IPSI THE INTERNATIONAL PARTNERSHIP FOR THE SATOYAMA INITIATIVE

Summary Report and Presentation Abstracts

Satoyama Initiative Regional Workshop in Sabah 2017

Dates:	18-20 April 2017
Venue:	Le Meredien Hotel, Kota Kinabalu, Sabah, Malaysia
Co-organized by:	Secretariat of the International Partnership for the Satoyama Initiative (IPSI), United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS);
	Sabah State Government
Cooperating Organization:	Project on Sustainable Development for Biodiversity and Ecosystems Conservation in Sabah, Malaysia (SDBEC), Japan International Cooperation Agency (JICA)
Contributing Organization:	Ministry of the Environment, Japan *(Workshop costs borne by UNU-IAS were made possible through the financial contribution of the Ministry of the Environment, Japan)*

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Summary Report

Background and overview

The Satoyama Initiative Regional Workshop in Sabah 2017 was the fifth in a series of regional workshops held to promote the concept of the Satoyama Initiative, a global effort "to realize societies in harmony with nature" through the revitalization and sustainable development of "socio-ecological production landscapes and seascapes" (SEPLS), where sustainable human production activities provide benefits for both livelihoods and biodiversity. The first regional workshop was held in 2013 in Kathmandu, Nepal for the Asia region, the second in 2014 in Florence, Italy for the Europe region, the third in 2015 in Accra, Ghana for the Africa region, and the fourth in Cusco and Pisac, Peru for the Latin America and the Caribbean region. The Sabah workshop was the second held for the Asia region.

The workshop was co-organized by the Secretariat of the International Partnership for the Satoyama Initiative (IPSI) and the Sabah State Government, with major cooperation from the Japan International Cooperation Agency (JICA)'s Project on Sustainable Development for Biodiversity and Ecosystems Conservation in Sabah, Malaysia (SDBEC) and contributions from the Ministry of the Environment of Japan. Indoor sessions of the workshop, including opening and closing plenaries as well as working-group sessions, were held in the Le Meridien Hotel Kota Kinabalu. The theme of the workshop was "*Mainstreaming concepts and approaches of SEPLS in Asia*". The term "mainstreaming" can be understood in different ways, but this workshop addressed it as used in the publication "Satoyama Initiative Thematic Review Vol. 2", meaning when practices that have worked well in one place or at relatively small social scales are replicated in other places, or up-scaled to larger scales in policy planning and implementation. Participants thus focused on ways to bridge the gaps between policy, research and on-the-ground action.

Abstracts for all of the presentations given at the workshop are provided in the following "Presentation Abstracts" section of this report.

Inside the Satoyama Initiative Regional Workshop in Sabah 2017

Proceedings

The opening plenary session was held on 18 April, and began with a prayer recital and opening remarks from representatives of local and visiting governments and the IPSI Secretariat. Mr. Amat Mohd Yusof, representative of the Ministry of Natural Resources and Environment, Government of Malaysia, expressed his gratitude and then mentioned the importance of sharing experiences between countries to promote activities in SEPLS and his expectation that the workshop would document the contribution of traditional resource management systems to nature conservation and deliver these to IPSI's global audience. Mr. Naoya Tsukamoto, Director of the IPSI Secretariat, thanked the local governments, and introduced the theme and goals of the workshop as well as the relevance of international efforts under the Intergovernmental Science-Policy Interface on Biodiversity and Ecosystem Services (IPBES) to IPSI.

Mr. Amat Mohd Yusof

Dr. Marisa Aramaki

Dr. Marisa Aramaki delivered remarks on behalf of Mr. Reiji Kamezawa, Director-General of the Nature Conservation Bureau, Ministry of the Environment, Government of Japan, pointing out Japan's role in the development and support of the Satoyama Initiative and IPSI since CBD COP 10 in 2010, and his hopes for the workshop to successfully accelerate action and spread knowledge to international processes. Finally, Datuk Teo Chee Kang, Minister of Special Tasks spoke on behalf of Datuk Seri Panglima Musa Haji Aman Chief Minister of the Sabah State Government, highlighting the importance of biodiversity in Sabah that coexists with a multi-ethnic and multi-cultural society, particularly through protected areas such as Kinabalu Park, and his hopes that the workshop would help to inform the international audience of promising efforts carried out in Sabah.

Mr. Naoya Tsukamoto and Datuk Teo Chee Kang

These remarks were followed by two keynote speeches, the first by Prof. Kazuhiko Takeuchi of UNU-IAS to set the stage and provide baseline information on the Satoyama Initiative and SEPLS for participants and guests, and the second by Prof. Fadzilah Cooke from Universiti Malaysia Sabah, introducing some of the issues particular to the local area that would provide much of the content for the workshop. Discussion following these speeches raised the relevance of the Satoyama Initiative to ecosystem-based disaster-risk reduction (eco-DRR) and rural-urban linkages, as well as the importance of traditional knowledge and property rights for disadvantaged groups.

Prof. Kazuhiko Takeuchi

Prof. Fadzilah Cooke

A guest presentation was also given by Prof. Saul Cunningham of the Australian National University on the recently-published assessment of pollinators, pollination, and food production produced by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). The IPSI Secretariat's Mr. William Dunbar then provided a background and introductory presentation on the Satoyama Initiative, IPSI and the regional workshop including its schedule and purposes.


Prof. Saul Cunningham


Mr. William Dunbar

Prof. Kuang-Chung Lee

Mr. Singay Dorji

Mr. Godfrey Kissey

Dr. Jamili Nais

These presentations were followed by a panel session moderated by Mr. Naoya Tsukamoto of the IPSI Secretariat and Dr. Jamili Nais from the Sabah Parks division of the Sabah State Government. Panelists Dr. Kuang-Chung Lee from National Dong-Hwa University in Chinese Taipei, Mr. Singay Dorji from the UNDP GEF Small Grants Programme, Mr. Godfrey Kissey from the Sabah Department of Fisheries and Dr. Nais discussed various activities in Sabah and other parts of Asia, and how the larger principles related to the Satoyama Initiative relate to specific projects both in policymaking and in the field. The opening plenary then ended as participants went for lunch followed by their working group sessions.

