



*Asia-Pacific Network for Sustainable Forest Management and
Rehabilitation*

PROJECT PROPOSAL

Sustainable Forest Rehabilitation and Management for the
Conservation of Trans-boundary Ecological Security in
Montane Mainland Southeast Asia– Pilot Demonstration
Project of Lao PDR, Myanmar and China/Yunnan
(SFR-MMSEA)

SERIAL NUMBER: APFNet /2012/PP/03

The United Nations University Institute for Sustainability and Peace (UNU-ISP)
The Yunnan Academy of Forestry (YAF), China
The National Agriculture and Forestry Research Institute (NAFRI), Lao PDR
The Forest Research Institute (FRI), Myanmar
Submission date: 27September 2012

Project Proposal General Information

(Submission Date:27/September/2012)

Project title:

Sustainable Forest Rehabilitation and Management for the Conservation of Trans-boundary Ecological Security in Montane Mainland Southeast Asia– Pilot Demonstration Project of Lao PDR, Myanmar and China/Yunnan (SFR-MMSEA)

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Outline of the project:

The Montane Mainland Southeast Asia (MMSEA) encompasses the northern region of Thailand, Lao PDR and Vietnam, the Yunnan Province of China, and the Kachin and Shan States of Myanmar extending to Northeastern India. MMSEA is home to a diversity of ethnic minority groups, tropical forests and endangered and endemic species of global significance. MMSEA serves as a watershed for a few large rivers in the sub-region, including the Lanchang-Mekong, the Ru-Salween, the Red River, the Yaluzangbu-Brahmaputra, the Irrawaddy, the Pearl and the Yangtze. However, MMSEA suffers from severe deforestation with negative impacts on ecology, hydrology and local livelihoods, resulting from inappropriate land use change under internal and external pressures. Past efforts to rehabilitate degraded land are often through mono-species plantations with limited contribution to restoration of ecosystem services.

The project aims to create new knowledge and alternative options for sustainable forest rehabilitation and management in the target areas among Laos, Myanmar and Yunnan of China for safeguarding the trans-boundary ecological security in the MMSEA region. The specific objectives are:

- Identify and adapt the best practice for forest rehabilitation in the target areas and around the MMSEA
- Experiment and demonstrate good practice for forest rehabilitation, especially use of locally preferred, rare and endangered native tree species as well as local knowledge
- Develop capacity in sustainable forest rehabilitation and reach out to farmers and policy makers
- Integrate project lessons and network with other initiatives for a regional strategy on sustainable forest rehabilitation

The project will be carried out through partnerships at all levels in four demonstration sites in Lao PDR, Myanmar, and Yunnan Province of China. One demonstration site is located in Northern Laos. One is in Northern Myanmar. Two demonstration sites are located in Yunnan, one in the border area with Northern Laos and the other in Northern Myanmar. The project will focus on these sites with similar ecological conditions but different capacities, approaches and socio-economic contexts in addressing forest degradation in mountainous regions, as a way of enabling exchange of experiences and knowledge, cross-fertilization of ideas and stimulation of innovative approaches and action. A minimum set of criteria is used for site selection in the participating economies. These criteria include policy relevance, cultural diversity, traditional shifting cultivation in transition toward permanent agriculture (such as plantations and agroforests) for subsistence and market, significant extent of degraded forests, consent of local villagers, endorsement of government or relevant agencies, feasibility and accessibility of the sites selected, and priority forest ecosystems along the international river watersheds in MMSEA. The selected sites in three economies represent a wide range of ethnic groups of the mountainous area in the region on a broad geographical area both within and between the economies. The sites reflect the reality of the region where the rich diversity exists, i.e., biophysical, economic, social as well as cultural diversity.

Project commence date: 2012		Project completion date: 2014
Total budget: US\$ 650,000	APFNet's grant : US\$ 500,000	Counterpart contribution from UNU, NAFRI, FRI and YAF (in cash and in kind): US\$ 150,000

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Abbreviations and acronym

<i>APN</i>	<i>Asia-Pacific Network for Global Change Research</i>
<i>FRI</i>	<i>Forest Research Institute, Myanmar</i>
<i>GEF</i>	<i>Global Environment Facility</i>
<i>ISP</i>	<i>Institute for Sustainability and Peace</i>
<i>MMSEA</i>	<i>Montane Mainland Southeast Asia</i>
<i>NAFRI</i>	<i>National Agriculture and Forest Research Institute, Lao</i>
<i>PDR</i>	
<i>NTFP</i>	<i>Non Timber Forest Products</i>
<i>PAG</i>	<i>Project Advisory Group</i>
<i>PCO</i>	<i>Project Coordination Office in United Nations University</i>
<i>PSC</i>	<i>Project Steering Committee</i>
<i>REDD+</i>	<i>Reducing Emissions from Deforestation and Forest Degradation, including Conservation of forest carbon stocks, Sustainable management of forests, and Enhancement of forest carbon stocks.</i>
<i>SFR</i>	<i>Sustainable Forest Rehabilitation and Management</i>
<i>UNEP</i>	<i>United Nations Environment Programme</i>
<i>UNU</i>	<i>United Nations University</i>
<i>YAF</i>	<i>Yunnan Academy of Forestry</i>

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1. Background and Rationale

Mountains occupy about one fifth of Earth's terrestrial surface home to 20% of the world's human population and provide humankind with multi-functional resources and services. Mountains serve as "water towers" to half of humankind in one way or the other. Mountains harbor high biological and ethno-cultural diversity. Mountain forests play a critical role in the mitigation of natural risk hazards (erosion and landslides), conservation of soil and water, and provide vital food and fodder during lean periods. Conservation and sustainable management of mountain forests are not only a necessary condition for sustainable local livelihoods, but also a key to human well-being for nearly half the world's population who live downstream. However, mountains are fragile forest ecosystems. Internal and external pressures driving land use systems towards unsustainable forms put the integrity of the fragile mountain forest ecosystems at risk in many parts of the world.

The Montane Mainland Southeast Asia (MMSEA) encompasses the northern region of Thailand, Laos and Vietnam, the Yunnan Province of China, and the Kachin and Shan States of Myanmar extending to Northeastern India and is home to some of Asia's poorest and most disadvantaged people, many of whom represent a diversity of ethnic minority groups. MMSEA contains a major section of Southeast Asia's last remaining tropical forests and harbors a diversity of endangered and endemic species of global significance. MMSEA serves as watersheds for a few large rivers in the sub-region, including the Lanchang-Mekong, the Ru-Salween, the Red River, the Yaluzangbu-Brahmaputra, the Irrawaddy, the Pearl and the Yangtze. In spite of ecological importance, MMSEA has suffered severe deforestation resulting from inappropriate land use change under internal and external pressures.

Due to rapid population growth and lack of alternative livelihoods, the over exploration of natural resources has been an approach for economic development in parts of MMSEA. The excessive deforestation and unsustainable collection of NTFPs have not only degraded the function of forest ecosystem and caused a series of social and economic problems, but also hampered the improvement of local people's livelihood and the sustainable management of nature resources in line with safeguarding the trans-boundary ecological security in the MMSEA region. Cross-border flow and exchange of agricultural and forest products have created great demand for and extraction from natural resources. Presently, many urgent problems need to be resolved, such as ecological rehabilitation, biodiversity conservation, and poverty alleviation and so on. Some specific reasons for the proposed project to be located in MMSEA include that MMSEA is:

- (1) Part of global biodiversity hotspot due to the high species diversity and richness on endemic species;
- (2) Home to diversity of ethnic minority and culture with poor economic condition;
- (3) Under threat of continuous loss of biodiversity, fragmentation and degradation of forest habitats and international watershed, including the Lanchang-Mekong Basin;
- (4) Region where civil society efforts in nature conservation have not yet been well developed and supported.

Currently, much attention is being paid to conserve rich but fragile forest ecosystems in MMSEA region. However, most reforestation projects for rehabilitation of forest vegetation launched by governments are promoting mono-species plantations with use of exotic fast-growing tree species, and many valuable, rare and endangered native species are not used for reforestation. Meanwhile, local people's indigenous knowledge and techniques on native species are not fully appreciated by those projects.

2. Project Goal and Objectives

Goal:

The goal of the project is to create new knowledge and alternative options for community-based sustainable forest rehabilitation and management for up-scaling and replication in the wider MMSEA region in order to improve upland people's livelihoods and safeguard the trans-boundary ecological security in MMSEA.

Specific Objectives:

In order to implement a demonstration of the sustainable forest rehabilitation in the border areas among Laos, Myanmar and China, the project will have the following objectives:

- 1) Identify and adapt the best practice for forest rehabilitation in the target areas and around the MMSEA;
- 2) Experiment and demonstrate good practice for forest rehabilitation, especially use of locally preferred, rare and endangered native tree species as well as local knowledge;
- 3) Develop capacity in sustainable forest rehabilitation and reach out to farmers and policy makers;
- 4) Integrate project lessons and network with other initiatives for a regional strategy on sustainable forest rehabilitation for wider replication in MMSEA.

Myanmar has the most institutional support.

He supports the 2nd phrase.

Title: The title is big, objectives are specific, the objectives are to some extent away from what they are doing. The title is terrible, but objectives are more important.

Objectives that are achieved:

1. Forest rehabilitation, get forest back there, improve degraded forests.
 - 1) Reducing negative impacts of local agriculture, ensure income that doesn't decrease
 - 2) Increase forest ecosystem.
2. Convert forest component of agriculture. Have more trees on the field, more forest environment services.

T

3. Expected Outputs and Outcomes

Expected Outcomes:

- 1) Knowledge of ecological, social, cultural and economic processes associated with forest degradation and rehabilitation in pilot sites is enhanced.

Expected outputs:

- a) Assessment of the threats and issues of forest degradation and biodiversity losses in selected pilot sites among China, Laos and Myanmar through the basic field inventory of natural resources status
 - b) Synthesis of good practices, experiences and lessons, including local knowledge learned from past forest rehabilitation and management in MMSEA
 - c) Sustainable forest resources management plan, including customary forest classification and management for each pilot project site in Laos, Myanmar and China/Yunnan Province through participatory process involving local communities, authorities and scientists
- 2) Replicable and adaptable model for community-based rehabilitation of degraded forests practices and related toolkits are developed and demonstrated at pilot sites.

Expected outputs:

- a) Database of locally preferred, rare and endangered native tree species, site requirements, and techniques for preparation of seedlings and planting materials
 - b) Techniques for soil improvement in degraded areas for tree planting
 - c) Agroforestry systems, including understory cultivation
 - d) Toolkits to facilitate social fencing of assisted natural regeneration
 - e) Package for alternative rural energy
 - f) 10-20 ha of demonstration plots established at each pilot site
- 3) Capacity of different target groups including local communities and authorities, and young researchers in sustainable rehabilitation and management of degraded forests through tailored made capacity building programmes is strengthened.

Expected outputs:

- a) On-job training of young generation up to 15 junior researchers and graduate students in assessment of forest degradation and rehabilitation
 - b) Training of farmers, community leaders, extension workers and local officials in application of sustainable forest rehabilitation models and toolkits
- 4) Strategies and mechanisms for up-scaling the effective practices on sustainable rehabilitation and management of degraded forests are developed and disseminated.

Expected outputs:

- a) A strategy for up scaling and replication of findings at local and sub-regional levels

- b) An information network and website on community based sustainable forest rehabilitation in the sub-region to deepen collaboration for safeguarding trans-boundary ecological security.

4. Main Activities Plan

The implementation of this project includes 4 major components:

- (1) Interdisciplinary assessment and participatory land use planning;
- (2) Field experiment and demonstration;
- (3) Capacity development and training module design; and
- (4) Mainstreaming and scaling up.

This project will ensure the equitable benefit of all stakeholders and facilitate the full participation of local communities. As the project progresses, cross-cutting of these components is crucial, e.g., activities to enhance capacity of local institutions and human resources for forest rehabilitation. Each component requires different approaches and methods.

For assessment, team approach will be adopted with integrated and comparative perspective. Village forest resources will be characterized and sustainable forest development plan will be prepared with local communities and authorities at different levels. A number of approaches and methods will be applied to field demonstration. Potential key intervention or actions would be expected for on-farm experimentation and demonstration. The participation of farmers and local stakeholders in field survey, characterization of village forest resources and forest development planning process, on-farm experimentation and demonstration could serve as on-site fieldwork training for local communities and authorities. In-house training will be made in connection with the processes of questionnaire data analysis, remote sensing, forest inventory, soil analysis, documentation and reporting. Training modules and toolkits will be developed and pre-tested for future application on a wide scale.

Lessons learned from three economies will be synthesized and packaged as models and toolkits for forest rehabilitation with collaboration between local communities, practitioners and local authorities for wider replication. The project's results will be synthesized and disseminated to support mainstreaming and scaling up of the successful experiences. Concepts, techniques as well as series of cases will be integrated into university curricula for the younger generation. The effective project experiences, knowledge and techniques will be replicated and disseminated widely by the way of inter-community driven networking and participatory approaches. In addition, expertise from outside will be involved in the project implementation and exchanged with other relevant initiatives around the region.

Four demonstration sites are selected in Lao PDR, Myanmar, and Yunnan Province of China. One demonstration site is located in Northern Laos. One is in Northern Myanmar. Two demonstration sites are located in Yunnan, one in the border area with Northern Laos and one in Northern Myanmar. The project will focus on these sites with similar ecological conditions but different capacities, approaches and

socio-economic contexts in addressing forest degradation in mountainous regions, as a way of enabling exchange of experiences and knowledge, cross-fertilization of ideas and stimulation of innovative approaches and action. A minimum set of criteria is used for site selection in the participating economies. These criteria include policy relevance, cultural diversity, traditional shifting cultivation in transition toward permanent agriculture (such as plantations and agroforests) for subsistence and market, significant extent of degraded forests, consent of local villagers, endorsement of government or relevant agencies, feasibility and accessibility of the sites selected, and priority forest ecosystems along the international river watersheds in MMSEA. The selected sites in three economies represent a wide range of ethnic groups of the mountainous area in the region on a broad geographical area both within and between the economies. These sites reflect the reality of the region where the rich diversity exists, i.e., biophysical, economic, social as well as cultural diversity. Communities in the demonstration site will cooperate with regard to the use of degraded forest land for experiment and demonstration.

