Transformative approaches to agroecology at the landscape level

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1st National multi-stakeholder workshop on Agroecological Transition in Laos, 2-3 June 2016, Vientiane
Outline

• Issues related to the adoption of agroecology practices,

• Understanding agricultural dynamics and diversity of local contexts to facilitate adoption,

• Designing relevant intervention mechanisms at the landscape level,

• Showcasing the approach: village case studies
Challenges of AE adoption/dissemination

- No straightforward innovation pathway
- Requires adaptations to local contexts
Agrarian changes in the northern uplands

• A continuum of local land use practices between 2 unsustainable extremes situations:

  **Shifting cultivation**
  - Shortening fallows 10-12 years -> 3-5 years
  - Increased labour requirement for weeding
  - Land degradation - decreasing yields

  **High input monocropping**
  - Mechanization
  - Increased use of chemical inputs
  - Land degradation - decreasing yields

• Which alternatives?
• Which intervention mechanisms?

...towards ecological intensification
Agrarian changes in the northern uplands

Natural ecosystems

Healthy landscapes

Traditional swidden systems

Degraded landscapes

Intensive monocrop systems

Managed landscapes

Conceptual framework

Adapted from Griffon, 2013
Agrarian changes in the northern uplands

Natural ecosystems

Opportunity windows

Healthy landscapes

Ecologically intensive systems

Intensive monocrop systems

Degraded landscapes

Managed landscapes

Natural landscapes

Traditional swidden systems

Conceptual framework

Adapted from Griffon, 2013
Agrarian changes in the northern uplands

Adapted from Griffon, 2013

- Natural ecosystems
- Traditional swidden systems
- Intensive monocrop systems
- Ecologically intensive systems

Natural landscapes

Managed landscapes

Healthy landscapes

Degraded landscapes

Conceptual framework
Agrarian changes in the northern uplands

Natural ecosystems

Healthy landscapes

Traditional swidden systems

Agroecological practices
- biomass increase and recycling
- protect soils and biogeochemical cycles
- optimize functional agrobiodiversity
- harness beneficial natural interactions

Intensive monocrop systems

Degraded landscapes

Managed landscapes

Ecologically intensive systems

A landscape approach to agroecology

Adapted from Griffon, 2013
Agrarian changes in the northern uplands

A landscape approach to agroecology

Natural ecosystems

Healthy landscapes

Ecologically intensive systems

Managed landscapes

Landscape approach
- understand the diversity of local contexts
- co-design desirable landscape
- multicriteria evaluation of performances
- manage different sources of knowledge

Traditional swidden systems

Degraded landscapes

Intensive monocrop systems

Adapted from Griffon, 2013

A landscape approach to agroecology
Phoutong village
Viengkham district
Louang Prabang province
Community-based Agricultural Development Plans 2015-2016

Phoutong Village
Viengkham district, Luangprabang province

1. INTEGRATED APPROACH TO LIVESTOCK SYSTEM IMPROVEMENT

Living fences and forage production
Set up livestock area with permanent living fences (combination of barbed wire and trees) 6.5 ha in 2015 involved 77 HH. In 2016, expand to additional 7 ha.

Training on forage management
30 people took part in the training to produce silage, hay, and feeding boxes.

Animal healthcare
The project provided training to 36 participants in 2015. 4 village volunteers were selected to form the village vet-service team.

2. SUSTAINABLE CROPPING SYSTEMS IN THE UPLANDS

Vegetable
Maize vigna association
Forest restoration

Fallow management and improvement of upland rice production
The project organized training on fallow management and improvement of rice production.

3. AGRICULTURAL INTENSIFICATION AND DIVERSIFICATION

Strengthening the village land management committee
in implementing the village land use plan
Study tour planned in 2016
Animal healthcare
The project provided training to 36 participants in 2015. 4 village volunteers were selected to form the village vet-service team.

2. SUSTAINABLE CROPPING SYSTEMS IN THE UPLANDS
Intercropping systems maize/rice with pigeon pea
Introduction of pigeon pea (for stick-lack production) in association with upland rice and maize, 9 households (HH) and 8 ha in 2015. 11 additional HH in 2016.

