provider CASC / PDAFF / SmartAgro…

Donors/ Investors (Financing the gap from y0 to y3)

Grants
Project developer / Aggregator

National and international research centers → Research for development and Technical assistance

International NGO → Business model, Supporting systems, project management

Private Company → Promoting cover crop and technical advice
Partners – Dei Meas Cambodia Pilot 1

Field team/ Government

Farmer Aggregator

WAT4CAM

Cooperatives

Donor/NGO Processors

Registry

Third-party Verifier

tba

Remote-sensing and MRV

C-QUEST
3

Key Takeaways
What are the key take-aways

- Land degradation and poor soil management has direct consequences on food security, climate change and livelihoods.
- Re-designed agriculture can be a solution.
- Transitioning to sustainable soil management increases profits, enhances resilience and reduces GHG emissions.
- Farmers benefit additional revenue stream for carbon sequestration and ecosystem services production.
- Deï Meas bridges financing gap and pays farmers already in the first year of transition to incentivize adoption of regenerative practices.
Thank You

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Regional Experience on Supportive Policies

Dr. Thatheva Saphangthong, Deputy Director of Department of Agricultural Land Management
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Virtually Workshop CAMBODIA

Lao Initiative for Conservation Agriculture and Agroecology in ASEAN (LICA)

Thatheva Saphangthong, PhD.
Deputy Director General
Department of Agricultural Land Management (DALaM)
OVERVIEW

1. Session
2. Contents
3. Key Takeaways
Session 1
Objectives

To establish Lao Initiative for Conservation Agriculture and Agroecology in ASEAN (LICA)
In recent years, most of ASEAN members countries agriculture has experienced profound and rapid changes. The joint process of land Conversion (deforestation), new land extension and conventional agricultural intensification has often led to high land degradation and carbon emission.

Decrease soil fertility and increase CO2 to Atmosphere in 15 years (1990-2005) by conventional practice (sayabury province, Laos)

<table>
<thead>
<tr>
<th>Natural ecosystem</th>
<th>0-10 cm</th>
<th>10-20 cm</th>
<th>0-20 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOM natural (%)</td>
<td>7.99</td>
<td>5.66</td>
<td></td>
</tr>
<tr>
<td>SOC natural (%)</td>
<td>4.64</td>
<td>3.29</td>
<td></td>
</tr>
<tr>
<td>Stock C (ton/ha)</td>
<td>48.67</td>
<td>37.78</td>
<td>86.45</td>
</tr>
<tr>
<td>Bulk density (Mg.m⁻³)</td>
<td>1.05</td>
<td>1.15</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Converting forest + 15 years of ploughing</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOM current (%)</td>
</tr>
<tr>
<td>SOC current (%)</td>
</tr>
<tr>
<td>Stock C (ton/ha)</td>
</tr>
<tr>
<td>Bulk density (Mg.m⁻³)</td>
</tr>
</tbody>
</table>

Total loss of carbon (ton/ha) = 42.81
What Is Conservation Agriculture in Laos?

The Conservation Agriculture is based on the three following principles:

1. Minimum mechanical soil disturbance
2. Permanent organic soil cover
3. Crop diversification (through crop associations or rotations)

Crop Diversification
Why LICA?

• With a fast growing population, increased pressure on its natural resources and climate change impacts everyday more present, **South East Asia is at a cross-roads** regarding its agriculture development:
  
  i.) The **continuation of an agro-industrial models** very intensive in inputs and capital;

  ii.) The promotion of **innovative agroecological systems**, less dependent on agrochemical inputs and taking more into account environmental and social sustainability.

• Agricultural **productivity and profitability** is becoming increasingly **vulnerable to climate change**, especially under **rainfed conditions**.

• **Sustainably managing soil fertility** and **soil health** while maintaining productivity is a challenge.

• Agroecological (AE) practices have been developed in response to these challenges critical issues: **Soil fertility** and **biodiversity depletion** and **Water scarcity or increasing biotic constraints to crop and livestock productions**;

• **FAO 2018** and **adapt to and mitigate climate change** Agroecological production models represent key options to Intensify agricultural production over the long term, Limit the conversion of forests to cropland, Limit the use of external inputs (fertilizers, pesticides), Mitigate GHG emissions from agriculture (especially from paddy rice and from livestock systems) Contribute to increasing carbon storage in soils (agricultural, grassland, and forest) impacting the GHG emission balance

• The desired agroecological transition will contribute to **improve the capacity of farmers** to innovate on their own and to strengthen the **agrobiodiversity**, improving the **resilience** of farmers and production systems to climate change
2

Content
LICA process

How LICA has been processed

LICA support projects

Some Actions

Next step
How LICA has been processed?