The project outcomes will provide benefits to local communities and authorities, and training of young researchers with potential replication in MMSEA. In response to the project outcomes and outputs, the proposed project components and activities within each component are described as follow:

Component 1: Interdisciplinary assessment and participatory planning for sustainable forest development.

- **Activity 1.1** Basic field inventory of natural resources status to assess the threats and issues of forests degradation and biodiversity losses in selected pilot sites among China, Laos and Myanmar. A framework will be developed to collect ecological, social, cultural and economic data and analyze forest degradation and rehabilitation processes to establish a solid and holistic understanding of the forest quality and management dynamics at farm and community levels and the driving forces at various levels.
- **Activity 1.2** Reviews of experiences and lessons, learned from past forest rehabilitation and management in MMSEA, and to identify good practices, including local knowledge.
- **Activity 1.3** Participatory planning for sustainable forest resources management at each pilot project site. The guidelines will be prepared to carry out forest development planning with full participation of farmers and communities at the project sites.

Component 2: Experiment and demonstration for rehabilitation of degraded forests in pilot sites, including different approaches and methods.

- **Activity 2.1** Upland nurseries for preparing seedlings and planting materials of rare and endangered native tree species.
- **Activity 2.2** Soil improvement and rehabilitation of degraded forestland.
- **Activity 2.3** Upland agro-forestry based models, including understory cultivation.
- **Activity 2.4** Participatory social fencing for natural regeneration of degraded forests.
- **Activity 2.5** Alternative rural energy development, including bio-gas construction and improvement of energy efficiency stove at household level to reduce pressure on fuel

wood collection.

Component 3: Capacity building among different target groups, stakeholders and partners through the activities of training, workshop, study tours, information sharing and experiences exchange among project partners in China, Laos and Myanmar.

- **Activity 3.1** On-site and in-house training/exchange for young researchers and students on interdisciplinary assessment of forest degradation and rehabilitation.
- **Activity 3.2** Design and provision of training modules and toolkits on forest rehabilitation to train farmers, community leaders and extension workers and local officials with inputs of expert farmers in demonstration sites.

Component 4: Integrate project experience, indigenous and scientific knowledge and network with partners to develop a regional strategy for safeguarding the trans-boundary ecological security.

- **Activity 4.1** Synthesis of the project findings for up-scaling from local to sub-regional levels, including integration into university curricula for training of young generation and incorporation into relevant regional initiatives and programmes and development of large-scale programme at sub-regional level. The results from demonstration sites will first inform sustainable forest management plan at the sub-district or township level. This will then serve as a model for the up-scaling at higher levels with active participation of stakeholders who are involved with the project to develop up-scaling plans. Drawing on local experiences, the project will formulate a strategy for up-scaling and replication of findings at sub-regional level to be discussed at a sub-regional workshop in cooperation with other regional initiatives for the wider replication of the project findings.
- **Activity 4.2** Establishment of an information network among participating institutions to exchange relevant information and experiences. The network will be also linked to other relevant initiatives in the region. The information network would extend project findings beyond the sub-regional at larger scale. UNU will also set up the webpage on community based sustainable forest rehabilitation for dissemination of the project findings beyond the project cycle.

Potential risks and uncertainties that might impede the achievement of the project objectives:

Security risks along the border areas might arise to impede implementation of field work. Careful selection of the secure demonstration sites as well as some back-up sites in consultation with governments at all levels will help reduce the security risks. The unexpected climatic conditions might also delay and damage field demonstration. Careful distribution of demonstration plots on the village landscape as well as selection of appropriate tree species will mitigate climatic risks. Strong and active participation of local communities and governments will be essential to the success of the project. Criteria for site selection will include consultation with local communities and authorities as well as free and prior informed consensus of local communities.

Annex A and Annex B provide additional details on project framework and work plan. Annex E describes four project sites.

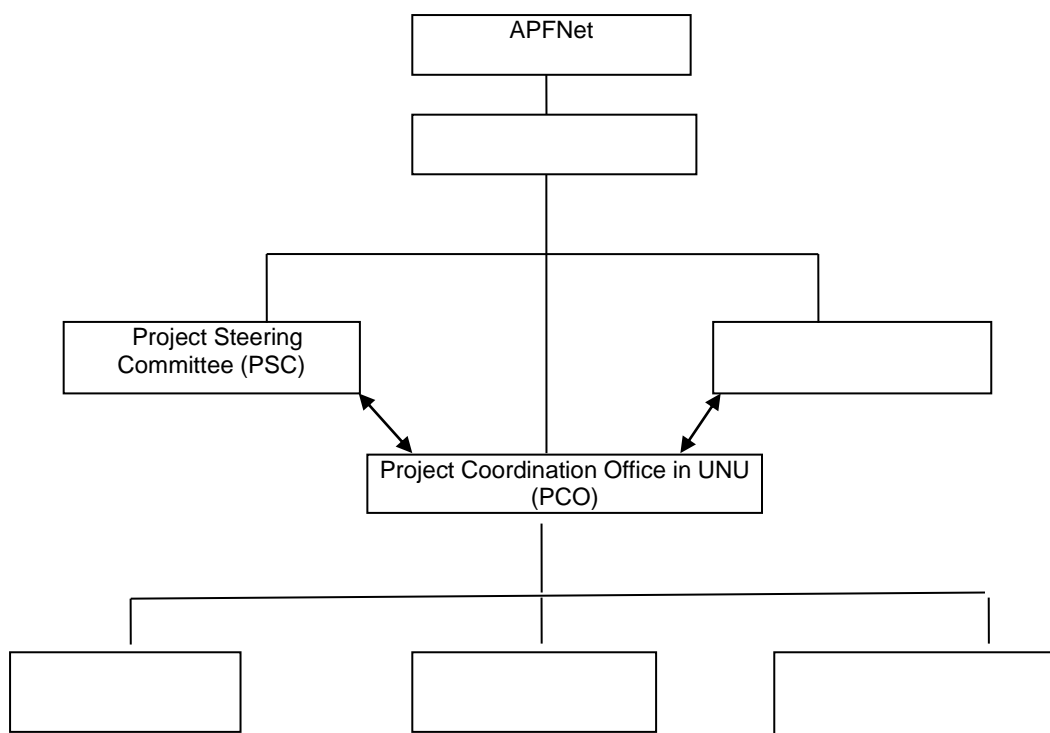
5. Project Management Structure

This project will be implemented by United Nations University (UNU) in collaboration with the Yunnan Academy of Forestry (YAF), the National Agriculture and Forestry Research Institute (NAFRI) of Lao PDR, and the Forest Research Institute (FRI) of Myanmar. A Project Steering Committee of the project (PSC) will be established and composed of the leaders of each of three project teams, the UNU Academic Programme Officer, as well as official representatives from UNU, APFNet and the government authorities (Ex-Officio of PSC). PSC is especially responsible for reviewing progress, determining forward plans, and advising on the programme of cross-site activities. PSC will meet as a body once in each year. A Project Advisory Group (PAG) will be formed to offer technical support towards the harmonization of the project methodologies, the integration of the project results, and the internal monitoring of the progress in the project sites across the three participating economies, advanced training and the scientific linkages with relevant initiatives in MMSEA and beyond. The members of the Project Advisory Group (PAG) will be selected according to the expertise of across-site relevance. Both PSC and PAG will work closely with the UNU project office to ensure effective planning and implementation of the cross-site programme. The organizational structure is illustrated in Figure 1.

UNU's key role is to provide project coordination and technical support to the project teams advised by the Project Steering Committee (PSC) and the Project Advisory Group (PAG). UNU will specifically, develop the project implementation plan and methodology in consultation with project teams, issue contracts and monitor the budget, regularly assess the project against its objectives and goals, coordinate the organization of cross-site programme, take responsibility for final report writing, lead communications and dissemination, maintain project documentation online, and facilitate collaboration with other international institutes and networks. A Project Coordination Office (PCO) will be established at UNU.

Project collaborators with experience and expertise in ecology and forest management in China, Laos and Myanmar will be the backbone to this project. Their key roles are: coordination, field work, regular reporting, organization of project workshops and training programme, supervision of students' work and local staff, local surveying, and acting as a key focal point for engagement with local communities and authorities. Scientific contribution made by each team includes:

Figure 1: The organizational structure



Notes on members of PSC, PAG and PCO:

1) Members in Project Steering Committee (PSC):

- OrothSengtaheuanghoung, Deputy Director, Agriculture Land Research Center, National Agriculture and Forestry Research Institute (NAFRI), Lao PDR
- Zaw Win Myint, Director, Forest Research Institute, Myanmar
- YangYuming, President, Yunnan Academy of Forestry (YAF); Director, Yunnan Academy of Biodiversity, China
- Liang Luohui, Academic Programme Officer, United Nations University Institute for Sustainability and Peace (UNU-ISP), Japan
- Chair: Prof. Kazuhiko Takeuchi, Vice Rector, United Nations University, Tokyo

2) Members in Project Advisory Group (PAG):

- Members to be determined in response to needs of the project implementation
- Chair: Prof. Yang Yuming, President, Yunnan Academy of Forestry (YAF); Director, Yunnan Academy of Biodiversity, China.

3) Members in Project Coordination Office in UNU-ISP (PCO):

- 1) Liang Luohui, Academic Programme Officer
- 2) HirokoKuno, Administrative and Programme Support Coordinator
- 3) Jintana Kawasaki, Researcher

Annex F and G introduce project partner institutions and project personnel.

6. Project Financial Management Procedure

UNU will cover effort and time invested by UNU staff for project coordination, technical support for field assessment and land use planning and capacity building. UNU will also contribute to the project by

covering the partial expenses of the workshop, training, and monitoring missions. Project partners including the Yunnan Academy of Forest (YAF) of China, National Agriculture and Forestry Research Institute (NAFRI) of Laos and Forest Research Institute (FRI) of Myanmar will also make contributions to the project implementation in terms of staff time, research facilities and organisation of workshops. UNU has contributed staff time to meet costs related to the project's inception. The project budget is presented by activity in Annex C and by component in Annex D.

7. Reliability and Reproducibility

Through the project implementation, local communities and authorities are expected to make more responsible land use decision through enhanced awareness of their upstream positions in the international watersheds. This will ensure the environmental sustainability of the project interventions. Institutional strengthening will be a key to the project implementation. The project partners in Lao PDR, Myanmar and Yunnan Province of China will help integrate the project lessons into the ongoing implementation of forest rehabilitation action plans under various line agencies. The main support of the governments and international community at all levels for sustainable forest rehabilitation and management (SFR) in the region is expected to continue and expand along with the rapid integration of regional economies.

The project will bring synergy between local skills/initiatives and the implementation of sustainable development program for achieving the policy objectives on poverty reduction and forest conservation. The lack of such synergy in policy implementation would result in costly operational costs and would be counter-productive in terms of contributing to the well being of local people and the conservation of natural resources. Networking with relevant projects in the participating economies as well as other economies in the region would also prevent costs related to duplication and enable prompt sharing of lessons learned. Finally, the project will start with identification and demonstration of local good practices so as to reduce the cost and time needed for the conventional process of experimentation-extension-replication.

The project will develop the community-based SFR model with toolkits with potential replication in the MMSEA region and other similar mountainous regions. The replication and extension of the project ideas and lessons in other similar areas in the participating economies will be achieved by educating trainers. The training will be based on the SFR model and toolkits, and other project findings and the demonstration activities. Policy forums with the support of project teams in each of three economies will help advocate the project ideas and approaches at a wider scale. The training materials on the SFR model and toolkits will be integrated into the existing mainstream training programmes and the extension system at sub-regional, provincial and local levels.

The exchange with other initiatives and other partners through the networks of UNU and other partners will provide an important channel for the dissemination of the project findings in various part of the region. The project will also develop a strategy from local to sub-regional levels to further mainstream the SFR in the MMSEA region. The new knowledge will be incorporated into the postgraduate and professional training programme of the participating institutions. This international partnership developed through this project will also serve as an example for other initiatives to foster the regional cooperation.