Four working groups were organized for this workshop, each focusing on one of four themes related to mainstreaming SEPLS in Asia: Ecosystem Restoration; Economic Incentives; Traditional Knowledge; and Communication, Education and Public Awareness (CEPA). Each working group featured presentations by five or six participants, followed by in-depth discussion of the issues raised in the presentations and others brought up by all members of the groups. Each group worked toward producing responses to the guiding questions asked to each presenter: What is the value of the SEPLS? Why is it important? What aspects and practices can or should be mainstreamed? What are some challenges to mainstreaming? How were these challenges met, or what is needed to meet them? Are there any general recommendations?

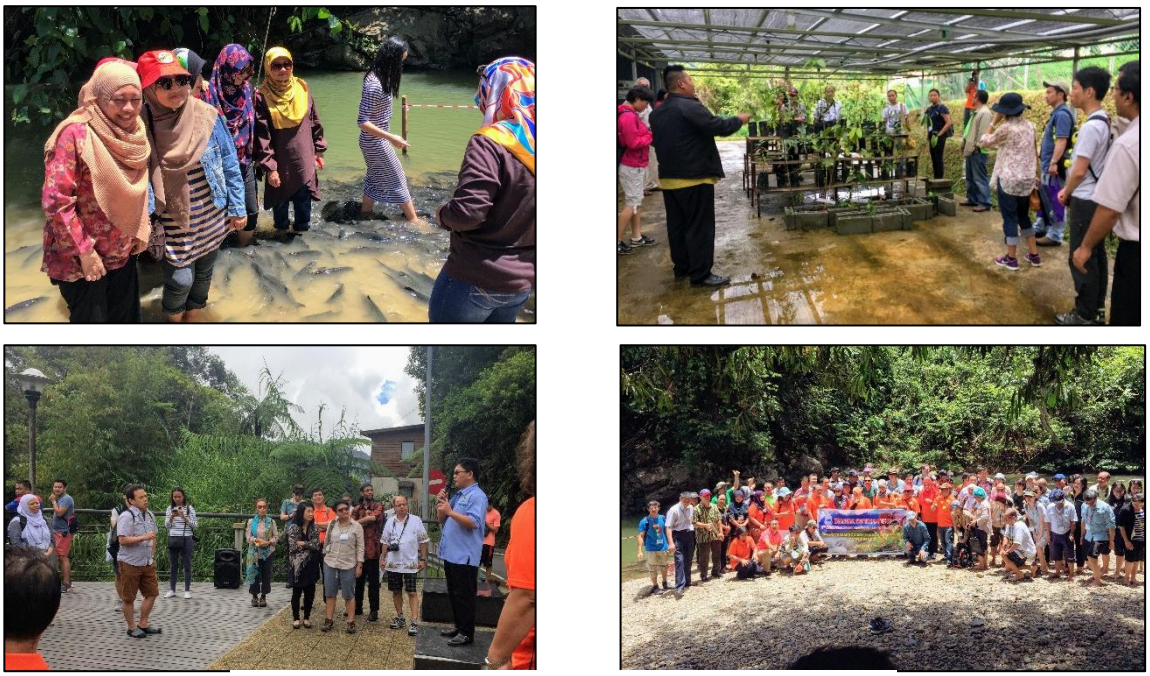

Participants in a working group

A reception was held in the evening of 18 April, hosted by the Sabah State Government and featuring traditional and modern music and dance performances by local performers as well as many local delicacies. The reception gave participants a chance to meet and get to know each other in a more informal setting before returning for two more hard days of hard work.

Reception attendees enjoying traditional dancing

The programme for 19 April was an excursion for participants to visit sites around Sabah. The group first gathered at Kinabalu National Park for a group photo, and then proceeded to the village of Luanti Baru, which has instituted a traditional *tagal* system for resource management, particularly of its river and the fish they harvest from it. Participants also had a chance to experience the village's "fish massage" and other tourist attractions in addition to having a lunch of local foods.

The participants then split into two groups. One visited the village of Bundu Tuhan to observe local livelihood projects and local crafts, and also to experience tree-planting. The other group visited Kampong Tudan, where they observed the JICA-SDBEC project site and multimedia presentations made by the village beneficiaries of the project.


Scenes from the Regional Workshop excursion

The morning of 20 April was a continuation of the working group sessions, with each group preparing its conclusions to present in the closing plenary session. All of these responses are provided in the Annex to this report in the form of the slides that were presented.


Mr. Jayant Sarnaik presents working group conclusions, with moderators Ms. Yoko Watanabe and Mr. Gerald Jetony

The closing plenary session was held in the afternoon of 20 April, beginning with the presentations from each working group and discussion of each of these. This was followed by a break and then an information-sharing session with introductions to some of the important activities being carried out through the IPSI network. A wrap-up of the workshop and some initial impressions were given by moderators Ms. Yoko Watanabe from UNDP and Mr. Gerald Jetony from the Sabah State Government's Natural Resources Office, and finally closing remarks from Mr. Tsukamoto and Mr. Jetony bringing the workshop to a close.

Outcomes

In both presentations and discussions, workshop participants were encouraged to consider five key questions regarding mainstreaming of SEPLS in Asia:

1. What is the value of your SEPLS? Why is it important?
2. What aspects or practices can/should be mainstreamed (replicated in other areas, reflected in policy, etc)?
3. What are some challenges to mainstreaming?
4. How have you met, or what you need to meet, these challenges?
5. Any recommendations?

These questions were addressed from various standpoints, based on the thematic focuses of the four working groups: ecosystem restoration, economic incentives, traditional knowledge, and communication, education and public awareness (CEPA). Due to the wide diversity of perspectives the number of responses was accordingly very large, and a wealth of individual responses can be found in the abstracts in the "Proceedings" section of this report and in the groups' reporting presentations in Annex 2. With this in mind, however, the participants as a whole did reach some shared conclusions about the workshop's theme, many of which were highlighted by the moderators of the closing plenary session.

