Effective Cyclic Use of Natural Resources through Eri-Culture in Kampong Cham Province, Cambodia

ERECON - Institute of Environmental Rehabilitation and Conservation, Japan
What is Satoyama Initiative?

Conceptual Structure of the Satoyama Initiative

**Vision:**
Societies in harmony with nature

**Three-Fold Approach:**
1. Consolidate wisdom on securing diverse ecosystem services and values
2. Integrate traditional ecological knowledge and modern science
3. Explore new forms of co-management systems

**Contributions to socio-economies**

**Cyclic use of natural resources**

**Recognition of the value and importance of local traditions and cultures**

**Multi-stakeholder participation and collaboration**

**Five Key Perspectives in the Approach**

Source: SATOYAMA Initiative
<table>
<thead>
<tr>
<th>#</th>
<th>Classification</th>
<th>Main category</th>
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<tbody>
<tr>
<td>1</td>
<td>Cluster</td>
<td>-capacity building -on-the-ground activities</td>
</tr>
<tr>
<td>2</td>
<td>Scale</td>
<td>-Local</td>
</tr>
<tr>
<td>3</td>
<td>Region</td>
<td>-Southeast Asia</td>
</tr>
<tr>
<td>5</td>
<td>Ecosystems</td>
<td>-Agricultural</td>
</tr>
<tr>
<td>6</td>
<td>Organization</td>
<td>-International NGO -Research institute</td>
</tr>
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<td>7</td>
<td>Socio-economic activity</td>
<td>-Agriculture -Environmental education</td>
</tr>
<tr>
<td>8</td>
<td>Research strategy</td>
<td>-Type of research: Quantitative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Method: Questionnaire survey</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Numbers of research papers</td>
</tr>
<tr>
<td>9</td>
<td>Themes</td>
<td>-Securing livelihoods and enhancing wellbeing (e.g. poverty reduction, community empowerment, food security, sustainable livelihood)</td>
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Project sites

Target area: Prey Chhor district, Kampong Cham province
Problems we see
Inappropriate chemical pesticide application
Problems we see

Prohibited chemical pesticides are still on sale in the market

- Methyl parathion
- Methamidophos
- Methomyl etc...
Problems we see

1. Decreased in bio-diversity
2. Degradation of soil and water environment
3. Increased in various illness for local farmers and etc...

Eutrophication occurs due to the outflow of phosphorus(P) and nitrogen(N) from farmland
Objective of the project

To promote environmental awareness, especially in terms of the reduction of chemical pesticide application in local villages in Kampong Cham province, Cambodia.
What is eri-culture / eri silkworm?

- Wild silkworm and its origin is India
- Host plants are leaves of castor (*Ricinus communis*) and cassava (*Manihot esculenta*)
- Conduct in Thailand, Vietnam, Ethiopia and etc...
- Nano-tube structure (Akai & Nagashima, 2001)
- Sensitive to chemical substances
## Differences between eri silkworm and mulberry silkworm

<table>
<thead>
<tr>
<th></th>
<th>Eri silkworm</th>
<th>Mulberry silkworm</th>
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<tbody>
<tr>
<td><strong>Host plants</strong></td>
<td>Castor, cassava, papaya</td>
<td>mulberry</td>
</tr>
<tr>
<td><strong>Color and characteristics</strong></td>
<td>Ecru (natural color)</td>
<td>White or yellow</td>
</tr>
<tr>
<td></td>
<td>Nano tube structure</td>
<td></td>
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<tr>
<td><strong>Number of hatch</strong></td>
<td>around 6 times per year</td>
<td>1 or 2 times per year</td>
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Extension activities

- 1st workshop: October, 2010
Extension activities

2nd workshop: November, 2010
Extension activities

3rd workshop: December, 2010
Evaluation on the effects of eri-culture on promoting environmental awareness by questionnaire survey (March and October 2011)

Focused on the local farmers’ awareness in terms of the reduction of chemical pesticide application

Q: Whether have you already initiated eri-culture or not?

Q: How much do you want to reduce chemical pesticide compared to conventional way?

Q: How much did you enhance communication compared to before starting eri-culture?

Q: How much do you expect that eri-culture contributes to income generation per year?
Expected and actual amounts of chemical pesticide reduction between eri-culture farmers and others

Difference in expected percentage of chemical pesticide to be reduced between rearers and others

Difference in actual percentage of chemical pesticide reduced between eri silk-raising farmers and others
What we can do through eri-culture

- Natural resource utilization and management
- Resilience of environment
- Recognition of the value of traditional culture
- Community empowerment
- Sustainable livelihood
- Income generation
Conclusion

Eri-culture may be one of solutions to the problems in agriculture and helps in conserving natural resources as well as reducing poverty by creating job opportunity in the village

However

Sustainable farming practices may be indispensable to minimize the insect damage
Thank you very much for your attention

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