Annexes

Annex A: Project logical framework

Annex B: Project work plan

Annex C: Project budget by activity

Annex D: Project budget by component

Annex E: Project sites map and general information

Annex F: Capacity assessment of the project executing agency and partnership organizations

AnnexG: Curriculum Vitae(CV) of Project Management Board and Technical AssistancePartner

Annex A: Project Logical Framework

	Intervention logic	Objectively verifiable indicators of achievement	Sources and means of verification	Assumptions/Risks
Goal	To create new knowledge and alternative options for community-based sustainable forest rehabilitation and management for up-scaling and replication in the wider MMSEA region in order to improve upland people's livelihoods and safeguard the trans-boundary ecological security in MMSEA.	By end of project: 1. Guidelines and training materials for sustainable forest rehabilitation prepared, disseminated and applied at local, and sub-regional levels; 2. At least 100 ha of degraded forest land are rehabilitated with increase in net primary productivity, biodiversity and carbon stocks at project sites and potential sites for replication identified in MMSEA region; 3. Local communities at project sites to have an improved and more diversified livelihood base and to benefit from forest rehabilitation.	1. Final evaluation of the project; 2. Published guidelines and training materials; 3. Improved policy implementation plans; 4. Participatory rural appraisal (PRA) at project sites.	Assumption: Strong commitment and active participation of the project partners, local governments and communities Risks: Security of demonstration sites along the border areas, and normal climate
Objectives	1. Identify and adapt the best practice in the target areas and around the MMSEA 2. Experiment and demonstrate good practice for forest rehabilitation 3. Develop capacity and reach out to farmers and policy makers	1. Interdisciplinary dimensions of forest degradation and rehabilitation and best practices analyzed and compiled into a synthesis and local forest management plans developed; 2. Various sustainable practices for forest rehabilitation demonstrated;	Thematic reports on 1) Best practices and participatory forest management planning; 2) Field demonstration and PRA; 3) Capacity building; 4) Up-scaling and replication.	Assumption: Strong commitment and active participation of the project partners, local governments and communities

	Intervention logic	Objectively verifiable indicators of achievement	Sources and means of verification	Assumptions/Risks
	4. Integrate project lessons and network with other initiatives for a regional strategy on sustainable forest rehabilitation for wider replication in MMSEA	3. Target groups trained in forest assessment and rehabilitation; 4. A regional strategy and web site for up-scaling developed		Risks: Security of demonstration sites along the border areas, and normal climate
Expected outcomes/ outputs	1. Knowledge of ecological, social, cultural and economic process associated with forest degradation and rehabilitation in pilot sites enhanced Expected outputs: a) Assessment of the threats and issues of forests degradation and biodiversity losses in selected pilot sites b) Synthesis of experiences and lessons from past forest rehabilitation and management in MMSEA c) Participatory forest management plan, including customary forest classification and management for each pilot project site in three participating economies	1. Characterization of the threats and issues of forests degradation and biodiversity losses at pilot project sites; 2. Guidelines for forest degradation assessment 3. Interdisciplinary dimensions of forest degradation and rehabilitation and best practices collected, analyzed and compiled into a synthesis; 4. Guidelines for participatory forest management planning 5. Local forest management plans developed.	Thematic report on 1) The threats and issues of forests degradation and biodiversity losses at pilot project sites; 2) Synthesis of past experiences and lessons, and best practices; 3) Participatory forest management planning.	Assumption: Strong commitment and active participation of local communities and governments Risks: Stable security of demonstration sites along the border areas

	Intervention logic	Objectively verifiable indicators of achievement	Sources and means of verification	Assumptions/Risks
Expected outcomes/ outputs	<p>2. Replicable and adaptable model for community-based rehabilitation of degraded forests practices and related toolkits are developed and demonstrated at pilot sites</p> <p>Expected outputs:</p> <p>a) Database of locally preferred, rare and endangered native tree species, site requirements, and techniques for preparation of seedlings and planting materials</p> <p>b) Techniques for soil improvement in degraded areas for tree planting</p> <p>c) Agroforestry systems, including understory cultivation</p> <p>d) Toolkits to facilitate social fencing of assisted natural regeneration</p> <p>e) Package for alternative rural energy</p> <p>f) At least 10 ha of demonstration plots established at each pilot site</p>	<p>1. Site requirements and techniques for</p> <p>2. Preparation of seedlings and planting materials of locally preferred, rare and endangered native tree species assessed and demonstrated;</p> <p>3. Techniques for soil improvement in degraded areas for tree planting experimented and demonstrated;</p> <p>4. Agroforestry systems, including understory cultivation experimented and demonstrated;</p> <p>5. Toolkits to facilitate social fencing of assisted natural regeneration identified and demonstrated;</p> <p>6. A manual of the forest rehabilitation models and toolkits</p> <p>7. Package for alternative rural energy devised;</p> <p>8. At least 10 ha of demonstration plots established at each pilot site</p>	<p>1. Thematic report on field demonstration</p> <p>2. PRA at project sites against the baseline data.</p>	<p>Assumption:</p> <p>Strong commitment and active participation of local communities</p> <p>Risks:</p> <p>Stable security of demonstration sites along the border areas, normal climate</p>

	Intervention logic	Objectively verifiable indicators of achievement	Sources and means of verification	Assumptions/Risks
	<p>3.Capacity of different target groups in sustainable rehabilitation and management of degraded forests</p> <p>Expected outputs:</p> <p>a)On-job training of young generation up to 15 junior researchers and graduate students in assessment of forest degradation and rehabilitation</p> <p>b)Training of farmers, community leaders, extension workers and local officials in application of sustainable forest rehabilitation models and toolkits</p>	<p>1.Up to 15 junior researchers and graduate students participated in on-job training of young generation in assessment of forest degradation and rehabilitation carried out;</p> <p>2. Farmers, community leaders, extension workers and local officials joined field training and school in sustainable forest rehabilitation models and toolkits organized.</p>	<p>1.Thematic report on capacity building</p> <p>2. Research reports of students and young researchers</p>	<p>Assumption:</p> <p>Strong commitment and active participation of local communities and governments</p> <p>Risks:</p> <p>Stable security of demonstration sites along the border areas</p>
	<p>4. Strategies and mechanisms for up-scaling the effective practices on sustainable rehabilitation and management of degraded forests are developed and disseminated.</p> <p>Expected outputs:</p> <p>a)A strategy for up scaling and replication of findings at local and sub-regional levels</p>	<p>1.A regional strategy for up scaling and replication of findings at local and sub-regional levels prepared;</p> <p>2. An information network and website on sustainable forest rehabilitation in the sub-region established.</p>	<p>Thematic report on up scaling and replication.</p>	<p>Assumption:</p> <p>Strong commitment and cooperation of project partners and stakeholders at local and sub-regional level</p>

	Intervention logic	Objectively verifiable indicators of achievement	Sources and means of verification	Assumptions/Risks
	b) Aninformation network and website on community based sustainable forest rehabilitation in the sub-region to deepen collaboration to safeguard trans-boundary ecological security.			
Activities	<p>Component 1: Interdisciplinary assessment and participatory land use planning:</p> <p>Activity 1.1 Basic field inventory of natural resources status to assess the threats and issues of forests degradation and biodiversity losses in selected pilot sites among China, Laos and Myanmar.</p> <p>Activity 1.2 Reviews of experiences and lessons, learned from past forest rehabilitation and management in MMSEA, and to identify good practices, including local knowledge;</p> <p>Activity 1.3 Participatory planning for sustainable forest development at each pilot project site.</p>	<ol style="list-style-type: none"> 1. Forest ecologist/botanist consultant 2. Per diems of 12 interdisciplinary researchers (3 personnel per site) 3. 12 participatory village workshops (3 per site) 4. Equipments (computer, GPS, Digital camera) 5. Lab work and satellite imaging 6. Staff time of all partners 	<p>Costs : US\$117,200</p> <p>Regular progress report to UNU and consolidated project report to APFNet</p>	<p>Assumption:</p> <p>Strong commitment and active participation of local communities and governments</p> <p>Risks:</p> <p>Stable security of demonstration sites along the border areas</p>

	Intervention logic	Objectively verifiable indicators of achievement	Sources and means of verification	Assumptions/Risks
	<p>Component 2: Experiment and demonstration for rehabilitation of degraded forests in pilot sites, including different approaches and methods:</p> <p>Activity 2.1 Upland nurseries for preparing seedlings and planting materials of rare and endangered native tree species;</p> <p>Activity 2.2 Soil improvement and rehabilitation of degraded forestland;</p> <p>Activity 2.3 Upland agro-forestry based models, including understory cultivation;</p> <p>Activity 2.4 Participatory social fencing for natural regeneration of degraded forests;</p>	<ol style="list-style-type: none"> 1. Four field staff (one at each site) and one community forestry specialist 2. Collection and purchase of seeds and planting materials 3. Labor for plot preparation 4. About 20 field demonstrations/schools (5 times per site) 5. Provision of seedlings and planting materials 6. Fuel-saving stove, solar heater, and bio-gas construction 7. Per diems of four researchers in the field (one at each site) 8. Four motorcycles or car rental (one at each site) 9. Staff time of all partners 	<p>Costs : US\$247,800</p> <p>Regular project progress report to UNU and consolidated project report to APFNet as well as monitoring missions</p>	<p>Assumption:</p> <p>Strong commitment and active participation of local communities</p> <p>Risks:</p> <p>Stable security of demonstration sites along the border areas, normal climate</p>
	<p>Activity 2.5 Alternative rural energy development, including bio-gas construction and improvement of energy efficiency stove at household level to reduce pressure on fuel wood collection.</p>			

	Intervention logic	Objectively verifiable indicators of achievement	Sources and means of verification	Assumptions/Risks
	<p>Component 3:Capacity building among different target groups, stakeholders and partners through the activities of training, workshop, study tours, information sharing and experiences exchange among project partners among China, Laos and Myanmar.</p> <p>Activity 3.1 On-site and in-house training/exchange to young researchers and students on interdisciplinary assessment of forest degradation and rehabilitation;</p> <p>Activity 3.2 Design and provision of training modules and toolkits on forest rehabilitation to train farmers, community leaders and extension workers and local officials with inputs of expert farmers in demonstration sites.</p>	<ol style="list-style-type: none"> 1. Field work of 12 young researchers (3 in each site) 2. Three training courses for graduate students,young researchers and practitioners (three local training courses) 3. Project advisory group (once per year) 4. Cross-site study tours (three times) 5. Consultants to prepare and teach modules and toolkits 6. international outreach workshop (one in Year 3) 7. Research facilities 8. Staff time of all partners 	<p>Costs : US\$135,000</p> <p>Regular project progress report to UNU and consolidated project report to APFNet</p>	<p>Assumption: Strong commitment and active participation of local communities and governments</p> <p>Risks: Stable security of demonstration sites along the border areas</p>
	<p>Component 4: Integrate project experience, indigenous and scientific knowledge and network with partners to develop a regional strategy for safeguarding the trans-boundary ecological security.</p>	<ol style="list-style-type: none"> 1. Project officer to prepare progress reports, organize workshops and maintain web site 2. Project steering committee (once per year) 3. External evaluation 4. Research facilities. 5. Staff time of all partners 	<p>Costs : US\$150,000</p> <p>Regular project progress report to UNU, project report to APFNet and evaluation report</p>	<p>Assumption: Strong commitment and cooperation of partners and stakeholders at local and sub-regional level</p>

	Intervention logic	Objectively verifiable indicators of achievement	Sources and means of verification	Assumptions/Risks
	<p>Activity 4.1 Synthesis of the project findings for up-scaling from local to sub-regional levels. The results from demonstration site will first inform sustainable forest management plan at the sub-district or township level. This will then serve as a model for the up-scaling at higher level with active participation of stakeholders who involve with the project to develop up-scaling plans, including inputs from external evaluation;</p> <p>Activity 4.2 Establishment of an information network among participating institutions to exchange relevant information and experiences. The network will be also linked to other relevant initiatives in the region. The information network would extend project findings beyond the sub-regional at larger scale.</p>			

Annex B: Project Work plan

Project Title: Sustainable Forest Rehabilitation and Management for the Conservation of Trans- boundary Ecological Security in Montane Mainland Southeast Asia – Pilot Demonstration Project of Lao PDR, Myanmar and China/Yunnan (SFR-MMSEA)

Project Activities	Year 1												Leading partner	
	1	2	3	4	5	6	7	8	9	10	11	12		
Overall management/M&E, etc														
Component 1: Interdisciplinary assessment and participatory planning for sustainable forest development														UNU, FRI, NAFRI, YAF
Activity 1.1 Basic field inventory of natural resources status to assess the threats and issues of forests degradation and biodiversity losses in pilot project sites														
Activity 1.2 Reviews of experiences and lessons on forest rehabilitation														
Activity 1.3 Participatory planning for sustainable forest managementat each project site														
Component 2: Experiment and demonstration for rehabilitation of degraded forests in pilot sites, including different approaches and methods														YAF, NAFRI, FRI, UNU
Activity 2.1 Prepare seedlings and planting materials of rare and endangered native tree species														
Component 3: Capacity building through the activities of training, workshop, study tours, information sharing and experience exchange among project partners in China, Laos and Myanmar														UNU, FRI, NAFRI, YAF

Project Activities	Year 1												Leading partner	
	1	2	3	4	5	6	7	8	9	10	11	12		
Activity 3.1 On-site and in-house training/exchange to young researchers and students on interdisciplinary assessment of forest degradation and rehabilitation														
Component 4: Integrate project experience, indigenous and scientific knowledge and network with partners to develop a regional strategy for safeguarding the trans-boundary ecological security.														UNU, YAF, NAFRI, FRI
Activity 4.1 Synthesis of the project findings for up-scaling from local to sub-regional and regional levels, including inception meeting of Project Steering Committee, and inputs from external evaluation														

Project Activities	Year 2												Leading partner
	1	2	3	4	5	6	7	8	9	10	11	12	
Component 2: Experiment and demonstration for rehabilitation of degraded forests in pilot sites, including different approaches and methods													YAF, NAFRI, FRI, UNU
Activity 2.1 Upland nurseries for preparing seedlings and planting materials of rare and endangered native tree species													
Activity 2.2 Soil improvement and rehabilitation of degraded forestland													
Activity 2.3 Upland agro-forestry based models, including understory cultivation													
Activity 2.4 Participatory social fencing for natural regeneration of degraded forests													
Activity 2.5 Alternative rural energy development, including bio-gas construction and improvement of energy efficiency stove at household level to reduce pressure on fuel wood collection													
Component 3: Capacity building among different target groups, stakeholders and partners through tailored made programmes													UNU, FRI, NAFRI, YAF
Activity 3.1 On-site and in-house training/exchange to young researchers and students on interdisciplinary assessment of forest degradation and rehabilitation													
Activity 3.2 Design and provision of training modules and toolkit on forest rehabilitation to train farmers, community leaders and extension workers and local officials.													

Project Activities	Year 2												Leading partner	
	1	2	3	4	5	6	7	8	9	10	11	12		
Component 4: Integrate project experience, indigenous and scientific knowledge and network with partners to develop a regional strategy for safeguarding the trans-boundary ecological security.														UNU, YAF, NAFRI, FRI
Activity 4.1 Synthesis of the project findings for up-scaling from local to sub-regional and regional levels, including Annual meeting of Project Steering Committee and inputs from external evaluation														
Activity 4.2 Establishment of an information network among participating institutions to exchange relevant information and experiences.														