First, on the first question regarding the value of SEPLS, participants from all over Asia agreed that SEPLS are important for both their socio-economic and their socio-ecological values. The landscape approaches implied in integrated management of SEPLS can lead to effective ecosystem conservation and sustainable livelihoods, respect for and transmission of traditional culture and knowledge, but they require active efforts in all of these areas as well as communication and education. In most cases, these various goals and approaches are closely interlinked, for example in the findings that public awareness of the value of SEPLS can itself be a kind of economic incentive particularly toward the broad provision of ecosystem services, or that maintenance and transmission of traditional knowledge and cultural practices in many SEPLS are inextricably integrated into ecosystem conservation.

Responses to the second question, about what can or should be mainstreamed from effective SEPLS practices, were more varied and specific to the participants' individual cases, and therefore the overall conclusions were more related to empowerment of the local communities in SEPLS as the ones most qualified to make decisions about management of their own resources. Participatory decision-making processes on land planning and management are an example of an idea that could be expanded to other areas, although the decisions made through these processes may not be replicable. Specific elements of, for example, traditional local knowledge, would not be appropriate for mainstreaming in many cases, due both to their local specificity and to community rights over their own knowledge. Research and knowledge-management practices, as well as diversification of livelihood options, however, were seen as desirable for mainstreaming.

Participants found more common ground regarding challenges to mainstreaming, the third question, as many agreed that limited institutional capacity and access to knowledge development, management and sharing processes and technologies posed difficulties. Recognition—for example recognition of traditional management systems by official authorities—was also seen as a challenge in many places, along with perverse incentives created by authorities.

For the fourth question on how to deal with these challenges, many participants have been working toward capacity-building in local communities as well as attempts to engage policymakers and to streamline and harmonize policies and priorities from local to national levels, and their individual presentations provided many examples. Broader issues for scales beyond the local community included taking advantage of branding and certification programmes, strengthening market linkages, and locally-appropriate livelihood diversification.

Finally, several recommendations were raised as outcomes of the workshop, mostly based on the responses to the other questions above. Integration of SEPLS concepts into streamlined policy processes

at all levels from local to national, capacity building and market linkages, including across sectors, were among the elements identified as most important. Various issues related to education and public awareness, as well as market instruments like ecotourism, subsidies and certification were also discussed. Participants recommended that efforts be made by the IPSI Secretariat to disseminate results of this workshop and continue the work begun here into the future, particularly considering the future direction of international policy processes beyond 2020, when the timeframe of the Aichi Biodiversity Targets will end.

Participants applaud the successful conclusion of the Satoyama Initiative Regional Workshop in Sabah

Presentation Abstracts

Contents

Socio-Ecological Production Landscapes and Seascapes for a Society in Harmony with Nature

Keywords: resilience, traditional knowledge, livelihood diversification, empowerment, SDGs

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The Satoyama Initiative

The Satoyama Initiative is a global effort to realize "societies in harmony with nature" by promoting revitalization and sustainable management of "socio-ecological production landscapes and seascapes" (SEPLS), which are dynamic mosaics of habitats and land uses providing humans with the goods and services for their inclusive wellbeing while conserving biodiversity. SEPLS can be found in many places around the world. Many of them, however are facing challenges due to rapid urban development, over-exploitation, under-use, industrial agriculture and other factors. The conceptual framework of the Satoyama Initiative, consisting of a "three-fold approach" and "six ecological and socioeconomic perspectives", confirms multi-dimensional aspects that are important to addressing these issues and promoting SEPLS. The Satoyama Initiative aims to contribute to the three objectives of the Convention of the Biological Diversity (CBD). In particular, the concept of SEPLS is most pertinent to the second objective, the sustainable use of biodiversity. At the CBD COP 10 meeting in 2010, a decision recognizing the Satoyama Initiative (Decision X/32) was adopted, and the International Partnership for the Satoyama Initiative (IPSI) was launched to foster broader activities to sustain and develop SEPLS.

Enhancing resilience in SEPLS in Southeast Asia

Effective adaptation to climate change can benefit from the integration of traditional knowledge and modern technologies, leading to enhanced resilience in SEPLS. For example, a case study from Viet Nam illustrates strengths to tackle salinization and its effect on crop production. A strategy for countering salt infiltration is to use floodgates upstream when the infiltration advances. The engineering solution to cope with ecosystem changes is to use floodgates, but ecological strategies are also needed to address salinization, such as for farmers to switch from high-yield varieties to traditional varieties or to glutinous rice in fields unaffected by salinization, or from rice to rushes in affected fields. The integration of mosaic systems that integrate traditional varieties and modern hybrid varieties gives higher yields and has the potential to increase resilience to climate and ecosystem changes in rural Southeast Asia.

In a case from Indonesia, a traditional home garden system in Java known as *pekarangans* has been selected to help protect against various types of shocks and socio-economic changes, and also maintain high levels of biodiversity. For instance, trees can be cut and be sold as high-price teak and

mahogany timber to cover healthcare and education expenses, and for disaster recovery. The study recommended that the conservation of *pekarangans* should be combined with application of the Forest Certification System (FCS) to commercial forests to offer increased protection against socio-economic changes owing to commercial reforestation, which is economically and ecologically very efficient.

In Ayeyarwady, Myanmar, the local livelihoods have relied mainly on the mangrove forest as it contributes to fisheries as well as disaster risk reduction. Recently, however, the forest has been declining, and wind- and salt-tolerant species have therefore been selected for home gardens in rehabilitation efforts around the village, together with artificial facilities for disaster risk reduction, in order to enhance local resilience.

Multi-dimensional aspects of resilience in SEPLS

In order to improve social capabilities and living standards, enhancement of the resilience of local communities through multi-dimensional rural livelihood diversification using on-farm, off-farm and non-farm opportunities is important. For instance, drought- and flood-prone communities in Northern Ghana have seen efforts including crop diversification with commercial crops like peppers and okra and improved beekeeping for honey production. In this context, it is necessary to expand the value chain to sell products, and such efforts can also provide social benefits. While access to ecosystem services in these communities continues to suffer from land degradation and unpredictable rainfall and drought, and women are especially disadvantaged in access to fertile land and other income sources, shea butter production is contributing their empowerment. Community resilience assessment indicators have been developed, which include the three dimensions of ecological resilience, engineering resilience, and socio-economic resilience.