Fallow management and improvement of upland rice production
The project organized training on fallow management and improved upland rice varieties in 2015. 48 people took part.

3. AGRICULTURAL INTENSIFICATION AND DIVERSIFICATION
Intercropping cassava and stylosanthes

Control of rodent damages
The project provided 400 metal traps in 2016

Rice bank for food security
The project provided 2 tons of rice for the village rice bank in addition to villagers’ contribution in 2016.
**Phounkang village, Viengxay district, Houaphan province**

### Topics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population</td>
<td></td>
</tr>
<tr>
<td>Households (no)</td>
<td>36</td>
</tr>
<tr>
<td>HH members (no)</td>
<td>186</td>
</tr>
<tr>
<td>Women (no)</td>
<td>93</td>
</tr>
<tr>
<td>Labor force (no)</td>
<td>81</td>
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### Agriculture

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Upland rice prod (t)</td>
<td>18</td>
</tr>
<tr>
<td>Lowland rice production (t)</td>
<td>48</td>
</tr>
<tr>
<td>Rice production (kg/capita)</td>
<td>354</td>
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<tr>
<td>% upland rice on total rice production</td>
<td>27%</td>
</tr>
<tr>
<td>Maize production (t)</td>
<td>64.5</td>
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<tr>
<td>No Buffalo</td>
<td>28</td>
</tr>
<tr>
<td>No Cattle</td>
<td>68</td>
</tr>
<tr>
<td>No Goat</td>
<td>0</td>
</tr>
<tr>
<td>No Pig</td>
<td>62</td>
</tr>
<tr>
<td>No Fish pond</td>
<td>31</td>
</tr>
</tbody>
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### Land use plan 2012

- DAFO PLUP 2013 – GRET/SNV

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**Administrative boundary of Ban Phoukang, Viengxay district, Huaphan province**

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**EFICAS project**

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1. INTEGRATED APPROACH TO LIVESTOCK SYSTEM IMPROVEMENT

Living fences and forage production
Set up livestock area with permanent fences (combination of barbed wire and tree seedlings) on an area of 5 ha. 33 HH participated in 2015.

Training on forage management
33 people took part in training to produce silage, hay, and feeding boxes.

Training on animal healthcare
30 people participated in the training. Organized a vet team compose of 3 village volunteers.

2. SUSTAINABLE CROPPING SYSTEMS

Introduction of labor saving devices

3. AGRICULTURAL INTENSIFICATION AND DIVERSIFICATION IN PADDY TERRACES

Introduction of vegetable winter crops
The project provided 7 species vegetable seeds to 21 HH to grow on an area 1.2 ha.
Training on animal healthcare
30 people participated in the training. Organized a vet team compose of 3 village volunteers.

2. SUSTAINABLE CROPPING SYSTEMS IN THE UPLANDS
Intercropping systems maize/rice with pigeon pea
Improved fallow management with pigeon pea (for stick-lack production) in upland rice and maize; 18 HH implemented on a 10 ha area.

Fruit tree plantation
The project test fruit tree plantation in the village with 90 seedlings, provided to 2 HH to grow on 0.7 ha. Later on, many households show an interest in growing fruit tree.

3. AGRICULTURAL INTENSIFICATION AND DIVERSIFICATION IN PADDY TERRACES
Introduction of vegetable winter crops
The project provided 7 species vegetable seeds to 21 HH to grow on an area 1.2 ha.

Introduction of labor saving devices
10 hand jab planters for upland rice and maize sowing

Introduction of soybean and peanuts for replacing drought-damaged crops
The project helped villagers adapting to climate change by providing soybean and peanut seeds to 14 HH who got affects from the drought.
CADP expected impacts

- Improved crop-livestock interactions
  - Cover crops
  - Improved fallow
  - Control of roaming animals
  - Improved pasture

Improved crop-livestock interactions
Take home messages

• Diversity of local contexts in the uplands
  -> engaging in a landscape approach to agroecology
Take home messages

• Local ownership – uncertain outcomes
  -> empowering village communities
Take home messages

• A continuous learning process with
  -> extension agents as communication facilitators, not expert prescriber
Thank you for your attention...