Project Activities	Year 3												Leading partner	
	1	2	3	4	5	6	7	8	9	10	11	12		
Component 2: Experiment and demonstration for rehabilitation of degraded forests in pilot sites, including different approaches and methods														YAF, NAFRI, FRI, UNU
Activity 2.1 Upland nurseries for preparing seedlings and planting materials of rare and endangered native tree species														
Activity 2.2 Soil improvement and rehabilitation of degraded forestland														
Activity 2.3 Upland agro-forestry based models, including understory cultivation														
Activity 2.4 Participatory social fencing for natural regeneration of degraded forests														
Activity 2.5 Alternative rural energy development, including bio-gas construction and improvement of energy efficiency stove at household level to reduce pressure on fuel wood collection														
Component 3: Capacity building among different target groups, stakeholders and partners through tailored made programmes														UNU, FRI, NAFRI, YAF
Activity 3.1 On-site and in-house training/exchange to young researchers and students on interdisciplinary assessment of forest degradation and rehabilitation														

Project Activities	Year 3												Leading partner	
	1	2	3	4	5	6	7	8	9	10	11	12		
Activity 3.2 Design and provision of training modules and toolkit on forest rehabilitation to train farmers, community leaders and extension workers and local officials, including international outreach workshop.														
Component 4: Integrate project experience, indigenous and scientific knowledge and network with partners to develop a regional strategy for safeguarding the trans-boundary ecological security.														UNU, YAF, NAFRI, FRI
Activity 4.1 Synthesis of the project findings for up-scaling from local to sub-regional and regional levels, including final meeting of Project Steering Committee, and inputs from external evaluation														
Activity 4.2 Establishment of an information network among participating institutions to exchange relevant information and experiences.														

Annex C: Project budget by activity

Output/ Activity	Description	Funding source (US\$)		Total (US\$)	Year 1(US\$)		Year 2(US\$)		Year 3(US\$)	
		APFNet	EA (in kind)		APFNet	EA (in kind)	APFNet	EA (in kind)	APFNet	EA (in kind)
Output 1	Interdisciplinary assessment and participatory planning for sustainable forest development	87,200	30,000	117,200	87,200	30,000	0	0	0	0
Activity 1.1	Basic field inventory of natural resources status to assess the threats and issues of forests degradation and biodiversity losses in pilot project sites	32,200	12,000	44,200	32,200	12,000	0	0	0	0
Activity 1.2	Reviews of experiences and lessons on forest rehabilitation	19,000	6,000	25,000	19,000	6,000	0	0	0	0
Activity 1.3	Participatory planning for sustainable forest management at each project site	36,000	12,000	48,000	36,000	12,000	0	0	0	0
Output 2	Experiment and demonstration for rehabilitation of degraded forests in pilot sites, including different approaches and methods	205,800	42,000	247,800	20,632	3,360	101,762	22,260	83,406	16,380
Activity 2.1	Upland nurseries for preparing seedlings and planting materials of rare and endangered native tree species	81,760	16,800	98,560	20,632	3,360	27,464	6,720	33,664	6,720
Activity 2.2	Soil improvement and rehabilitation of degraded forestland	35,480	8,400	43,880	0	0	18,648	5,040	16,832	3,360

Activity 2.3	Upland agro-forestry based models, including understory cultivation	44,080	8,400	52,480	0	0	27,048	5,040	17,032	3,360
Activity 2.4	Participatory social fencing for natural regeneration of degraded forests	21,940	4,200	26,140	0	0	12,924	2,520	9,016	1,680
Activity 2.5	Alternative rural energy development, including bio-gas construction and improvement of energy efficiency stove at household level to reduce pressure on fuel wood collection	22,540	4,200	26,740	0	0	15,678	2,940	6,862	1,260
Output 3	Capacity building among different target groups, stakeholders and partners through tailored made programmes	93,000	42,000	135,000	32,480	12,600	28,100	19,800	32,420	9,600
Activity 3.1	On-site and in-house training/exchange to young researchers and students on interdisciplinary assessment of forest degradation and rehabilitation	46,300	21,000	67,300	32,480	12,600	13,820	8,400	0	0
Activity 3.2	Design and provision of training modules and toolkitson forest rehabilitation to train farmers, community leaders and extension workers and local officials.	46,700	21,000	67,700	0	0	14,280	11,400	32,420	9,600
Output 4	Integrate project experience, indigenous and scientific knowledge and network with partners to develop a regional strategy for safeguarding the trans-boundary ecological security.	114,000	36,000	150,000	38,000	9,360	38,000	9,360	38,000	17,280

Activity 4.1	Synthesis of the project findings for up-scaling from local to sub-regional and regional levels, including annual meeting of Project Steering Committee, including inputs from external evaluation	90,000	24,480	114,480	38,000	9,360	26,000	6,480	26,000	8,640
Activity 4.2	Establishment of an information network among participating institutions to exchange relevant information and experiences.	24,000	11,520	35,520	0	0	12,000	2,880	12,000	8,640
Grand total		500,000	150,000	650,000	178,312	55,320	167,862	51,420	153,826	43,260

Annex D: Project budget by component

Expenses	Unit	Grant			Counterpart fund in cash			Counterpart fund in kind			TOTAL
		# of units	Unit rate	Costs	# of units	Unit rate	Costs	# of units	Unit rate	Costs	
1. Inception funds (missions and time in kind to develop the project)	US\$							30 days	US\$200 per day	6,000	
Subtotal										6,000	6,000
2. Consultants	US\$										
2.1 Honoraria for PSC/PAG		6members per year (2each from YAF, NAFRI and FRI)	US\$300	5,400							
2.2 Honoraria for guest experts		3 experts per year	US\$400	3,600							
2.3 Fee for external evaluation (APFNet to manage)				30,000							
Subtotal				39,000							39,000
3. Management Staff	US\$										
3.1 Part-time field management staff		36 months	one staff per site at US\$200 per monthx 4 project sites	28,800							
3.2 Part-time project officer		36 months	one at US\$1,000 per month	36,000							

Expenses	Unit	Grant			Counterpart fund in cash			Counterpart fund in kind			TOTAL
		# of units	Unit rate	Costs	# of units	Unit rate	Costs	# of units	Unit rate	Costs	
3.3 Steering committee (4 members)								36 months	US\$1,000 per month	36,000	
Subtotal				64,800						36,000	100,800
4. Study tour & travel expenses	US\$										
4.1 Cross-site study tours		3 tours	US\$2,500 per tour	7,500				3 tours	US\$ 500 per tour	1,500	
4.2 Project monitoring (one mission per year)		3 missions	US\$3,600 per mission	10,800				3 missions	US\$500 per mission	1,500	
4.3 Technical assistance (one mission per year)		3 missions	US\$2,400 per mission	7,200							
Subtotal				25,500						3,000	28,500
5. Survey and field work	US\$										
5.1 Field assessment		4 project sites	US\$16,000 per site for YAF, US\$17,000 per site for NAFRI and FRI	66,000				4 sites	US\$6000	24,000	
5.2 Experimentation and demonstration		4 project sites	US\$ 41,900 per site for YAF, US\$45,400 per site for NAFRI and FRI	174,600				4 project sites	US\$10,500	42,000	
Subtotal				240,600						66,000	306,600

Expenses	Unit	Grant			Counterpart fund in cash			Counterpart fund in kind			TOTAL
		# of units	Unit rate	Costs	# of units	Unit rate	Costs	# of units	Unit rate	Costs	
6. Training & workshops	US\$										
6.1 PSC/PAG (one per year)		3 meetings	US\$ 16,000 per event	48,000							
6.2 Training courses (three local courses)		3 courses	US\$ 6,000 for one local course by YAF, and US\$ 4,900 for two local courses by NAFRI and FRI, respectively	15,800				3 courses	US\$ 1,000 per local course	3,000	
6.3 International outreach workshop		1 workshop	US\$20,000 by UNU with all partners	20,000							
Subtotal				83,800						3,000	86,800
7. Equipment	US\$										
7.1 Computer (per site)		4 project sites	US\$ 1,000 per site	4,000							
7.2 Digital camera/video camera/TV/solar heating systems/motorcycle (per site)		4 project sites	US\$ 2,000 per site	8,000							
7.3 Printer/scanner (per site)		4 project sites	US\$ 1,200 per site	4,800							
7.4 GPS (per site)		4 project sites	US\$ 500 per site	2,000							
Subtotal				18,800							18,800

Expenses	Unit	Grant			Counterpart fund in cash			Counterpart fund in kind			TOTAL
		# of units	Unit rate	Costs	# of units	Unit rate	Costs	# of units	Unit rate	Costs	
8. Flowing Materials (Consumables)	US\$										
8.1 Satellite image (per site)		4 project sites	US\$ 2,250 per site	9,000							
8.2 Lab analysis (per site)		4 project sites	US\$ 2,250 per site	9,000							
Subtotal				18,000							18,000
9. Office accommodation and administration	US\$										
9.1 Office rental costs (4 partners)								36 months	US\$ 250 per month per partner	36,000	
9.2 Office supplies & expenses (Stationery, utilities, phone etc.) (US\$62.5 for 36 months x 4 partners)		36 months	US\$ 250 per month	9,000							
9.3 Miscellaneous		Unexpected		500							
Subtotal				9,500						36,000	45,500
TOTAL	US\$			500,000						150,000	650,000

Annex E Project sites map and general information

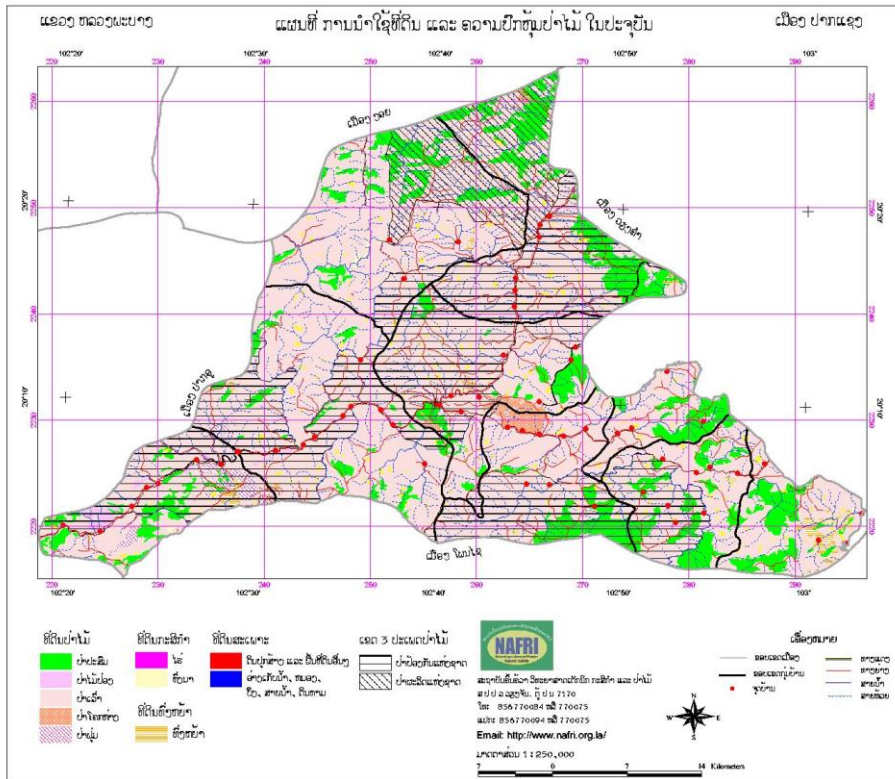
1. NATIONAL AGRICULTURE AND FORESTRY RESEARCH INSTITUTE (NAFRI), LAOS

Pakxeng District is located in Northeast of LuangPrabang Province. It is far from the city around 84 km with laying between 200°00'55"-200°27'06" and 1,020°18'40"-1,030°03'18". It is characterized by mountainous areas with steep slope, its elevation ranging is from 350-1000 meters (ASL). Total natural land area covers 139,450 hectares, out of which degraded fallow land occupied 77% of total area. Total population in Pakxeng District is about 22,627 persons, with 3 ethnic groups including 85% for Kheumu, 5% for Hmong, and 10% for Laolum. Shifting cultivation is predominant forms of agriculture.

Table: Land use of Pakxeng District, LuangPrabang Province

Land use	Land areas (ha)	% of total area
Forest	25,323	18
Degraded fallow land	109,450	77
Degraded grass land	1,343	1
Upland rice field	2,506	1,8
Low land rice field	224	0.15
Upland crops	601	0.45
Water body	555	0,40
Residential areas	394	0.30
Total	139.450	100

Figure: Land use of Pakxeng District, LuangPrabang Province



2. FOREST RESEARCH INSTITUTE OF MYANMAR (FRI), MYANMAR

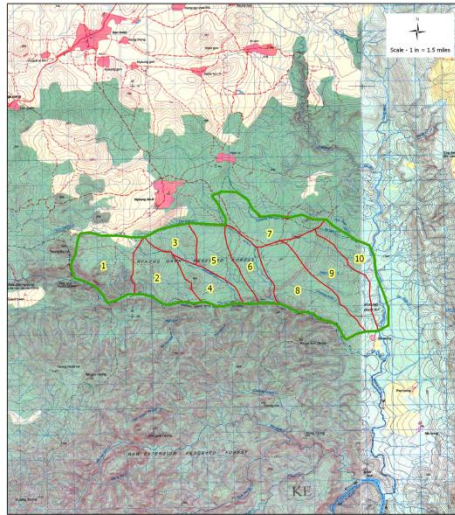
The topography of major Myanmar mountain ranges can roughly be divided into three regions, among them the Eastern Plateau mountain range bordering with

China, Laos and Thailand where this proposed project will be situated. The proposed project site will be located in Nawngkhio Township in Shan State. The basic conditions of the Township are described as follows:

Coordinates:	22°20'N 96°40'E
Division	ShanState
District	Kyaukme
Township	Nawngkhio
Capital	Nawngkhio
Total Area	488.44 sq mi (1,265.06 km ²)
Elevation	2,750 ft (840 m)
Population	126,143