The highlight of this research project was the co-creation of drama engaging local communities and disseminating scientific research findings where illiteracy rates are high. The community members mainly drew on traditional culture and practices to tell stories of changes in their community, and this became a great opportunity to enhance resilience in local communities and promote self-action beyond immediate project interventions.

Keys for sustainable societies in harmony with nature

Efforts in SEPLS also have great opportunities to contribute to many of the Sustainable Development Goals (SDGs). Thus, it would be effective to clearly understand which goals individual activities may contribute to. Promoting the social-ecological sphere through rural-urban linkages is an important point in promoting SEPLS towards sustainable societies in harmony with nature.

Community based conserved areas: a rediscovery of culture in forest landscapes?

Keywords : new environmentalism, community based conserved areas, Sabah, uplands, culture

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Fadzilah Majid Cooke obtained her PhD in Environmental Sociology from Griffith University, Brisbane, Australia. She has taught at Universiti Malaysia Sabah (2003-2016), and at the University of Wollongong (1995 to 1998). She was awarded a research fellowship at the Australian National University, Resource Management for Asia and the Pacific, a postdoctoral fellowship at RMIT University, Melbourne and the Asian Public Intellectual Fellowship (2011/2012) for work on Muslim lands in southern Thailand and southern Philippines. She has published nationally and internationally on the political ecology of natural resources, social movement and self-government. Her current research focus is on coastal communities and their adaptation to changing coastal and ocean conditions in the Sulu Sulawesi sea region of Sabah.

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Abstract:
Renewed interest in the role of traditional ecological knowledge (TEK) and indigenous ways of doing and viewing the world (some refer to it as local wisdom) has arrived via environmentalism. Given that there are various strands to environmentalism, the paper will focus on what is known as 'new environmentalism'. The main features of new environmentalism that are of relevance to this paper are: providing a critique of top down ecologically damaging forms of development in favour of participatory development and second, its particular view about TEK as falling outside politics. The paper will not venture into an aspect of new environmentalism that emphasises technology and 'proper regulation' by bureaucracies for managing industrial damage to the environment (technocentricism). After all there is now a thriving clean up industry in business and consultancy.

New environmentalism's focus on upland or border communities on people who, according to James Scott, because of historical processes of displacement and marginalisation have developed an art of not being governed because of the spaces they occupy. Examples are the uplands within states and/ or on the borders of state (as in the Heart of Borneo) or in marginal spaces of well traversed seas (such as the Sulu Sulawesi Seas within the Coral Triangle). An added feature of such communities at the margin is their perceived authenticity, less corrupt and having a fair standard of moral purpose; in sum a culture free of tensions caused by social relations and forms of power (class, gender, ethnicity). And yet, as David Harvey has pointed out these marginal places that have survived have, almost without exception, done so by an accommodation to the power of money, to commodification and capital accumulation and to modern technologies, hence an aberration from the search for an authentic community possessing values outside of a capitalist, materialist and highly monetized culture. Harvey's observation when translated into local action show that communities are responding in the best way they know how by adapting to conservation practices initiated by state, non-government, and/or academics by forming alliances or by resisting them. Alliances have provided some local communities with leverage, but it has not happened in a vacuum. The process is double edged.

The main response of most local communities to interventions of any form is 'how to hold on to what is left' of natural resources on which their entitlements (social, economic, political) in the context of the nation state lie. Their past experiences of displacement and loss of access to natural resources have

prompted the formation of an 'environmentalism of the poor' which, according to Martinez Alier (2002), is charactarised by issues of social justice and a defence of livelihoods that are now fragmenting.

This paper examines my own work in Sabah of community based conservation. In general, there are two main features of community based conservation that are relevant to this paper. First, at the local community level, conservation is about sustainable use, not only about preservation. For example, in instances where village fallow lands are left to generate in a rotation system of shifting cultivation, for 10 years or more, secondary forests will grow. Such patchwork of forests are clearly evident in the systems maintained at Kiulu (Fadzilah, Marja, and Gaim 2008) and at Tudan village (fieldnotes April 2017), both in the Tuaran administrative district of Sabah, as well as at Kiau Nuluh village in Kota Belud administrative district (Majid Cooke and Rosazman Hussin 2014). Secondly, village tenure system and land use although not written, are complex and allow for communal as well as individual entitlements. However, because customary lands unless otherwise titled, are not visible to the State, they are considered as 'State land'. Fallows which are largely untitled are consequently double burdened, since they are viewed as State land that are 'idle'. Such lands are subject to land use change of a kind that convert 'idle land' to productive plantations (in Sabah this conversion translates into oil palm or rubber plantations), at the discretion of the State. In the past, what might have 'saved' these upland villages of Ranau and Kota Belud from land use conversion was that their landscapes are too hilly (often above 25 degree slope) and temperatures too low, for large scale plantations.

However, some villages who are worried about the possibility of losing 'idle land' to commercial crops, are themselves engaging in land use conversion through strategic agriculture, namely by growing smallholder rubber wherever slope and local climate conditions permit as at Kiulu. Converting fallow lands to rubber or other commercially productive crops including fruit trees is a strategy for 'holding on' to their land. This strategy have implications for village food security in the long term, which we do not have the time nor space to deal with here. At Kiau Nuluh, through strategic alliance with NGO and government agencies, village communities are engaging in eco-tourism since eco-tourism has the benefit of escaping the 'idle land' label while simultaneously engaging in an activity that is viewed as a poverty alleviating strategy and has official approval (Majid Cooke and Rosazman Hussin 2014).

One outcome that is shared by most communities who have cultivated 'the art of not being governed' is that they have now become more embedded in state and market processes of development. Solutions such as eco-tourism, land titling and ancestral domain (in the Philippines) show contingent effects, but there is no room in this paper to detour on solutions.