2012: LICA initiative endorsed in the 34th AMAF meeting in Lao PDR

2013: A Concept Note was developed and circulated to SOM-AMAF Meeting in Malaysia

2015: the 36th Special SOM AMAF held in Nay Pyi Taw, Myanmar, suggested that Lao PDR to continue the initiative and urged AMS to actively participate in LICA

2016: The First Lao Initiative Conservation Agriculture Meeting was held in Vientiane, Lao PDR. The Meeting was attended by five ASEAN Member States (Cambodia, Lao PDR, Malaysia, Myanmar, and Singapore), ASEAN Secretariat, and domestic senior officials. It has been asked to enlarge the scope of LICA to all agroecology (AE) practices. The outcomes of this meeting were presented to the 23rd meeting of the ASEAN Sectoral Working Group on Crops held on July 2016, in Vientiane Lao PDR. In the special SOM meeting, in Thailand in September 2018, the concept note on common position of ASEAN member states towards AE, which will integrate outputs from the action plan.

2017: At the Special 38th SOM AMAF meeting in Singapore, it was confirmed that the scope of this initiative is not only CA but AE and that the objective of this initiative is to share, compare and as much as possible homogenize national regulations on AE, in order to progressively develop a Common Position of ASEAN. Lao PDR proposed to organize the 2d LICA regional meeting, in Vientiane, Lao PDR.
2018: The Second LICA meeting outcomes was presented in the 25th Meeting of the ASWGC on July in Nay Pyi Taw, Myanmar. Formulation of a LICA Concept Note with action plans on Agroecology and on a proposed ASEAN common position on conservation agriculture (CA) and Agroecology (AE). To share, compare, and homogenize as much as possible national regulatory and policy supports to Agroecology, and Lao PDR to facilitate LICA by establishing a coordination unit from each respective country.

2019: LICA was presented at the 26th ASEAN Sectoral Working Group on Crops (ASWGC) held on July 2019, Singapore. On August 2019, the LICA concept-note has been be presented to the 40th SOM ASEAN MAF meeting in Vietnam. An action will be established in partnerships with donors in order to develop national and regional programs in accordance with LICA proposals.

2021: The LICA was reported at the 28th ASEAN Sectoral Working Group on Crops (ASWGC) held on July 2021, Singapore. Here the focal point appointment was followed up with the member state. the LICA concept-note has been shared again to the 41th SOM ASEAN MAF meeting online held on August 2021. As so far, the LICA focal point had been nominated only 4 countries Laos, Cambodia, Malaysia and Indonesia. The meeting requested to the member countries to fulfill this appointment and sent to ASEAN secretariat. The chair-person request Lao PDR to update road map and circulated among the appointed coordinator.
LICA support projects

- During the last ten years, a **SEA Network of Research & Development Organizations** has been working on **Agroecological Transition**

- In 2015, this network has been reinforced, through an AFD funded-project called ACTAE, to support and coordinate national and regional capacities addressing the different dimensions of an agroecological transition. To date, over **150 organizations** are gathered across the Mekong Region (https://ali-sea.org)

- The network produces and collects background and policy documents, studies and factsheets, toolkits and materials, from the different Agroecology practices (Agroforestry, CA, Integrated Farming, IPM, Organic Agriculture, SRI...)

- LICA aims at building upon and synergizing this on-going activities

The 25th ASWGC Meeting viewed that LICA may relate to SPA on Crops related to Soil Conservation / Agroecology

The Meeting requested Lao PDR to come up with proposed activities that may fit under the SPA on Crops, **AP 3.1 Activity 1.3.1: Promote sustainable and optimisation of utilisation of land and natural resources and agricultural innovation on improving productivity and sustainable agricultural production.**

The proposed new **LICA 5-year phase** started in 2019.

It will benefit from the support of a new project funded by **AFD** (French Agency for Development) and the **European Union: Agroecology and Safe food System Transitions (ASSET) in Southeast Asia Project**

Project geographic focus primarily on 4 countries CLMV in the Mekong Region, but lessons learnt and knowledge produced to be shared at ASEAN level.
To support **regular ASWGC members** in order to deeply involve them into the design, steering, and monitoring of activities of this SEA regional network on agroecological transition concept and practices.