The township lies between 22° 45' and 23° 15' north latitude and 96° 00' and 97° 00' east longitude. Nawngkhio Township is bordered by Thabeikkyin Township and Mogok Township to the north, Kyaukme Township to the northeast and east, Lawksawk Township to the south and Singu Township, Madaya Township, Pyinoolwin Township and Kyaukse Township to the west and southwest. Altitude ranges from 700 feet above the sea level in the lowest to 4300 feet in the highest with an average of 2750 feet. Occupying nearly half of the center of the land is highly productive plane surrounded by mountains in north, east, south and west. Mountains of the southern region are the highest. More than half of the surface area is covered by rain forests. Average number of raining days range from 90 to 130 days per year and annual rainfall varies from 47 to 70 inches. Thunder storms struck the area in the rainy season (May to October). Being in the temperate zone, the temperature varies from 43°-81°F in the cold season to 61°-96°F in the hot season. Nawngkhio Township was organized with the 6 wards and 35 village-tracks of 249 villages. The selected project site is NyaungDauk Reserve Forest area and NyaungDauk village, Nawngkhio Township. The location of the project site is showed in the following map:

MMSEA Pilot Demonstration Project Site



Legend
■ Nyaung Dauk Reserved Forest
□ Compartment



3. YUNNAN ACADEMY OF FORESTRY (YAF), CHINA

YAF will implement two project sites in Yunnan Province of China, one each in Xishuangbanna Prefecture close to Northern Laos and in Dehong Prefecture close to Northern Myanmar. Both sites include a YAF research & experimental station and several demonstration communities surrounding the experimental station so as to enhance collaboration between scientists and local communities. The location of both project sites is indicated on the map as below:

The first project site in Xishuangbanna Prefecture combines the Tropical forestry institute of YAF and two surrounding villages in Puwen, Jinghong City, Xishuangbanna Prefecture. Puwen town is located at 101 ° 23 ' E and 22 ° 33 ' N, 109 km to the north of Jinghong city. It is bounded on the east by Mengwang township, the south by Dadugang, the west by Jinna and the north by Nanpingtown of Pu'er city. Through the 213 road, Puwen is an important entry point from the rest of China to Xishuangbanna, known as "North Gate of Xishuangbanna". Puwen has good road connection and convenient communication with outside. The total population was 14,426 in 2008, of which agricultural population is 12,479. There are Dai, Han, Yi, Hani, Jino and other 13 ethnic groups. Puwen consists of 4 administrative villages including Chengzi, Chenggan, Manfeilong and Pojiao and 39 villager groups. The land area of Puwen is 554 square kilometers, among them the area of the plain in the basin is 38 square kilometers and the mountainous 516 square kilometers. The highest elevation is 1,292.3 m (Boluo Hill) and the lowest elevation is 222 meters (Puwen river). The climate type belongs to the north subtropical and plateau monsoon climate. The average annual temperature is 20.2 °C, the highest temperature is 39 °C and the average annual rainfall is 1675.6 mm. The natural conditions of soils, water and climate are well suitable for the growth of rice, rubber, sugar cane, tea, coffee, fruits and other economic crops. The municipal natural protection areas cover 7000 hectares. The forest coverage rate is 76.4%. The native vegetation of Puwen is tropical montane rain forest, valley rainforest and monsoon ever-green broadleaved forest.

Tropical forestry institute (TFI) was initiated as the Mengwang experimental forest farm in 1960. On the basis of the experimental forest farm, TFI was established by the relevant departments in 1996. TFI has 52 staff, including 15 professional and technical personnel (7 senior and intermediate, and 10 junior professional staff). TFI owns 6000 mu of all kinds of experimental forests and plantations. The lowest altitude is 840 m and the highest is 1,354 m. TFI is located at the junction of the north tropical and south subtropical zones with good climatic conditions and abundant plant resources. The annual average temperature is 20.2 °C, annual average precipitation 1673.5 mm, extreme low temperature -0.7 °C, extreme high temperature 38.5 °C, the average relative humidity 80%. The main vegetation types are montane rain forest, valley rain forest and monsoon evergreen broad-leaved forest. Soil type is laterite. Most soils are deep, light sandy loam.

As part of the project site in Xishuangbanna, Wandaohé and Lianhé villages surround the tropical forestry institute in Puwen. Wandaohé village consists of the

immigrants from Mojiang County at the end of the 70's. Currently there are about 290 villagers living in the village, most of them are Han, Hani and Yi nationalities. The income per capita was more than 6,000 Yuan last year. The village owns a total land area of 4000 mu (15 mu equal to 1 hectare), of which mainly are mountainous and only a small amount of paddy field. The main crops are rice and corn and the economic crops are rubber, tea and coffee. The main income comes from tea and coffee. As rubber plantation is still young, it has not become the main income. However, the villagers' income will increase considerably with the increasing area of tapping rubber trees. Lianhe village has about 140 villagers; most of them are Han, Dai, Hani and Jinuo nationalities. The village has land area of 3000 mu, most of which are mountainous and only a small amount of paddy field. The main crops are rice and corn and the main economic crops are rubber, tea and coffee. Rubber has been planted for long time in this villager and the prices of coffee and rubber are rather high in recent years. As a result, the income per capita has more than 10,000 Yuan last year.

The second project site in Dehong Prefecture combines Dehong Prefecture Forestry Research Institute, Santaishan township and Mangshi 818 Bamboo Farmers Professional Cooperative in the township. Dehong Prefecture Forestry Research Institute, a new branch of YAF in Dehong, is situated in Mengmao town, 7 km away from Ruili. The institute mainly undertakes experiment, demonstration and extension services for forestry development. There are 40 staffs working in the institute, including 17 scientific professional personnel, 23 technical workers. The institute has a land area of 8,715 mu. It is funded by government and under Dehong Prefecture Bureau of Forestry. Recently, the institute has carried out projects on "Breeding of rare and valuable timber species in Dehong", on "Breeding of fast-growing and high-quality tree species in Southwest Yunnan", etc.

Santaishan, the only township for De'ang ethnic minority in China, is located 22 kilometers to the southwest of Mangshi along the 320 road in Dehong Prefecture, Yunnan Province. Santaishan covers land areas of 158 square kilometers with four village committees, and 31 natural villages and 34 village groups. The main inhabitants in Santainshan are De'ang, Jingpo and Han ethnic groups. There is a total population of 1,631 households with 6,907 people, of which there are 19 De'ang minority village groups and totally 981 households with 4,111 people; 7 Jingpo village groups and 291 households with 1,192 people; 8 village groups of Han people and 359 household with 1,604 people. The entire township of Santainshan has arable land areas of 39,799 mu, of which: paddy fields 4,154 mu, upland fields 35,645 mu. The arable land per capita is 5.76 mu, among them: paddy field 0.6 mu, upland 5.16 mu. The forest land areas are 89,973.1 mu. The forest coverage rate is 63%. In 2010 the per capita net income of local farmers was RMB2,489, and the per capita grain production 342 kg. Mangshi 818 Bamboo Farmers Professional Cooperative is located in Santaishan Township. The Cooperative covers land areas of 40,000 mu in the elevation of 800 to 1000m. The main soil type is laterite. The main bamboo species cultivated and managed in the Cooperative include *Dendrocalamus giganteus*, *Dendrocalamus peculiaris* Hsueh, *Dendrocalamus brandisii*, *Dendrocalamus affinis*.

Annex F Capacity assessment of the project executing agency and partnership organizations

1. UNITED NATIONS UNIVERSITY (UNU)

History and Mandate

The United Nations University (UNU) was established with adoption of its Charter by the United Nations General Assembly in 1973. The mission of the United Nations University is to contribute, through collaborative research and education, dissemination and advisory services, to efforts to resolve the pressing global problems of human survival, development and welfare that are the concern of the United Nations, its Peoples and Member States. The overarching goal of the United Nations University is to contribute to global sustainable development. In doing so, UNU pays due attention to the social sciences and the humanities as well as the natural sciences.

The academic work of the United Nations University is carried out by a worldwide system of research and training institutes and programmes. The UNU Institute for Sustainability and Peace (UNU-ISP) in Tokyo seeks to achieve and promote a better understanding of three of the most pressing issues on the UN agenda: global change, peace and security, and development. UNU-ISP takes an innovative approach to sustainability, bridging these cross-cutting themes through research, educational and collaborative initiatives with the aim of solving current problems and anticipating future challenges.

Personnel

As of year-end 2010, the global UN University system had staff of 576.

Relevant projects have included:

- Project on People, Land Management and Environmental Change (Yunnan Province of China, Thailand, Papua New Guinea, Tanzania, Kenya, Uganda, Ghana, Guinea, Brazil, Peru, Jamaica and Mexico) funded by GEF through UNEP
- Project on Sustainable Land Management in Mountainous Regions: Thailand, Lao PDR and China (Yunnan Province) funded by GEF through UNEP
- Project on Critical analysis of effectiveness of REDD+ for forest communities and shifting cultivation, based on lessons learnt from conservation efforts in Laos and Thailand funded by APN (Asia-Pacific Network for Global Change Research)
- Project on Land use management for sustainable agriculture and forest conservation in the mountainous areas of Laos funded by the Mitsui Environment Fund
- Strategy to enhance resilience to climate and ecosystem changes utilizing traditional bio-production systems in rural Asia (Indonesia, Sri Lanka and Viet Nam) funded by Ministry of Environment, Japan.
- Project on Developing eco-system based adaptation strategies for enhancing resilience of rice terrace farming systems against climate change (Philippines and Yunnan Province of China) funded by APN

2. NATIONAL AGRICULTURE AND FORESTRY RESEARCH INSTITUTE, LAO PDR

History and Mandate

The National Agriculture and Forestry Research Institute (NAFRI) was established in 1999 in order to consolidate agriculture and forestry research activities within Laos and develop a coordinated National Agriculture and Forestry Research System.

NAFRI is mandated to undertake integrated agriculture, forestry and fisheries research in order to provide technical information, norms and results which help to formulate strategy in accordance with the government policies. NAFRI has four main functions including carrying out adaptive research, developing methods, tools and information packages, providing policy feedback, and coordinating and managing research. Over the last 7 years, NAFRI has significantly improved its capacity to provide a range of service to Laos (e.g. extension, farmers, NGOs) and international agencies (donors, research and development organizations).

Personnel

NAFRI is currently comprised of 11 research centres based around Laos and three research support division based at the NAFRI Headquarters.

Relevant projects have included:

NAFRI research program focuses on three interlinked areas: improving efficiency in agriculture production, improving land use and land management processes and feeding back the impacts of rapid agrarian change to policy makers at different levels. There are 5 research thrusts with 23 research areas in total as follows:

- Project on Maximizing return per land unit through productivity improvement
- Project on Improving land use planning and management procedures
- Project on Improving enabling environment and mechanisms to support agriculture and forestry production for increased land use effectiveness
- Project on Marketing and quality requirements for agriculture and forestry products
- Project on Sustainable management, utilization and conservation of natural resources

Key Partners Involved in the Project and their Respective Roles

STAKEHOLDERS	ROLE/S
NAFRI and/or Agriculture Land Use Research Centre	NAFRI will be the main executing agency for this project. It is identified that the “Agriculture Land Use Research Centre”. This centre will focal agency in its role as implementing focal agency in Lao PDR. They will be primarily responsible to ensure that project outcomes and outputs are achieved.
LuangPrabang PAFO and DAFO	The Provincial Agriculture and Forestry Office of LuangPrabang Province. They will guide the District Agriculture and Forestry Offices for the actual field implementation of project activities
Northern Agriculture and Forestry Research Centre (NAFReC)	The role of NAFReC is to support the work of Provincial and District levels such as organising staff training and providing technical information in accordance with the needs of farmers.

Souphanouvong University in LuangPrabang	Faculty of Forestry in the Souphanouvong University will be involved in relevant capacity building activities for government staff and local communities
Local communities	The project will work closely with local communities. At least 300 households will be directly benefiting from this project.
International Organizations, GOs and NGOs	The project will work closely with French Research Institute for Development (IRD), CIFOR, which are two international agencies working in LuangPrabang Province. The project will build on the work that they are undertaking and will ensure that there is strong coordination and cooperation with their work in the province. The project will also ensure strong coordination and cooperation with non-profit organizations operating in the project area.

3. FOREST RESEARCH INSTITUTE (FRI), MYANMAR

1) Background:

Name: Forest Department, Myanmar

Location: Nay Pyi Taw

Year of establishment: 1856

Fields of expertise: Expertise in all forestry fields are available especially, natural forest management, plantation establishment, etc.

2) Infrastructure:

FRI has facilities for carrying out the work related to the project proposal, such as laboratories, experimental facilities, training facilities, etc.

3) Personnel:

Total number of personnel in relevant fields is as follows:

- Number of personnel with postgraduate degrees 89
- Number of personnel with graduate degrees 3356
- Number of personnel with middle-level technicians 2888
- Number of administrative personnel 134

4. YUNNAN ACADEMY OF FORESTRY, YUNNAN

History and Mandate

The YAF is the center of forest research in Yunnan Province. It is a comprehensive and professional forestry institute engaged in study of varied fields related to forestry. Yunnan Academy of Forestry has complete facility and professional staff who can sufficiently meet the forestry requirements. It is composed of several research sections and experimental stations, namely Institute of Forestry, Institute of Forest Protection, Institute of Economic Forest, Institute of Tropical Forestry, Institute of Forest Product Industry, Institute of Forestry Information, Kunming Arboretum, Tropical Arboretum of Xishuangbanna, Yangbi Institute of Walnut, and Research Station of Guangnan.

Personnel

The number of staff in Yunnan Academy of Forestry is 260, among whom 178 were professional staff. Forty-two of them have professional titles of research fellow or associate research fellow.

Relevant projects included:

Since the establishment in 1959, Yunnan Academy of Forestry has accomplished almost 400 forest research projects through multiple channels of funding, such as Ministry of Science and Technology, State Forestry Administration, Yunnan Department of Science and Technology and some international funding agencies as well. Yunnan Academy of Forestry hosts Yunnan Laboratory for Conservation of Rare, Endangered & Endemic Forest Plants, Public Key Laboratory of the State Forestry Administration, and Yunnan Provincial Key Laboratory of Cultivation and Exploitation of Forest Plants.