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The IPBES assessment of pollinators, pollnation and food production

Keywords: crops, bees, insects, synthesis, policy

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IPBES

The Intergovernmental Platform for Biodiversity and Ecosystem Services was established in 2012, with the support of more than 100 governments, with the goal of delivering assessments in manner that supports the development of policy responses, catalyses efforts to learn more and builds capacity globally. It is administered by UNEP (the United Nations Environment Programme). The strategy is to review existing knowledge and to communicate synthesis of evidence in a way that is policy relevant but not policy prescriptive. IPBES also recognizes that evidence for the assessments comes not only from science in the western tradition, but also from indigenous and local knowledge. Pollinators, pollination and links to food production was selected as one of the first areas for a thematic assessment, in part because it was recognized that it was an area of concern globally, but also because the topic had received substantial attention from researchers and so it was anticipated that the knowledge base would be relatively strong.

The assessment process

A team was assembled with two co-chairs and more than 60 authors, drawn mostly from research institutions, across more than 30 countries. There were major workshops in 2014 and 2015, but smaller teams met other times, and most of the work was done in between workshops. The structure of the report was determined at the outset and included the following chapters: Summary for policy makers, Background, Drivers of Change, Status and Trends, Economic Valuation, Biocultural Diversity and Sociocultural Values, and Responses to Risks and Opportunities. The final report was delivered early in 2016.

Main messages from the assessment

About 75% of the leading food crops depend in some part on pollinators, both wild and managed. Pollinator dependence is linked to 5-8% of global crop production, and these crops account for much of the recent growth in agriculture. There are documented declines of wild pollinators and managed honeybees in parts of Europe and North America. Globally the state of wild pollinators is not well known, and the total number of managed honeybee hives is increasing. Pollinator dependent crops shown lower yield improvement over time and more yield variability.

The most important drivers of change for pollinators include loss and degradation of natural habitats, intensification of farming, use of pesticides, climate change, and spread of pathogens, pests and invasive alien species. It is important to recognize that these factors interact and may cause synergistic effects. Around the world there are many different examples of actions that support better outcomes for pollinators and pollination. Some relate directly to land management options, such as protection and restoration of habitats, especially in and around agriculture. Many indigenous cultures have production systems that support diverse and abundant pollinators, and other practices that protect pollinating animals and their habitats. Some solutions seek to change behavior, such as by rewarding farmers for pollinator friendly practices, or by training beekeepers in bee husbandry techniques. Whereas some countries have strong and beneficial regulations that limit pesticide mis-use or that reduce the risk of spreading new diseases or invasive species, in many parts of the world these regulations are not at a level where they can be effective. Better management of pollinators and pollination in the future will require improved monitoring of status and trends, including monitoring of actions adopted to improve outcomes. There is also a need for improved capability, especially regarding pollinator taxonomy.

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Facilitating the Development of a Taiwan Partnership for the Satoyama Initiative (TPSI): A progress report on the SDM 2016 project & IPSI collaborative activity

Keywords: Taiwan Partnership for the Satoyama Initiative (TPSI), socio-ecological production landscape, collaborative planning, strategic framework

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Background and Challenges of the Satoyama Initiative in Taiwan

Ever since the Satoyama Initiative (SI) was introduced to Taiwan in the late 2010, it has received great popularity from the government and the general public. Practices engaging in conservation and revitalization of socio-ecological-production landscapes (SEPLs) in compliance with the goal of Satoyama Initiative are on the rise. Especially, the Forestry Bureau (FB) of Council of Agriculture has been working with universities, NPOs and local communities on ecological restoration of rice terraces and wetlands in the name of SI since 2011. However, there are at least four challenges ahead concerning the promotion of SI in Taiwan (Lee, 2014; Sia et al., 2015) including a lack of a national policy and strategic framework, a lack of an indicator system for monitoring SEPLs, a need for relevant research for adapting SI into national and local contexts, a lack of a capacity-building mechanism for practitioners and a need for on-the-ground and collaborative activities in different regions of Taiwan. Therefore, it calls for a more integrated approach to setting up a national strategic framework for promoting SI in Taiwan. Learning from the operation and experiences of the International Partnership for Satoyama Initiative (IPSI), National Dong-Hwa University (NDHU) proposed a national strategic framework for the SI in 2014 and worked with FB to launched a 4-year pilot project for establishing a Taiwan Partnership for the Satoyama Initiative (TPSI).

Strategic Framework and Activities of the TPSI 2014-2017

'Think global,' 'adapt national' and 'act local' are considered interrelated hierarchical concepts which help to sort out the targets and tasks for promoting SI in Taiwan. Learning from IPSI Operational Framework, a TPSI Strategic Framework is developed as Figure 1, including 2 target and 5 task clusters of activities. Figure 2 shows the relationship among TPSI, IPSI and the Satoyama Initiative. The first target, corresponding to 'think global' and 'adapt national,' is about addressing issues of SEPLs and formulating solutions. Three tasks related to the first target include 1) enhancing international participation and exchange (activities including contributions to IPSI conferences and workshops, conduction of international conferences and workshops concerning SI in Taiwan); 2) working on policy research and strategic framework for implementation (activities including reviews of problems and opportunities of promoting SI in Taiwan, a mid-term national strategic framework for

promoting SI in Taiwan); 3) facilitating knowledge of indicators for monitoring (activities including participatory evaluation of indicators of resilience of the SEPLs in Taiwan).

The second target, corresponding to 'act local, is about conservation and revitalization of socio-ecological production landscapes. Two tasks related to the second target include 1) enhancing capacity building for on-the-ground practitioners and relevant governmental institutions (activities including field trips for exchange of knowledge and know-how among on-the-ground practitioners; workshops of case study reports for on-the-ground practitioners in line with SI); 2) enhancing and networking on-the-ground activities (activities including working on regional and national TPSI networks).

