**Forest Use and Indigenous Eco-knowledge in Northern Laos**

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**Livelihood in northern Laos**

**Agriculture:** the most important industry in Laos

- Northern region
  - Mountainous landforms
  - Swidden fields
    1. Subsistence purpose
    2. Difficult to obtain surplus rice to sell

Need to earn cash from economic activities other than rice production

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**Cash income activities**

1. Off-farm activities
2. Farm activities (cash crops and livestock)
3. NTFP (non-timber forest product) gathering

- Play an important role in generating income for rural people, especially for the poor
- Keys to gathering natural resources for sustainability
  1. Management of the gathering method
  2. Management of the gathering environment
- **Indigenous eco-knowledge**

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**Economic activity by settlement, 2001**

- **Upland rice**
- **Cash crop**
- **NTFPs**
- **Livestock**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Avg. income, n=160</th>
<th>Avg. farmer’s income, n=136</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upland rice</td>
<td>1,000,000 - 300,000 kip/household</td>
<td>259USD (NTFP 48.9%, Livestock 23.0%)</td>
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<tr>
<td>Cash crop</td>
<td></td>
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<tr>
<td>NTFPs</td>
<td></td>
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<tr>
<td>Livestock</td>
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</tbody>
</table>

- Avg. income, n=160
- Avg. farmer’s income, n=136

**Commercial NTFPs and fallow age**

**NTFPs**

<table>
<thead>
<tr>
<th>Age of swidden fallow</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
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</thead>
<tbody>
<tr>
<td>Tiger grass</td>
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<td>Paper mulberry</td>
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<tr>
<td>Galangal fruits</td>
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<tr>
<td>Benzoin</td>
<td>☑</td>
<td>☑</td>
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<td>☑</td>
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<tr>
<td>Cardamom</td>
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<tr>
<td>Rattan fruits</td>
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</tbody>
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- Seldom found in the swidden fallows

**Quantity of NTFP gathering:** Small ☑, Moderate ☐

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**Vietnam**

- China
- Thailand
- South China Sea
- Cambodia

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**Sayabouly**

- Laos
- South China Sea

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**Luang Phabang area (Luang Phabang Province)**

**Fieldwork:** From Apr. 2001 to Sep. 2002

**Ethnic groups:** Khum, Lao and Hmong

**Economic activity:**
- Swidden farming and commercial NTFP gathering

**Interview:** 160 households in 16 settlements
Yokoyama & Ochiai "Forest Use and Indigenous Eco-knowledge in Northern Laos"

**Sustainable NTFP gathering method**

- **Ex. Styrax tree (Benzoin):** find only in swidden fallows
  - 18 months
  - 6-year
  - Tapping Benzoin

  **Burning forests for swidden farming**
  Artificial regeneration combined with swidden farming

  **Sustainable NTFP gathering method**
  **Indigenous eco-knowledge (?)**

  **Whole plants for everyday life (Topic 2)**

**Survey routes and the plant growing positions**

- Plant growing position recorded by GPS
- Survey routes automatically recorded by GPS
- River/Stream
- Road/Path

Mai Natao, 2004 (148 samples)
Houay Pae, 2005 (134 samples)

**Ecological condition of plant samples**

<table>
<thead>
<tr>
<th>Zone</th>
<th>Sub-zone (Ecological condition)</th>
<th>Mai Natao</th>
<th>Houay Pae</th>
</tr>
</thead>
<tbody>
<tr>
<td>Settlement</td>
<td>Settlements (incl. old settlement site)</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Farm</td>
<td>In and around the paddy fields</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In and around the cassava fields</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>In and around the swidden fields</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Gardens attached to a hut in the fields</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Forest</td>
<td>Swidden fallows (1-10 years)</td>
<td>5</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>Swidden fallows (11 years or more)</td>
<td>32</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Dense forests (old secondary forests)</td>
<td>37</td>
<td>18</td>
</tr>
<tr>
<td>Water</td>
<td>In and around the river/stream/swamp</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>148</td>
<td>134</td>
</tr>
</tbody>
</table>

**Recognition of the importance of the places that are often disturbed by the everyday activities**

**Summary**

- **Vulnerable to development**
  - Indigenous eco-knowledge
    - Burning forests for swidden agriculture
    - Disturbing vegetation by everyday activities
  - Helping the succession of secondary vegetation

- **Secondary forests after swidden farming**
  - Commercial NTFPs
  - Plants for everyday life

- **Swidden fields**
  - Various crops

- **Cash income**
  - Basic level of subsistence

- **Supporting local livelihoods in rural areas**

**Land-forest allocation (LFA) at Mai Natao, 2004**

- Allocation of farmland to families and guaranteed rights of use, transfer and inheritance
**What happens after implementing LFA**

**Case 1 Village A in Oudomxay province**
- **Major crop:** Various commercial crops instead of upland rice
  - Facing difficulties living on commercial crops because of the lack of market information

**Case 2 Village B in Luang Phabang province**
- **Major crop:** Changing from upland rice to Job’s tears
  - The fields have been used for Job’s tears monoculture

**The ideal forest use**

**The IDEAL forest use policy recommended by outside parties**
1. To Increase land tenure security for encouraging intensive agriculture
2. To eliminate swidden agriculture for protecting natural resources and the environment

**Conclusion: the ideal and the real forest use**

**The REAL forest use practices by the locals based on Indigenous eco-knowledge**

1. Using the spatial dynamics of vegetation changes
2. Recognizing secondary forests after swidden farming as important spaces for supporting their livelihoods

Need to consider the two facts above to design a more realistic forest use policy

Thank you very much for your kind attention