Annex G Curriculum Vitae of Project Management Board and Technical Assistance Partners

UNITED NATIONS UNIVERSITY

PERSONAL DETAILS

- ☐ **Full Name and Title:** Kazuhiko Takeuchi, Vice-Rector, UNU; and Director, UNU-ISP
- ☐ **Date of Birth:** June 19, 1951
- ☐ **Nationality:** Japanese
- ☐ **Institution:** United Nations University
- ☐ **Contact Details (telephone, facsimile and email):** TEL:+81-(0)3-5467-1212 ; FAX:
+81-(0)3-3406-7347
E-MAIL: takeuchi@unu.edu

PROFILE

Vice Rector Takeuchi's research is dedicated to creating eco-friendly environments for the harmonious coexistence of man and nature, both on the local and global scale. He is keenly interested in the restoration of ecosystem and effective utilization of environmental resources in Japan. Revitalization of traditional rural landscapes locally called *Satoyama* integrating agriculture and forestry is one of his major concerns. He also conducts extensive field research on combating desertification in China and Mongolia, on sustainable biological resources management system in Indonesia, and landscape planning in the Asian mega-cities. He has recently initiated the research project on reconstruction of historic gardens and historic landscape planning in Italy.

EDUCATION

Doctorate of Philosophy (Agriculture) Graduate School of Agriculture, The University of Tokyo	1980
Master of Science Department of Agrobiological, Graduate School of Agriculture, The University of Tokyo	1976
Bachelor of Science Department of Geography, Faculty of Science, The University of Tokyo	1974

EXPERIENCE

Director , United Nations University Institute for Sustainability and Peace (UNU-ISP)	January 2009-present
Chairman , Sound Material Society Committee, Central Environment Council, Japan Government	2008-Present
Vice-Rector , United Nations University	July 2008-present
Vice President for International Relations , The University of Tokyo, and Executive Representative for the University of Tokyo Beijing Office	April 2007-June 2008
Deputy Executive Director , Integrated Research System for Sustainability Science (IR3S), The University of Tokyo	August 2005-present
Special Adviser to the President , The University of Tokyo	April 2005-June 2008
Director , Asian Natural Environmental Science Center, The University of Tokyo	April 2004-September 2005
[Academic/professional societies]	
President , Japanese Institute of Landscape Architecture	May 2009- present
President , The City Planning Institute of Japan	May 2008-May 2010
Present Editor-in-Chief , <i>Sustainability Science</i> (Springer)	October 2006
President , Rural Planning Association	April 2004-April 2006
Trustee , Center for Environmental Information Science	2003-present
Managing Director , The City Planning Institute of Japan	May 2003-May 2010

Director, Japanese Institute of Landscape Architecture

May2003-present

[Committees]

- ❑ Member of the Central Environment Council, Government of Japan
- ❑ Former Member of the Group of Experts, Committee on Science and Technology, United Nations Convention on Combating Desertification (UNCCD)

PUBLICATIONS

[Books] in last ten years

- Duraiappah K. A., Nakamura K., **Takeuchi K.**, Watanabe M. and Nishi M. 2012. Satoyama-Satoumiecossystems and human well-being: Socio-ecological production landscapes of Japan. United Nations University Press, 480pp.
- Seguchi R., Brown R.D., and **Takeuchi K.** 2007. Land use change from traditional to modern eras: Saitama prefecture, Japan S.K. Hong, N. Nakagoshi, B. Fu, Y. Morimoto, and J. Wu (eds.): Landscape ecological applications in man-influenced areas - Linking man and nature systems. Springer Tokyo, 113-128pp.
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- Harashina K., **Takeuchi K.** and Arifin H.S. 2003. Toward restructuring for sustainable regional ecosystems in the humid tropics. Hayashi Y., Syafrida M. and Hartono S. eds.: Sustainable Agriculture in Rural Indonesia. GadjahMada University Press, 369-390.
- Murakami A., **Takeuchi K.**, Tsunekawa A. and Zain A.M. 2002. Trends in special extension and land-use mixture in Metro Manila. Ohmachi T. and Roman E.R. eds.: Metro Manila in search of a sustainable future: Impact analysis of metropolitan policies for development and environmental conservation. University of the Philippines Press, 174-184.

[Peer reviewed Papers in Journals / proceedings] in the last five years

- Sasaki T., Okuro T., Undarmaa J. and **Takeuchi K.** 2012. Changes in the herbage nutritive value and yield associated with threshold responses of vegetation to grazing in Mongolian rangelands. *Grass and Forage Science*. (in press)
- Okayasu T., Okuro T., Undarmaa J. and **Takeuchi, K.**2012. Degraded rangeland dominated by unpalatable forbs exhibits large-scale spatial heterogeneity. *Plant Ecology*. (in press)
- Jiao Y., Li X., Liang L., **Takeuchi K.**, Okuro T., Zhang D. and Sun L. 2012. Indigenous ecological knowledge and natural resource management in the cultural landscape of China's Hani Terraces. *Ecological Research*, 27: 247-263.
- Han J., Fontanos P., Fukushi K., Herath S., Heeren N., Naso V., Cecchi C., Edwards P. and **Takeuchi K.**2012. Innovation for sustainability: toward a sustainable urban future in industrialized cities. *Sustainability science* 7: 91-100.
- Okubo S., Tomatsu A., Parikesit M.D., HarashinaK. and **Takeuchi K.** 2012. Leaf functional traits and functional diversity of multistoried agroforests in West Java, Indonesia. *Agriculture, Ecosystems and Environment* 149,91-99.
- Okayasu T, Okuro T, Undarmaa J, **Takeuchi K.**2012. Inherent density-dependency of wet-season range even at the extreme of nonequilibrium environments. *Journal of Arid Environments*,78: 144-153.

- Koyanagi T., Kusumoto Y., Yamamoto S., Okubo S., Iwasaki N. and **Takeuchi K.** 2012. Grassland plant functional groups exhibit distinct time-lags in response to historical landscape change. *Plant Ecology*, 213:327-338.
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- Miyasaka T., Okuro T., Zhao H., Zhao X., Zuo X. and **Takeuchi K.** 2011. Impacts of the local land-use system in a semi-arid region of northeastern China on soil prosperities, crop growth, and weed communities. *Journal of Arid Environments*, 75: 1155-1163.
- Okubo S., Parikesit M.D., Harashina K., **Takeuchi K.** and Umezaki M. 2010. Land use/cover classification of a complex agricultural landscape using single-dated very high spatial resolution satellite-sensed imagery. *Canadian Journal of Remote Sensing*, 36(6): 722-736.
- Sasaki T., Okubo S., Okayasu T., Jamsran U., Okuro T. and **Takeuchi K.** 2010. Indicator species and functional groups as predictors of proximity to ecological thresholds in Mongolian rangelands. *Plant Ecology*, 212: 327-342.
- Yoshihara Y., Sasaki T., Okuro T., Jamsran U. and **Takeuchi K.** 2010. Cross-spatial-scale patterns in the facilitative effect of shrubs. *Ecological Engineering*, 36: 1719-1724.
- Okubo S., Parikesit H.K., Muhamad D., Abdoellah O.S., and **Takeuchi K.** 2010. Traditional perennial crop-based agroforestry in West Java: The tradeoff between on-farm biodiversity and income. *Agroforestry Systems*, 80(1): 17-31.
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- Okayasu T., Okuro T., Jamsran U. and **Takeuchi K.** 2010. Impact of the spatial and temporal arrangement of pastoral use on land degradation around animal concentration point. *Land Degradation & Development*, 21: 1-16.
- Yoshihara Y., Okuro T., Buuveibaatar B., Undarmaa J. and **Takeuchi K.** 2010. Complementary effects of disturbance by livestock and marmots on the spatial heterogeneity of vegetation and soil in a Mongolian steppe ecosystem. *Agriculture, Ecosystems & Environment*, 135:155-159.
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- Yoshihara Y., Okuro T., Buuveibaatar B., Undarmaa J. and **Takeuchi K.** 2010. Clustered animal burrows yield higher spatial heterogeneity. *Plant Ecology*, 206: 211-244.
- Yoshihara Y., Okuro T., Buuveibaatar B., Undarmaa J. and **Takeuchi K.** 2010. Responses of vegetation to soil disturbance by Siberian marmots within a landscape and between landscape positions in Hustai National Park, Mongolia. *Grassland Science*, 56: 42-50.
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- Kumar B.M. and **Takeuchi K.**2009. Agroforestry in the Western Ghats of peninsular India and the satoyama landscapes of Japan: a comparison of two sustainable land use systems. *Sustainability Science*, 4: 215-232.
- Hosino A., Fujimaki H., Jamsran U. and **Takeuchi K.**2009. Comparing drought and salinity tolerances of two dominant grass species in Mongolia. *Proceedings of Soil Moisture Workshop*, June 2009: 41-45.
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- Sasaki T., Okayasu T., Jamsran U. and **Takeuchi K.**2008. Threshold changes in vegetation along a grazing gradient in Mongolian rangelands. *Journal of Ecology*, 96: 145-154.
- Hara Y., Thaitakoo D. and **Takeuchi K.**2008. Landform transformation on the urban fringe of Bangkok: the need to review land-use planning processes with consideration of the flow of fill materials to developing areas., *Landscape and Urban Planning*, 84 : 74-91.
- Sasaki T., Okayasu T., Shirato Y., Jamsran U., Okubo S. and **Takeuchi K.**2008. Can edaphic factors demonstrate landscape-scale differences in vegetation responses to grazing? *Plant Ecology*, 194: 51-66.
- Ichikawa K., Okayasu T. and **Takeuchi K.**2008. Characteristics in the distribution of the woodland vegetation in the southern Kanto region since the early 20th century. *Journal of Environmental Information Science*, 36(5): 103-108.
- Okayasu T., Nakamura H. and **Takeuchi K.**2008. Possible countermeasures to counter desertification and drought in a desert-steppe region of Mongolia. *Journal of Environmental Information Science*, 36(5): 141-150.
- Hara Y., **Takeuchi K.**, Palijon A.M. and Murakami A. 2008. Landfill development in the urban fringe of Metro Manila. *GeoJournal*, 71: 127-141.
- Yamada S., Okubo S., Kitagawa Y. and **Takeuchi K.**2007. Restoration of weed communities in abandoned rice paddy fields in the Tama Hills, central Japan. *Agriculture Ecosystems & Environment*, 119: 88-102.
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- Hara Y., Ogasawara T. Palijon A.M. and **Takeuchi K.**2007. Quantitative and qualitative characteristics of greenery in suburban residential districts of Metro Manila. *Proceedings, International Symposium on City Planning*, 2007: 418-427.

PERSONAL DETAILS

- Full Name and Title:** Luohui Liang, Academic Programme Officer
- Date of Birth:** September 29, 1963
- Nationality:** Chinese
- Institution:** United Nation University, Institute of Sustainability and Peace
- Contact Details (telephone, facsimile and email):** Tel. +81-3-5467-1371, Fax.+81-3-3499-2828, Email:liang@unu.edu

PROFILE

Skilled research is focused on approaches to sustainable land management. The past research work concerned with improving land management at regional level through developing a master land use plan at different levels of government jurisdiction. Current research is concentrated on achieving sustainable land management through identification of good management practices of land resources (biodiversity, forest, soil and water resources) at household and community levels and integration of these good practices with the implementation of the sustainable development policy, especially in the mountainous regions.

EDUCATION

- | | |
|---|------|
| Diploma Course of Land Use Planning | 1993 |
| <i>School of Urban and Regional Planning, University of the Philippines in Diliman, Philippines</i> | |
| Research topic: Land Use Planning | |
| Master of Science | 1987 |
| <i>Institute of Geography, Chinese Academy of Science, Beijing, China</i> | |
| Thesis topic: Karst landform between the Yangtze and the Qin River, China | |
| Bachelor of Science | 1984 |
| <i>Department of Geography, Peking University, Beijing, China</i> | |
| Achievements: Award of Excellent Graduate in 1984 | |

EXPERIENCE

- Current Position: Academic Programme Officer** January 2009-present
Global Change and Sustainability Programme
Institute for Sustainability and Peace, United Nation University, Tokyo, Japan
- Coordinate Project on Critical analysis of effectiveness of REDD+ for forest communities and shifting cultivation, based on lessons learnt from conservation efforts in Laos and Thailand funded by APN
 - Coordinate Project on Land use management for sustainable agriculture and forest conservation in the mountainous areas of Laos funded by the Mitsui Environment Fund
 - Offer lecture for the UNU Postgraduate Program and regular training in the institution, served advisor for UN course
 - Research on agro biodiversity management and sustainable forest management in southwest China, on agricultural system and forest management in Indian Himalaya and on forest management and shifting agriculture in northern Lao PDR and Northern Thailand.
 - Coordinate research and postgraduate programme in several other Asian economies and in a number of North Africa economies
 - Participate in Project on Developing eco-system based adaptation strategies for enhancing resilience of rice terrace farming systems against climate change (Philippines and Yunnan Province of China) funded by APN

Academic Programme Officer

March 2002-December 2008

Environment and Sustainable Development Programme, United Nation University, Tokyo, Japan

Lecturer and research fellow

- Coordinated Project on Sustainable Land Management in Mountainous Regions: Thailand, Lao PDR and China (Yunnan Province) funded by GEF through UNEP
- Gave lecture on sustainable land management through identification of good management practices of land resources in Mountainous Region of Mainland Southeast Asia.
- Supported the research work for several PhD and Master students at partner universities in India, China, Thailand of UNU project on Sustainable Land Management
- Coordinated the joint Master's Degree Programme on integrated dry lands management through cooperation between UNU and partner institutions in China, Italy, Japan, Syria and Tunisia
- Carried out research on achieving sustainable land management

April 1998-February 2003

Managing Coordinator

People, Land Management and Environmental Change (PLEC), United Nation University, Tokyo, Japan

- Coordinated the PLEC Project which identified and promoted sustainable approaches to biodiversity management in Yunnan Province of China, Thailand, Papua New Guinea, Tanzania, Kenya, Uganda, Ghana, Guinea, Brazil, Peru, Jamaica and Mexico funded by GEF through UNEP
- Coordinated the Master's Degree Programme on integrated drylands management between UNU and partner institutions
- Offered a guest lecture to the course work and supported the research work by developing the formats of and reviewing the research proposal and theses