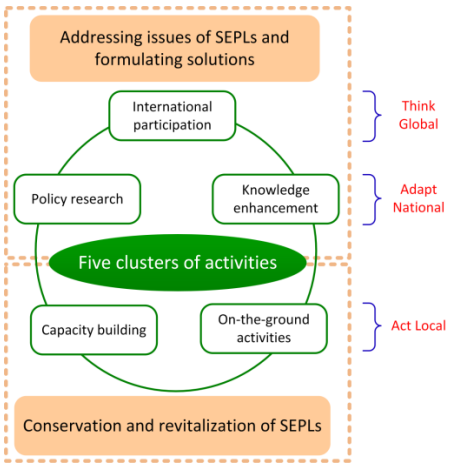

Figure 1. TPSI Strategic Framework
(based on IPSI Operational Framework, 2010)

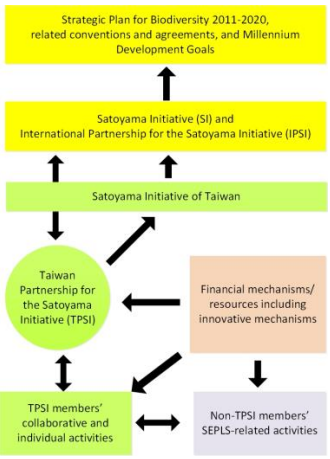

Figure 2. Relationship among TPSI, IPSI and SI
(revised from IPSI Secretariat and UNU-IAS, 2013)

Promotion of the SI in Taiwan has become a new national policy announced by the new minister of Council of Agriculture in May 2016 and by the new director of the Forest Bureau (the second author) in July 2016. There are now 7 IPSI members in Taiwan and all of them have been involved in TPSI activities. From 2016, four Regional TPSI Networks (including north, west, south and east) have been built up for capacity-building and on-the-ground activities. In Taiwan we have started to incorporate concepts of SI into wider landscape and seascape management through reconnecting 森-川-里-海 (forest-river-village-sea). The goal is to build up a national 'Green Network' beyond the upstream national forests and protected areas through reconnecting natural area conservation, rural landscape revitalization and urban partnership. For this new mission, we are just starting.

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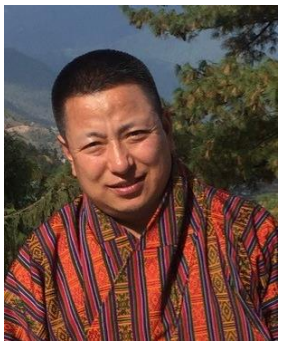
Restoring and Managing landscapes in *Gamri* Watershed, Tashigang



Keywords: landscape, *Satoyama*, *Gamri* watershed, zones

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The *Satoyama Initiative* and *Gamri* watershed: Bhutan joined the second phase of the Community Development and Knowledge Management for the *Satoyama* Initiative (COMDEKS) in 2013. *Gamri* watershed under Tashigang District, located in the eastern region of the country was selected at the target landscape of COMDEKS implementation in Bhutan. The watershed has a total area of 745 km^2 covering a diverse climate and ecosystems ranging from alpine, cool temperate, temperate, to broadleaf forests. Agriculture, livestock/yak rearing and weaving are the mainstay of the people of the watershed.

Gamri Watershed is of high significance as it intersects, and cover a large portion of the Sakteng Wildlife Sanctuary which is home to several globally threatened and endangered animal and bird species. Paradoxically, the watershed is plagued with mounting environmental problems, mainly resulting from excessive grazing, over extraction of natural resources, and deforestation. Based on the general characteristics and problems associated with the watershed, it was categorised into three distinct zones: Zone I – Upstream, Zone II-Midstream, and Zone III- Downstream.

A community based approach to resilient and sustainable landscapes in *Gamri* Watershed: A landscape-wide baseline assessment using Socio-Ecological Production Landscapes (SEPL) indicators revealed that environmental and socio-economic problems, and its consequences in different Zones of the landscape were interconnected. Majority of the environmental problems in Zone II and Zone III were the result of overgrazing and environmental degradation in Zone I.

Satoyama Initiative's holistic and integrated landscape approach was employed to collectively address interconnected and interdependent environmental and socio-economic problems of the landscape through meaningful engagement, dialogue, and empowerment of communities in different Zones of the landscape. Interventions resulted in improved linkage and dialogue of stakeholders and communities living in different zones; restoration and securing of key

ecosystems that provide essential ecosystem services; improved rangeland and natural resources management; alternative livelihood and income generating opportunities; and better access to clean and safe drinking water.

Saling village, Zone II – Midstream, COMDEKS Landscape, Bhutan

Mainstreaming landscape approach: COMDEKS approach provides a dynamic process to assess landscape challenges, and find collective solutions, that are practical and addresses felt needs of communities through engaging multiple stakeholders and partners. Meaningful engagement of the communities promotes accountability and ownership, contributing to the long-term sustainability of interventions and outcome.

In *Gamri* Watershed, the landscape approach was effective and mainstreamed through productive partnership and involvement of local government, and forest, livestock and agriculture extension staff of the communities in project design and implementation. Experiences and tools will be beneficial in the planning and implementation of annual local development plans and community projects and grants.

Satoyama SEPL indicators was used for landscape-wide baseline assessment for designing the SGP Operational Phase 6 Country Programme Landscape Strategy of Manas River Basin.

Recommendations: The outcome of a landscape-wide baseline assessment using SEPL indicators is very much dependent on facilitators' skills. As such, choosing appropriate facilitators with in-depth knowledge and understanding of landscape, traditions and cultures, and customary practices of people is critical.

The indicators are very broad and difficult to explicitly communicate to local communities, suggest developing directed sub-questions under each indicator. Further, *Satoyama Initiative* approach and tools may be developed into training modules and mainstreamed in the curriculum of "environment and development" training courses.

Indigenous Community Conservation Area: Sabah Parks Initiatives

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Indigenous Community Conservation Area (ICCA) had been recognize and supported by International Organizations as a crucial actor in conservation. However, until now the ICCA is still not fully implemented by government agencies. Most of the ICCA, is not yet recognized by governments and is still neglected within official conservation system, policies and legislations. The concepts of Community Use Zone (CUZ), Kinabalu Ecolinc Project and empowerment of indigenous peoples to use and manages parks areas for tourisms activities will be shared. This presentation, highlights the Sabah Parks initiatives to recognised and empower indigenous communities in and around park areas in Sabah.

