

## **IPSI collaborative activity proposal:**

### **Create synergy between traditional knowledge and modern science**

**Leading Organization:** Nature and Livelihoods, Uganda

**Collaborating Institution:** CFNRPS, Renmin University of China

#### **Activity Summary:**

Sustainability of Socio-ecological Production Landscapes and Seascapes (SEPLS) depends on strengthening human capital in ways that support the management of the natural capital. Traditional knowledge, the knowledge and insights acquired through extensive use or observation of an area or species, can play an important but often undervalued role enabling local communities to manage vulnerability, uncertainties, shocks and stresses. New innovations based on modern science can be developed building on it, thus clearing some of the knowledge and technological bottlenecks limiting its applicability and effectiveness. Local community institutions and individuals within a community can be strengthened to identify, conserve, manage, and add value to local diversity and other renewable land resources when traditional knowledge is improved by modern science and technology.

New innovations based on traditional knowledge or improvements of traditional resource use and management practices can strengthen SEPLS's management. Resource use and management practices developed elsewhere based on traditional knowledge also need to be tested in new situations. Both can be achieved through research. Examples of how synergy can be created between traditional knowledge and modern science include but are not restricted to the following: i) understanding the role of traditional knowledge in poverty alleviation, biodiversity conservation, and food security through documentation of cases, ii) identifying synergy between traditional knowledge and modern farming practices, for better soil management and food security of poor small-holder farmers, iii) understanding of nutritional values and new ways to propagate, multiply, process and market traditional foods to create new opportunities for a wider variety of income-generating enterprises, hence a ripple effect that multiplies the benefits broadly through rural communities, iv) assisting farmers to reserve traditional land use practices to achieve poverty alleviation and while ensuring sustainable management of the environment, v) understanding impacts of agricultural intensification and monocultures (e.g. impacts of pesticides) which can help drive development of more environmentally-friendly agricultural inputs, vi) providing policy recommendations to local people and the international community to strengthen the use of traditional knowledge in SEPLS.

Concrete examples of how modern science has been used to improve local knowledge for sound management of land and use of biodiversity are however still limited. This project will explore, develop and test ways to improve efficiency of use of indigenous resources in SEPLS as a means of improving livelihood resilience of the local communities while sustaining biodiversity. The goal is to use modern science and technology to improve upon local traditions of land and biodiversity use by increasing productivity, developing and testing new products, and creating or expanding markets. The research will be a multi stage, multi-tiered process involving knowledge identification and developing or testing new innovations based that knowledge.

Tentatively, the project is designed to be implemented in Uganda and China. In Uganda, it will be based in the Teso landscape in the eastern part of the country. This landscape lies within Uganda's cattle corridor, a stretch of country earlier identified in Nature and Livelihoods' case study as a major socio-ecological production landscape. Native species and natural habitats have been traditionally retained in Uganda's cattle corridor for their importance as sources of pasture, native foods, and fibre but these sustainable uses have been increasingly abandoned in recent years. Considerations that make the proposed project area attractive for implementation of this project include: i) a high rate of land degradation, ii) location within a vegetation zone that is poorly represented within Uganda's protected area network, iii) occurrence of a high diversity of wild foods, particularly fruits important for food security and nutrition, and iv) being highly prone to climate disasters (frequent droughts and floods) hence a high priority site for developing, testing, and applying tools of livelihood resilience.

In China, the project will be implemented in the Kerqin Sandland Region in Inner Mongolia Autonomous Region, Northeast China, Hunan and Guozhou province Southwest China. The habitats in inner Mongolia autonomous region are a mosaic of pasture, wetland, farmland, shrub forests, rich biodiversity with traditional nomadic life of Mongolian. Various minorities enjoy with mountainous landscape, Southwest China, with many traditions and colorful culture. However as China has been in rapid globalization, urbanization and industrialization process, these ecological-social landscapes have rapidly transformed and traditional knowledge and lifestyle are being lost. The activities in China will focus on document social-ecological landscape in the selected hinterland in the minority regions, and enhance capacity of local residences to develop sound ecological friendly livelihoods with best application of traditional knowledge with support of modern sciences and technology.