November 1996-March 1997

Land Use Planning Officer

Yunnan Province Department of Land Resources, Kunming, China

- Held pilot research and training on land use planning at township, county and prefecture levels
- Coordinated land use planning at the provincial level
- Gave lecture on land use planning at Kunming University of Science and Technology

September 1995-October 1996

Honorary Research Fellow

Department of Land Economy, University of Aberdeen, Aberdeen, United Kingdom (under study leave from Yunnan Province Department of Land Resources)

- comparative study on land management system between China and other parts of the world

PUBLICATIONS

Selected Peer-Reviewed Papers

- Jiao, Y., Li, X., **Liang, L.**, Takeuchi, K. Okuro, T., et al. 2012. "Indigenous ecological knowledge and natural resource management in the cultural landscape of China's Hani Terraces", *Ecological Research* (2012) 27: 247-263
- Takahashi, S. and **Liang, L.** 2010. "Implications of Policy Interventions for Land Use Changes and Local Livelihoods in Lao PDR." *Policy Matters* No. 18, IUCN, 2010.
- Liang L.**, Shen L., Yang W., Yang X., and Zhang Y. 2009. Building on traditional shifting cultivation for rotational agroforestry: Experiences from Yunnan, China. *Forest Ecology and Management* 257 (2009) 1989-1994.
- Sharma G., **Liang L.**, Sharma E., Subba J.R., and Tanaka K. 2009. Sikkim Himalayan-Agriculture: Improving and scaling up of the traditionally managed agricultural systems of global significance. *Resources Science*, 2009, 31(1): 21-30
- Min, Q., Sun, Y., van Schoubroeck, F., **Liang, L.**, Dela Cruz, M. J., 2009. The GIAHS -Rice- Fish Culture: China Project Framework, *Resources Science*, 2009, 31 (1): 10-20
- Liang, L.** 2004. Mountains and the International Year of Rice: The Role of the UNU in Advancing Research

- and Capacity Development, *Mountain Research and Development* Vol.24 No. 2: 74-175
- Yang, Z., **Liang, L.**, Liu Y. and He, Y. 2004. Land Use Change During 1960-2000 Period and its Eco-environmental Effects in the Middle and Upper Reaches of the Yangtze River: A Case Study in Yiliang County, Yunnan, China, *Journal of Mountain Science* Vol 1 No 3 (2004): 250-263.
- Liang, L.** 2002. Promoting agrodiversity: the case of UNU project on people, land management and environmental change (PLEC). *Global Environmental Change* 12 (2002): 325-330.
- Liang, L.**, Stocking, M., Brookfield, H., and Jansky, L., 2001. Biodiversity conservation through agrodiversity. *Global Environmental Change* 11(1): 97-101.

Selected Books/Books Chapters

- K.G. Saxena, **Luohui Liang**, Koji Tanaka and Shimako Takahashi (eds), 2012. "Land Management in Marginal Mountain Regions: Adaptation and Vulnerability to Global Change". Bishen Singh Mahendra Pal Singh, Dehra Dun, India.
- Lim, H., **Liang, L.**, Camacho, L., Combalicer, E. & Singh, S. "Traditional Forest Knowledge and Sustainable Forest Management in Southeast Asia" in *Traditional Forest-Related Knowledge: Sustaining Communities, Ecosystems and Biocultural Diversity* edited by John A. Parrotta and Ronald L. Trosper. Springer, 2011.
- Liang L.**, Sengtaheuanghoung O., and Takahashi S. 2010. Land use change, cause and consequence in Montane Mainland Southeast Asia: A case study in northern Laos. Meeting on "Climate Change Challenges in Transboundary Basins: Role of Sciences", CECAR Series No.4, UNU-ISP, Tokyo, Japan.
- Jansky L., Pachova N and **Liang L.** 2009. Balancing biodiversity conservation with community livelihoods in the Pamir-Alai Mountains in central Asia. In Sharma, E. (ed). Proceedings of "The International Mountain Biodiversity Conference". International Centre for Integrated Mountain Development, Kathmandu, Nepal.
- Saxena K.G., **Liang L.** and Rerkasem K. (eds.) 2007. Shifting agriculture in Asia: Implications for environmental conservation and sustainable livelihood. Dehra Dun, India: Bishen Singh Mahendra Pal Singh.
- Shen L. and **Liang L.** 2007. The alder-based rotation and inter-cropping systems in Yunnan, China. In Saxena K.G., Liang L. and Rerkasem K. (eds.), 2007. "Shifting Agriculture in Asia: Implications for Environmental Conservation and Sustainable Livelihood". Dehra Dun, India: Bishen Singh Mahendra Pal Singh.
- Saxena K.G., **Liang L.**, Kono Y., and Miyata S. (eds.). 2006. Small-scale livelihoods and natural resources management in marginal areas: Case studies in monsoon Asia. Dehra Dun, India: Bishen Singh Mahendra Pal Sin.
- Yang, Z. and **Liang, L.**, 2004. Traditional Land Use for Sustainable Land Use: The Case of Yunnan Province, China, in Human Settlement Development, edited by Saskia Sassen, in *Encyclopedia of Life Support Systems* (EOLSS), Developed under the auspices of the UNESCO, Eolss Publishers, Oxford, UK.

PERSONAL DETAILS

- ❑ **Full Name and Title:** Hiroko Kuno, Administrative and Programme Support Coordinator
- ❑ **Date of Birth:** December 28, 1958
- ❑ **Nationality:** Japan
- ❑ **Institution:** United Nations University Institute for Sustainability and Peace
- ❑ **Contact Details (telephone, facsimile and email):** Tel.+81-3-5467-1255;
Fax.+81-3-3406-7347; +81-3-3499-2828; Email: nakazawa@unu.edu

PROFILE

Experienced in supporting management of research and project funds; organization of conferences, meetings, forums in administrative matters. The current position involves monitoring and management of various project funds, supported by external funding organizations, especially in the field of environment and sustainable development. (List of projects attached for which the administrative assistances have been provided).

EDUCATION

Bachelor of Arts

Department of English, Faculty of Foreign Languages, Dokkyo University 1977-1981
Saitama, Japan

EXPERIENCE

Current Position: Administrative and Programme Support Coordinator January 2010-present
Institute for Sustainability and Peace, United Nations University, Tokyo, Japan

Administrative Assistant December 2001-December 2009

*Environment and Sustainable Development Programme,
United Nations University, Tokyo, Japan*

Administrative Assistant January 1998-December 2001

Academic Division, United Nations University, Tokyo, Japan

Secretary September 1991-December 1997

Academic Division, United Nations University, Tokyo, Japan

Secretary July 1990- August 1991

Adia Central Ltd., Tokyo, Japan

Secretary April 1990-June 1990

CH Projects Management Ltd., Tokyo, Japan

Typist September 1989-March 1990

Sigma Staff Co., Ltd., Tokyo, Japan

Translator February 1989- August 1989

Front Inc., Tokyo, Japan

Secretary to the General Manager July 1985-June 1987

Boliden Japan Co., Ltd., Tokyo, Japan

Secretary to the Vice President April 1981-July 1985

Fuji Tennant Ltd., Tokyo, Japan

PERSONAL DETAILS

- ☐ **Full Name and Title:** Jintana Kawasaki, Researcher
- ☐ **Date of Birth:** August 24, 1973
- ☐ **Nationality:** Thai
- ☐ **Institution:** United Nations University, Institute for Sustainability and Peace, Tokyo, Japan
- ☐ **Contact Details (telephone, facsimile and email):** Tel.+81-3-5467-1326, Fax. +81-3-3406-7347,
Email: jkawasaki@unu.edu

PROFILE

Skilled research agricultural economics with doctorate in economic assessment of agricultural production under climate change and food security. Strong background in agricultural economics research and experienced in economics assessment of agricultural production and rural development in the Southeast Asia. Current research conducts simulation studies to assess impacts of climate change on rice yield and its economic assessment in Thailand.

EDUCATION

- Doctorate of Philosophy** 2009
Tokyo University of Agriculture
Dissertation topic: Economic study of organic vegetable production in Chiang Mai, Thailand
- Master of Science** 1998
Kasetsart University
Thesis topic: Effect of Trade Measures on Frozen Shrimps Exports of Thailand
- Bachelor of Science** 1996
KhonKaen University
Achievements: Economic study of agricultural production in farm level of KhonKaen, Thailand

EXPERIENCE

- Current Position: Researcher** 2009-present
United Nations University, Institute for Sustainability and Peace
Research on following subjects;
 - Economic impacts assessment of climate change on agricultural production in Thailand.
 - Contribution of organic farming to food security.Project assistance for UNU-ISP project on *Comparative Studies on Development Strategies Considering Impacts of Adaptation to Climate Change (CSDS-IACC)*. On this subjects.
 - Assist project on the planning, budgeting, organization and preparation of events such as meeting, workshops, and conferences.
 - Prepare project reporting including workshop reporting, financial reporting, and project reporting.Training and Consulting on relevant subjects;
 - Economic impacts assessment of climate change.
 - Economic efficiency of organic farming contributed to food security in rural area.
- Lecturer** 2002- 2007
KhonKaen University, Faculty of Agriculture, Department of Agricultural Economic, KhonKaen Province, Thailand
 - Teaching and consulting for undergraduate students.
 - Researching with both of domestic and international projects in terms of production efficiency, farm income and environmental and social impact, and sustainability assessment of small size farming.

Lecturer

2000 - 2002

Kasetsart University – Chalermprakiat Sakonnakhon Province Campust, Faculty of Liberal Art and Science Management, Sakonnakhon Province, Thailand Field trial, interview and field survey.

- Teaching and consulting for undergraduate students.
- Researching focused on rural development and sustainability assessment of agricultural production for poor farmers in rural of Thailand.

Research Assistant in the project on *Development of Sustainable Agriculture in Thailand*

1996-2000

Kasetsart University, Faculty of Economics, Department of Agricultural and Resource Economics.

Research on following subjects;

Development of sustainable agriculture in Thailand.

Sustainable economic development through the sufficiency economic and resource management in Thailand.

Researching assistance for this project. On this subjects.

Field trial, interview and field survey.

Data collection and analysis.

PUBLICATIONS**Doctoral Dissertation**

Kawasaki, J. and Fujimoto, A. 2009. Sustainability Assessment of Organic Vegetable Cultivation in Chiang Mai, Thailand. *Journal of ISSAAS*. 15 (2): 42-55.

Kawasaki, J. and Fujimoto, A. 2009. Economic and Technical Assessment of Organic Vegetable Farming in Chiang Mai, Thailand. *Journal of ISSAAS*. 15 (1): 144-168.

Kawasaki, J. and Fujimoto, A. 2008. A Preliminary Study of Organic Vegetable Production in Thailand, with Special Reference to Chiang Mai. *Journal of ISSAAS* 13 (3): 186-202.

Recent Peer reviewed Publications/Invited Papers/Presentations in the last 5 years

Herath S. and **Kawasaki J.** 2012. Comparative Studies on Development Strategies considering Impacts of Adaptation to Climate Change. Funded by Mitsui Corporation.

Kawasaki J. and Herath S. 2011. Impact Assessment of Climate Change on Rice Production in KhonKaen province, Thailand. *Journal of ISSAAS* Vol. 17, No. 2: 14-28.

Kawasaki J. 2010. Farming in the Concrete Jungle. Published as Case Studies of Urban Spaces. *Green Places*, November 2010: 30-32.

Suphanchimat, N., Prapetchop, P. and **Kawasaki, J.** 2007. Impacts of Economics Integration on Agriculture and Poverty Alleviation: A Case of Thai-Laos PDR. JIRCAS.

Prapetchop, P., **Kawasaki, J.**, Mongkonsesawat, S., Pongsat, G., Gungaw, K., Muanthaisong, C., and Tanewat, C. 2006. Networking of the People Organization in Roi-Et province. The Thailand Research Fund Region Office.

Pakuthai, V., Kochamat, P., Pakdee, P., **Kawasaki J.**, Suriya, P., and Sriwaranunt, Y. 2006. Marketing and production of chilli in the Northeast of Thailand. The Thailand Research Fund Region Office.

Sooksawata, J. and **Kawasaki, J.** 2006. Economic Valuation of Protected Areas in North-Eastern Thailand. The Thailand Research Fund Region Office.

Suphanchimat, N., **Kawasaki(Iamlaor), J.**, Suriya, P., and Sriwaranunt, Y. 2006. Factors Determining Extensive Vegetable Growing in NongSaeng village. JIRCAS.

- Pakuthai, V., Kochamat, P., Pakdee, P., **Kawasaki (Iamlaor), J.**, Suriya, P., and Sriwaranunt, Y. 2005. Networking of the People Organizations in KhonKaen province. The Thailand Research Fund Region Office.
- Purcell, T., Allessansro, A., Chirat, C., and **Kawasaki (Iamlaor), J.** 2005. Value Chains of Silk in the North East Region of Thailand. The World Bank.
- Konjing, C., Somsamai, S., and **Kawasaki (Iamlaor), J.** 2005. The Study of the Border Trade Cooperation between Thailand and LAO People's Democratic Public. The Thailand Research Fund Region Office.
- Kawasaki (Iamlaor), J.** and Sriwaranunt, Y. 2004. Production and Marketing of Chili in Loei province. The Thailand Research Fund Region Office.

PERSONAL DETAILS

- Full Name and Title:** OrothSengtaheuanghoung
- Date of Birth:** July 1, 1959
- Nationality:** Laotian
- Institution:** Agricultural Land Utilization Research Center (ALRC), National Agriculture and Forestry Research Institute (NAFRI), Ministry of Agriculture and Forestry (MAF), Loa PDR
- Contact Details (telephone, facsimile and email):** Tel. 856- 20- 2210788, +856-21-770-075,
- Fax. +856 -21- 770075, Email: oloth_s@hotmail.com, oloth.s@nafri.org.la

PROFILE

He has 28 years of experiences related to SLM technologies: conducting Soil Survey and Land Use Planning, experimentation on Soil fertility for rice production, working with IBSRAM project on Management of Sloping Land for sustainable Agriculture as the project leader for Lao PDR, conducting on station and on-farm research on soil erosion and soil fertilities studies under different SLM technologies, working with IWMI project on Management of Sloping Land for sustainable Agriculture to promote SLM technologies for farmers in northern part of Laos, working with IWMI- IRD project on Management of Soil erosion Consortium (catchment study on soil erosion). As project leaders for Lao PDR, working with United Nation University on Marginal Mountainous Land Management in South East Asia and working with United Nation Convention to combat desertification and Land degradation as the focal point for Lao PDR.