The "Tagal System" – A Community-Based Fisheries Management

Keywords: Tagal, community-based, customary law, Department Of Fisheries Sabah (DOFS)

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The "Tagal" System

The "Tagal"System is a Community-Based Fisheries Management (CBFM) carried out in rivers and traditionally undertaken by the local community of Sabah from time immemorial. The word "Tagal"is a local dialect meaning – "Not allowed" or "Prohibited". This system is base on the local customary practices and native customary law of the community. Basically, codes of conduct and rules which include rotating open and close season, no illegal fishing gears to be used and the size of fish to be taken are not usually written down but are passed down through verbal tradition and/or come about through the ruling of a village headmen or native chief of each community. These by-laws vary between villages and communities.Penalties for breaking by-laws will be fined in the form either of "animals" or the modern day cash equivalent.

Support From The Department Of Fisheries

The "Tagal" System is in line with the objectives of DOFS. As such the Department of Fisheries supports the effort of local communities to carry out the Tagal system. The Department also recognize that fish resource conflicts can be better managed when community are more involved in the daily management of resources. Apart from that the Department also recognizes the commitment to policies

and programs of decentralization and community-based management and co-management. Wide Community engagement and participation are required to support the Tagal system. Currently there are 536 Tagal system sites involving the 221 rivers in 20 districts throughout the state that was created jointly by the local community and the Department of Fisheries Sabah. Efforts to develop the Tagal system will be continued in the 11th Malaysia Plan (2016-2020) to achieve the target of 700 tagal system under the National Agro-Food Policy by 2020. The Tagal system has been developed and emulated by the State of Sarawak (System Tagang) and Pahang.

Issues And Challenges

Issues and challenges faced by the Tagal system in the state include the following:

- Conflicting river use (e.g taking river sand/stones)
- The power to impose fines.
- Overlap private land.
- Conflict construction of other structures.
- Rivers being "tagal" too long.
- Fights between leaders / people in the village.
- Tagal system to a halt/not active.
- Gaining Recognition.

The Way Forward

Actions, recommendations and the way forward being carried out by the Department of Fisheries in solving the issues and challenges would include:

- Signing Memorandum Of Understanding between DOFS and Community.
- Through some process and considering other users.
- Limit length of the river, sharing tagal system, composition committee, limit of facilities and assistance, zoning, enforcement and penalties.
- River Management and Development by DOFS.
- River Fisheries Resource Management by DOFS.
- Establishment of Community management zone.
- Establishment of the park / Sanctuary DOFS.

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Complex Rice Systems; Putting Ecosystem Restoration into Practice

Keywords: Complex rice systems, ecosystem restoration, smallholders

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Global rice production and the importance of ecosystem function restoration for smallholders.
Rice is the staple food of nearly half the world's population, of which more than 90% is concentrated in Asia. Rice is cultivated in a wide range of ecosystems, from upland to lowland, from rainfed to irrigated and from deep water to tidal marsh. The majority of rice farmers are smallholders and vulnerable to environmental and market changes. Besides the fact that green revolution packages have levelled off in terms of the rice yield, they also have created a dependency on external inputs and caused widespread environmental pollution through water flows in rice systems. This has caused significant biodiversity loss and led to ecosystem dysfunction. Ecological restoration of damaged rice ecosystems can potentially improve water and air quality and slow biodiversity loss by re-introducing plant and animal species. This creates benefits for smallholder farmers and human livelihoods. Although the potential contribution of biodiversity to the functioning of agro-ecosystems have been studied intensively, practical implementation in agriculture remains scarce[1]. Our project on complex rice systems (CRS) provides a practical model of ecological restoration.

CRS project on rice production systems in East Java.
In a collaboration between IORC and FSE, the project is conducted in East Java, Indonesia following a three-step method consisting of an on-farm experiment, a workshop and a participatory learning processes of the farmer field school (FFS). The project emphasizes the restoration of functional rather than compositional diversity to restore ecosystem functions of (i) weed and pest suppression and (ii) nutrient cycling. Re-introduction of fish and ducks in rice systems can suppress weed and pest infestation by exploiting the feeding and movement behaviour of these species. Growing border plants to attract natural enemies strengthens this function. Edible border plants also provide additional ecosystem services: provision of nutritious food, improvement of farmer income, and nutrient cycling by integrating sunhemp as N-fixing plants in the rice systems. Together with azolla, sunhemp, is cycled by fish and ducks through their feeding system: the excreta provides nutrients for rice. The restoration project was replicated in other areas with slight adjustments to the elements and design. The three-step method can be used to duplicate the model to other areas.

A sample of CRS in East Java, a. in Lamongan District; b, in Malang District

Challenges to mainstreaming CRS to restore ecosystem functions and services

Three main challenges may limit the widespread implementation of CRS to restore ecosystem functions: high initial capital outlay, illiteracy of smallholders and their lack of access to information, and the lack of immediate benefits. First, the initial capital outlay includes: (i) purchase of materials for fencing and duck housing, (ii) purchase of initial inputs (organic fertilizers, duckling, fish, azolla and border plant seeds) and (iii) labour costs to build and managing the duck house and fish shelter/ pond and to widen the ridges to grow border plants. We recommend adopting a step-by-step approach to implement CRS across two to three rice-growing cycles, starting with the construction of the fishpond and straw collection for duck house, compos and fish feed from previous rice harvest. Cooperation with duck farmers may also be helpful. Second, illiteracy and lack of access to information are obstacles for smallholders. Successful mainstreaming of CRS therefore requires the provision of appropriate training. We organized FFS that combined training and experimentation to improve farmer knowledge on agro-ecology. We recommend using pictures and videos to address the illiteracy of FFS participants. Keys for success are skilled communication, involvement of multiple stakeholders and respect for local cultural practices. Lastly, ecosystem restoration processes provide few immediate benefits. To motivate farmers to implement CRS, we include elements that increase farmer income as an immediate benefit, such as vegetables that are easily grown and sold in rice ecosystems as border plants.