To include in the new 5 years of work programme between FAO and ASEAN (2019-2024) under ASWGC: **Strategic Plan of Action for Asean Cooperation on Crops AP1.3. (1.3.1)** (2016-2020).
Project framework

➢ Assessing performances, enabling conditions, and impacts of the diversity of agroecological transition practices (FAF ASEAN standards on GAP, GAHP, ASOA…), through countries flagships

➢ Developing awareness and training supports to improve agroecological transition practices, towards consumers, farmers, traders, and advisory staffs

➢ Identifying existing and new policy mechanisms that improve agroecological transition progresses (intersectorial coordination at different scales, financial supporting mechanisms, facilitating value chain partnerships, supporting FAF ASEAN standards market prices…)

➢ Foster, feed and strengthen existing policy dialogues on agriculture, food, and trade at local, national and regional levels

➢ Setting countries flagships (Action-research & capacity building centres) to experiment technical, organizational, and value-chains innovations for agroecological transition.

➢ Support multi-stakeholders monitoring of these countries flagships.

➢ Support ASWGC members to monitor and assess flagships outputs for scaling out at ASEAN level.

➢ Strengthen and enlarge the Agroecology link in South East Asia multi-stakeholders regional platform on agroecological transition (knowledge hub, multimedia communication, consumers and policy-makers involvement, capacity building)
Some actions

➢ Co-identifying (project staff, ASWGC and ALISEA members) countries flagships.

➢ Experimenting research, advisory, policy mechanisms, and awareness methods in flagships, through linking producers, processors, traders, advisers, and consumers

➢ Yearly workshops and field visits of LICA country taskforce (national staffs of the country + ASWGC members) to monitor flagships activities.

➢ Yearly workshop of ASWGC members (“LICA regional taskforce”) to monitor and analyze LICA country taskforces outputs and proposals.

➢ Produce notes and briefs about farming practices, organizational and institutional mechanisms that could be relevant for a scaling out at the ASEAN level.

➢ Develop training, awareness, and communication supports to support agroecological transition process (social media, forum, networking, video: see https://ali-sea.org)
3

Key Takeaways
In 2020, a new project which is funded by AFD and EU, named ASSET, has included a support to LICA, through its policy dialogue sub-component. This project is focused on four ASEAN countries (Cambodia, Laos, Myanmar and Viet Nam). The project will support the Lao government (LICA focal point) in facilitating the four countries documentation and sharing of their innovative policy mechanisms, in order to nurture the LICA process at the ASEAN level.

Between September and December 2021, the Lao LICA focal point will facilitate documentation of Lao best innovative institutional mechanisms in the country that are supporting agroecology transition, conservation agriculture and safe food systems (“Success and learning stories in policy support to agroecological transition”). These valuable Stories will then be shared and analyzed by a Lao policy task force that will be supported by ASSET project, and that will be facilitated by Lao LICA focal point.

Before end of 2021, the Lao LICA focal point will set up a coordination process between ASSET policy dialogue focal points from Cambodia, Laos, and Viet Nam, and their respective country LICA focal points. The objective of this coordination will be to help the ASSET and LICA focal points of Cambodia and Viet Nam to document then share their own Success and learning stories in policy support to agroecological transition.

During the 2022 1st six-monthly period, ASSET and LICA focal points of Cambodia and Viet Nam will launch a selecting then documenting process of the best innovative institutional mechanisms in their own country that are supporting agroecology transition and safe food systems (“Success and Learning Stories for LICA”).
Next Step (cont.)

• During the 2022 2d six-monthly period, the documented Success and Learning Stories from these countries will be shared with the LICA focal points of the different ASEAN countries, in order to get their comments and to propose them to select and document their own Success and Learning Stories.

• Then these documented Success and Learning Stories from ASEAN countries will be shared and analyzed in the 42th meeting of the ASEAN Sectoral Working Group on Crops that will be held on 2022.

• During 2023, ASSET and LICA focal points from Laos, Cambodia and Viet Nam will be supported by ASSET project to draw from all the Success and Learning Stories that are collected from ASEAN countries a first proposal of ASEAN guidelines for policy mechanisms that support agroecological transition that will be shared with the other countries LICA focal points.

• In late 2023, Lao LICA focal point will facilitate a collective work between ASEAN countries LICA focal points, in order to analyze and improve the first draft of ASEAN guidelines for policy mechanisms that support agroecological transition.

• The LICA focal points of ASEAN countries will be present together their recommendations on forthcoming ASEAN guidelines for policy mechanisms that support agroecological transition in the 43th meeting of the ASEAN Sectoral Working Group on Crops that will be held on 2023.
Thank You

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Q&A for Session 4

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