His publishing including research reports on soil classification, soil fertility, soil conservation, REDD+ study and land use planning in Laos.

He was awarded as a recognition of excellent implementation of on-station research on Management of Sloping Land for sustainable Agriculture in Laos from International Board for Soil Research and Management (IBSRAM) in 1999 and the recognition of excellent implementation of on-farm research on promotion of Management of Sloping Land Technologies in Laos from International Water Management Institute (IWMI) in 2004

EDUCATION

Master of Science

1979-1985

University of Agriculture Institute of Tashkent (Uzbekistan)

Thesis topic: The effects of PIKS(micro nutrient elements) on productions (growth, yields) of cotton under ceroxems soils (Soil Sciences and Agro chemistry faculty)

EXPERIENCE

Current Position: Deputy Director of Agricultural Land Utilization Research Centre (ALURC/NAFRI)		1999-present
<i>National Agriculture and Forestry Research Institute (NAFRI), Laos</i>		
Project Leader	Working with IWMI- IRD project on Management of Soil erosion Consortium	2005-2010
Project Leader	To promote SLM technologies for farmers in northern part of Laos through working with IWMI project on Management of Sloping Land for sustainable Agriculture	2002-2004
Senior Researcher	Conducted on station and on-farm research on soil erosion and soil fertilities under different SLM technologies through working with IBSRAM project on Management of Sloping Land for sustainable Agriculture	1994-2001
Researcher	Conducted Experimentation on Soil fertility for rice production in Champasack provinces	1991-1993
Researcher	Conducted Soil Survey and Land Use Planning in Vientiane plain	1985-1990

EXPERIENCE FIELD

1985-1990	Conducted Soil Survey and Land Use Planning in Vientiane plain
1991-1993	Conducted Experimentation on Soil fertility for rice production in Champasack provinces
1994-2001	Working with IBSRAM project on Management of Sloping Land for sustainable Agriculture as senior Researcher and project leaders. Conducted on station and on-farm research on soil erosion and soil fertilities under different SLM technologies
2002- 2004	Working with IWMI project on Management of Sloping Land for sustainable Agriculture. To promote SLM technologies for farmers in northern part of Laos
2005-2012	Working with IWMI- IRD project on Management of Soil erosion Consortium (catchment study on soil erosion)

PUBLICATIONS

Recent Peer reviewed Publications/Invited Papers/Presentations in the last 5 years

- Pierret A., Latchackak K., Chathanvongsa P., **Sengtaheuanghong O.**, Valentin C. 2007. Interactions between root growth and soil detachment on hill slopes depending on land use: A case study in a small mountain catchment of Northern Laos. *Plant and Soil* (301): 51-64.
- Vigiak O., Ribolzi O., Pierret A., **Sengtaheuanghong O.**, Valentin C. 2008. Trapping efficiencies of cultivated and natural riparian vegetation of northern Laos. *Journal of Environmental Quality* (37): 889-897.
- Vigiak O., Ribolzi O., Pierret A., Valentin C., **Sengtaheuanghong O.**, Noble A. 2008. Off-borne sediments in riparian areas: a comparison of bamboo versus native grasses in northern Laos. *Unsasyuva*, 229, 58(4): 11-16.
- Sengtaheuanghong O.** and Valentin C. 2007. Land use change and soil erosion under shifting cultivation in northern Lao PDR. In Saxeana K.G., Liang L., Rekasem K., eds., *Shifting agriculture in Asia: implications for environmental conservation and sustainable livelihood.*

United Nations University, ISBN 978-81-211-0602-3, Dehra Run, India, chap. (18): 237-246.
Sengtaheuangoung O., Olivier R., Anneke D.R., Christian V., Alain P., Emmanuel B., Jean L. M.,
Jea P., Tran D. T., and Andrew N. 2009. Interactions between land uses and catchment
hydrology: Some achievements and ongoing activities of the MSEC project in South East
Asia, INDO-FRENCH CELL FOR WATER SCIENCES (IFCWS). Workshop on
“Anthropogenic impacts on water resources and soils: An Indo-French perspective” 23-27
November 2009, Indian Institute of Science, Bangalore – 560 012, India
Liang L., **Sengtaheuangoung O.**, and Takahashi S. 2010. Land use change, cause and
consequence in Montane Mainland Southeast Asia: A case study in northern Laos

MYANMAR

PERSONAL DETAILS

- Full Name:** Mr. Zaw Win Myint
- Date and Place of Birth:**
12 September, 1961, Ma Hlaing Township
- Home address:**
Forest Research Institute, Yezin Campus, Nay Pyi Taw, Myanmar
- Telephone, facsimile and email:**
Tel.+95-67-416524; Fax.+95-67-416523
Email: friyezin@gmail.com; ap.zawm@gmail.com
- Present Position, Name and Address of Institution:**
Director, Forest Research Institute, Yezin, Myanmar
- Short Scientific Biography:**
 - BSc (Forestry), University of Forestry, Yangon, Myanmar, 1983
 - M. Dev.S, Institute of Economics, Yangon, 2008
- Field of Specialization:**
Forest conservation
- Publication:**
Zaw Win Myint, 2010. Forest Law Enforcement and Governance in Myanmar, Forest Law Enforcement and Governance in Asia and Pacific, Bangkok, Thailand, pp 131-142

YUNNAN, CHINA

PERSONAL DETAILS

- Full Name and Title:** Professor Yang Yuming, President, Yunnan Academy of Forestry (YAF);
Director, Yunnan Academy of Biodiversity, China
- Date of Birth:** July 29, 1955
- Nationality:** Chinese
- Institution:** Yunnan Academy of Forestry (YAF)
- Contact Details (telephone, facsimile and email):** Tel. +86- 871-5211396, Mobile.
+86-13608719341, Fax. +86- 871 -5211520, Email: yymbamb@hotmail.com

PROFILE

Prof. Yang's research is dedicated to creating natural conservation of tropical forest. He is keenly interested in restoration of natural forest in China. He also conducts extensive field research on biodiversity and nature conservation in China. Prior to joining Yunnan Academy of Forest (YAF) in 2011, Prof. Yang was Director of National Plateau Wetlands Research Center and Director of the Nature Conservancy China Program.

EDUCATION

Doctorate of Philosophy (Environment Science and Engineering) <i>Tsinghua University, Beijing, China</i>	2003
Master of Science (Agriculture) <i>Southwest Forestry University (SWFC), Kunming, China</i>	1988
Bachelor of Science (Biology) <i>Yunnan Normal University, Kunming, China</i>	1982

EXPERIENCE

Professional Career:

7/2011-Present	Yunnan Academy of Forestry, President Yunnan Academy of Biodiversity, Director Yunnan Bamboo & Rattan Association, Chairman
12/2008-6/2011	National Plateau Wetlands Research Center, Director Yunnan Bamboo & Rattan Association, Chairman
07/2005-08/2008	The Nature Conservancy China Program, Kunming, <i>Director, Yunnan Great Rivers Project</i> Yunnan Bamboo & Rattan Association, Chairman
11/1997-Present	Southwest Forestry University, Kunming, China <i>Vice President, SWFU Professor</i> <i>Director, Institute of Bamboo and Rattan Research</i>
06/1994-11/1997	Southwest Forestry University, Kunming, China <i>Dean, Department of Forestry; Associate Professor</i>
02/1992-06/1994	Southwest Forestry University, Kunming, China <i>Deputy Dean, Department of Forestry</i>
07/1988-02/1992	Southwest Forestry University, Kunming, China <i>Lecturer, Forest & Vegetation Center</i>
10/1984-09/1985	Yunnan Normal University, Kunming, China <i>Biogeography Teacher, Department of Geography</i>
07/1982-10/1984	Southwest Forestry University, Kunming, China <i>Biogeography Teacher, Department of Geography</i>
09/1970-09/1978	Ministry of Forestry Southwest Forest Surveying & Design Division <i>Project</i> <i>Assistant, 4th Inventory Squad</i>

Consultancy Experiences:

07/2005-08/2008	Worked for The Nature Conservancy as the Yunnan Project Director
2/2002- 2/2003	One year visiting scholar to the Crop and Food Research Institute, New Zealand, specializing on management and assessment of environmental risks

8/2000 -10	Consultant mission for INBAR, visit to five south America economies: Argentina, Peru, Ecuador and Costa Rica, Chili to monitor the international programs supported by INBAR.
1997	Academic visit to Kasetsart University of Thailand on the conservation of tropical biological diversity.
3/1995-2/1996	One year visiting scholar at the College of Forestry, The University of the Philippines at Los Banos for research on the cultivation and use of tropical bamboo species and rattans.
09/1994	Participating the 4th International <i>Dipterocarpus</i> Workshop held in Chiangmai of Thailand
07-08/1992	One month visiting scholar at Gottingen University in Germany for research in sustainable tropical forest use.
01-02/1992	Participating the human resources development and training course for sustainable Management of Tropical Forests organized by ITTO.

PUBLICATIONS

[Books] Since 1990, published over 50 papers or books. The publications in past ten years are below:

Title	Language	Publisher	Year
China's Bamboo	Chinese	Science Press	2010
Study on Ecological Structures and Functional Zoning of the Alpine Chinese wetland Protected Areas in China	Chinese	Science Press	2009
Biodiversity and Conservation of Northwestern Yunnan	Chinese	Science Press	2007
Comprehensive Scientific Survey of Wenshan Nature Reserve	Chinese	Science Press	2007
The General Plan of the Xishuangbanna National Nature Reserve	Chinese	Science Press	2007
Comprehensive Scientific Survey of Tongbiguan Nature Reserve	Chinese	Yunnan Science & Technology Press	2006
An illustrated gazetteer of bamboo species in Honghe River Basin	Chinese	Yunnan People's Press	2005
Flora of Yunnan (volume no. 9: the Bamboo subfamily)	Chinese	Science Press	2004
Nangun River National Nature Reserve	Chinese	Yunnan Science & Technology Press	2003
Manual for Bamboo Cultivation and Use in China	Chinese	China Forestry Press	2002

[Peer-Reviewed Papers in Journals/proceedings]

- Yang Y. 2010. The colon and sequence analysis of the homologous gene of the giant dragon bamboo (*Dendrocalamussinicus*) in Xishuangbanna area. *Forestry Science Studies* 23(1):1-5
- Yang Y. 2010. Landscape diversity impact assessment of proposed hydrostations of the tiger leap gorge to the xulong river section, mid-reach Upper-Yangtze River. *Recourses and Environment in the Yangtze Basin* 5th.
- Yang Y. 2009. Inventory on Bamboo Pests in Yunnan. *Agricultural Science & Technology* 3rd.
- Yang Y. 2008. The use of nature reserves' specimen database in the ethno botany studies. *Anhui Agriculture Science* 2nd.
- Yang Y. 2003. Explorations in Bamboo Pulp Making and Bamboo Plantations for Pulp Use. *Journal of Paper making in China* 3rd.
- Yang Y. 2003. Study on the Conservation of Bamboo Plants in Yunnan Province. *Forestry Sciences* 2nd.

PERSONAL DETAILS

- ❑ **Full Name and Title:** Li Jiang
- ❑ **Date of Birth:** August 17, 1972
- ❑ **Nationality:** Chinese
- ❑ **Institution:** Yunnan Academy of Forestry
- ❑ **Contact Details (telephone, facsimile and email):** Tel. +81-871-5211539, Mobile. +86-13708426743
Fax.+86-8715211520, Email:lijianglyht@yahoo.com.cn

PROFILE

Skilled research is focused on integrated forestry development, soil and water conservation. Current research is concentrated on forest management in Xishuangbanna Prefecture, China.

EDUCATION

Doctorate of Philosophy (Silviculture) <i>Beijing Forest University, Beijing, China</i>	2011
Master of Science (Agroforestry) <i>University of the Philippines at Los Banos, Laguna, Philippines</i>	2001
Bachelor of Science (Soil and water conservation) <i>Beijing Forestry University, Beijing, China</i>	1994

EXPERIENCES

Professional Career:

- 2009- Present ,Vice Director of the Research Project Management Office, Yunnan Academy of Forestry
- 2011-Present, “Glory of the west “ visiting scholar at the Chinese Academy of Forestry, Beijing
- 2008-Present, Yunnan Technology Innovation Expert
- 1994-1998, Research Intern, Yunnan Academy of Forestry
- 1999-2005, Research Assistant , Yunnan Academy of Forestry
- 2006-Present, Associate Professor ,Yunnan Academy of Forestry
- 2005-Present, Project leader for over 10 forestry research or extension projects funded by the State Forestry Administration of China, the Science and Technology Department of Yunnan Province and other funding agencies
- Published over 20 articles and 2 books
- International travel experiences including training, fieldwork or attending conferences in the Philippines, Sweden, Finland, Vietnam and Burma.

Consultancy Experiences:

- As local technical expert , worked for the **GTZ** funded project in formulating *Integrated Forestry Development Plan in Xishuangbanna Prefecture*, 10 days in 2002
- As a local expert and interpreter, worked for the **Sino-Finnish project** in Yunnan for trainings on nursery techniques and plantation management, 4 weeks in 2004 and 4 weeks in 2005
- As a short-term individual consultant responsible for policy and regulation study, worked for the CDM forestry carbon sequestration project funded by **World Bank** in Guangxi , 75 days from November 1st, 2007 to June 30th, 2008
- As a lead consultant, worked for the **French Initiative Development** funded forestry-based carbon project in Yunnan, 2 weeks in 2011 and 10 weeks in 2012.

PUBLICATIONS

Published over 20 article and 2 books