Specific activities proposed and expected outcomes are presented in the table below by IPSI objective:

Proposed activities and outputs. Activities identified under “Activity 1” correspond to the first four of the five actions recommended during IPSI-3 as some of those that could be pursued to create synergy between traditional knowledge and modern science

IPSI Objective	Activity 1	Activity 2	Country	Output
<b>1. Increase knowledge and understanding of socio-ecological production landscapes and seascapes that are addressed by the Satoyama Initiative</b>	<i><b>i) Record/document traditional knowledge</b></i>	a) Carry out research on role of traditional knowledge in food security, sustainable landscape management, biodiversity, and carbon sinks in selected communities	China, Uganda	Reports on environmental and cultural values of SEPLS in selected communities including lists of economic values and management practices of high promise
<b>2. Address the direct and underlying causes responsible for the decline or loss of biological and cultural diversity as well as ecological and socio-economic services from socio-ecological production landscapes and seascapes</b>	<i><b>ii) Prove the validity of traditional knowledge through systematic observation and testing</b></i>	b) Verify local beliefs concerning the relationship between flowering of particular species of native plants and honey flow	Uganda	Activity report
	<i><b>iii) Develop new innovations by improving understanding of use of traditional knowledge</b></i>	c) Improve policy coherence for better use of traditional knowledge through understanding interface of traditional knowledge with outside intervention and stakeholder consultation process in a selected area.	China	-Activity report -Journal articles
		d) Develop an integrated community development planning in a community selected as IPSI piloting sites.	China	Activity report

		e) Carry out experiments to develop low-cost, eco-friendly means of controlling selected crop pests	Uganda	A report describing methodologies developed
	<b><i>iv) Facilitate replication of uses and practices that have demonstrated good outcomes</i></b>	f) Disseminate research results at local, national, and international levels	Uganda	A report(s) on workshops organized, presentations given, and manuscripts prepared or published.
		g) Establish the effectiveness of land use practices already proven on other landscapes (e.g. innovative agroforestry practices) in selected SEPLS	Uganda	A report of effectiveness of land management practices proven elsewhere on focal landscapes
		h) Facilitate stakeholder engagement in regional development planning based on results from research on developing synergy between traditional knowledge and modern science	China	Activity report
		i) Provide trainings to various stakeholders	China	Activity report
<b>3. Enhance benefits from socio-ecological production landscapes and seascapes</b>	<b><i>ii) Prove the validity of traditional knowledge through systematic observation and testing</i></b>	j) Conduct lab analyses / literature review of nutritional values of indigenous species of high traditional value as food	China, Uganda	A summary of key nutritional values for food species selected

		sources		
		k) Conduct experiments and literature reviews on methods to propagate and manage for high yield, of wild species of high value	Uganda	A report on protocols for multiplying species of high economic value
		l) Conduct experiments to test effectiveness of local wild species established through socioeconomic assessment as valued for agriculture	Uganda	A report on local wild species of high potential for improvement of agricultural production and methods of application
		m) Carry out a study to verify effectiveness of traditional land use and biodiversity use and management practices	Uganda	A report on sustainability of traditional land use practices compared to emerging new practices including comparisons of economic value
		n) Carry out analyses to screen unproven species of the highest medicinal value used locally for pharmacological and other medicinal properties	Uganda	A report with pharmacological and other medicinal properties
		p) Conduct lab analyses to screen high value wild foods for anti-nutritive properties	Uganda	A report describing anti-nutritive properties

	<b><i>iii) Develop new innovations by improving understanding of use of traditional knowledge</i></b>	q) Conduct trials to develop new ways of processing local foods of high value for greater local consumption and for the markets, and create new market brands for high value wild products	Uganda	A report describing results from activities undertaken
	<b><i>iv) Facilitate replication of uses and practices that have demonstrated good outcomes</i></b>	f) Disseminate research results at local, national, and international levels	Uganda	A report(s) on workshops organized, presentations given, and manuscripts prepared or published.

**Expected outcomes(s) of the project:** This project will contribute to the achievement of IPSI activity 12 and other activities related to Category 5 developed based on the IPSI-2 conference held in Nairobi in March 2012. The activity(s) relate to areas 1 & 5 of IPSI which concern “knowledge facilitation” and “on the ground activities” respectively and objectives 1-3 of IPSI.

**Schedule/Milestones and Project Completion:**

Dates	Events / Tasks
September 10 <sup>th</sup> 2012	Proposal Concept Draft Ready and Submitted to the IPSI Secretariat
April 2013	Final Concept Submitted
?	Final Proposal Ready
?	Project Implementation Begins
?	Project Update Deadlines
?	Project Completion
?	Deadline for Final Reporting

**Contact information:** names and contacts of the focal persons-

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