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Mainstreaming Concept and Approaches of SEPLS in Eastern Plains Landscape of Cambodia through CAMPAS Project

Keywords: SEPLS, Eastern Plains Landscape, Mondulkiri, Cambodia

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Jeeranuch Sakkhamduang has implemented a number of rural development and reforestation projects widely in Southeast Asia such as Thailand, Cambodia and Philippines. The rural development projects focus on promoting sustainable agriculture, environmental education and education for sustainable development. For the reforestation projects, she implemented both land and mangrove forests. Recently she works as Associate Program Manager at Institute of Environmental Rehabilitation and Conservation (ERECON), Southeast Asia Office.

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CAMPAS Project

Institute of Environmental Rehabilitation and Conservation, WCS Cambodia, WWF Cambodia, BirdLife Cambodia and Live&Learn Cambodia are conducting the project titled **Strengthening national biodiversity and forest carbon stock conservation through landscape-based collaborative management of Cambodia's Protected Area System as demonstrated in the Eastern Plains Landscape (CAMPAS)** under the supervision of the Ministry of Environment, Cambodia. The project aims to enhance Cambodia's protected area management effectiveness and secure forest carbon through improving inter-sectoral collaboration, landscape connectivity and sustainable forest management system of protected areas, mainstream biodiversity into production landscapes, and promote conservation of carbon stocks'. The project covers five protected areas of Mondulkiri, northeast of Cambodia namely Keo Seima, Phnom Namlyr, Phnom Prich, Srey Pok and Lumphat Wildlife Sanctuaries. Phnong ethic contributes more than 80 percent of the province population.

ERECON's activities

ERECON activities for CAMPAS project focus on enhancing forest cover and carbon sequestration with increase community resource management and livelihood security. In order to achieve the project outcomes and revitalizing Socio-Ecological Production Landscapes, native tree planting and promoting of agro-forestry practices in target villages inside protected areas are progressing. Moreover, to increase livelihood security for target communities, ERECON is forming groups of Non Timber Forest Products (NTFPs) utilization and management to enhance gender equity in natural resource utilization and management. The promoting of agro-forestry instead of slash and burn practice in upland farms not only benefit to ecosystem but also increase the variety of food to be produced in farmlands. The group of NTFPs utilization and management increase the management capacity of group members as well as increase income for securing their livelihood. These two practices are expected to be replicated over the Eastern Plain Landscape of Cambodia.

Challenges and opportunity to mainstreaming SEPLS

The challenges of mainstreaming SEPLS concept in the target areas include landuse changes, decrease of forest cover, unsustainable management of natural resources, population growth and in-migration, hampered by locals and relevant authorities are lacking of knowledge and understanding for maintaining SEPLS.

Multi-stakeholders include NGO partners, relevant authorities such as Ministry of Environment, Provincial Department of Environment, Forest Administration and etc. and civil society (Community Forest Management Group or Community Protected Area Management Groups) are involving with CAMPAS project. With the collaboration of the mentioned stakeholders, there is an opportunity to mainstream the concept of SEPLS either in national level through policy makers in the relevant ministries or in project site level through various activities implemented by NGO partners and civil society. The expected outcomes are not only enhancing carbon stock through well managed protected areas and supporting community livelihood but also sharing concept and approaches of SEPLS to the stake-holders in the Eastern Plains Landscape of Cambodia.

Recommendation

As mentioned before that multi-stakeholders both policy makers and conservation and development agencies are implementing CAMPAS project. It is a good chance for conservation and development agencies work in the landscape level to feedback knowledge and lessons learnt to policy makers in order to conserve socio-ecological production landscapes in Mondulkiri and to be replicated in other parts of the country.

Figure 1. Change in landuse in Mondulkiri province, Cambodia

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Mainstreaming People's Knowledge in Biodiversity Conservation in Sacred Landscapes of Nepal

Keywords: Sacred landscape, biodiversity, mainstreaming conservation, local knowledge

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BACKGROUND

A study was carried out in two sacred landscapes, Pashupati (government managed) and Bajrabarahi (community managed), to comparatively examine the efficiency of two management systems in conserving the tree diversity in Kathmandu Valley, Central Middle Hill physiographic region of Nepal. Both sites have a history of centuries of sacred landscapes preserved as a result of strong religious and socio-cultural practices and belief systems in the Hindu societies. Mainstreaming of conservation knowledge among the local communities can play a vibrant role in further protection, conservation and management of sacred landscape that are under threat. The outcomes of study are expected to contribute valuable inputs in understanding the perceptions of the people in biodiversity conservation and in redesigning conservation policy for the nation.

MAINSTREAMING THE CONSERVATION KNOWLEDGE

Sacred landscapes are traditionally managed by using the indigenous knowledge inherited by the local communities without having much support from the government in Nepal. The increasing influence of globalization, urbanization, encroachments and erosion in religious values and practices are mostly responsible for weakening conservation practices, thus degrading the status of the sacred landscapes. Modern conservation knowledge and methods can prove to be better options if integrated with traditional knowledge in the biodiversity conservation. Lack of sufficient awareness, poor local institutional capacities, insufficient capital and traditional belief systems are some of the major factors hindering in mainstreaming the conservation knowledge. Younger generation of Nepal can prove to be a national strength in conservation programs if they are involved in conservation activities by enhancing their knowledge supported by modern conservation approach and methodologies.

CHALLENGES IN MAINSTREAMING THE CONSERVATION KNOWLEDGE

Conservation practices based on traditional methods without modern knowledge and tools, and poor institutional capacity are the major problems in mainstreaming the conservation knowledge of the local communities of Nepal. Community awareness, as a basic foundation stone for conservation, regarding the role of sacred forests in biodiversity conservation and ecosystem services provided by them is missing among the local people. Community based local conservation organizations having

inadequate capacity and unavailability of satisfactory funds always continue to impede the conservation efforts. In Hindu religion, the time has come to change the concept of sacredness and resource utilization from a sacred landscape where people still depend on natural resources for their survival and livelihoods. Therefore, mainstreaming of knowledge regarding the use of resources from a sacred landscape should be taken as a reward rather than sacred assets that belong to god.

RECOMMENDATIONS

Change in national policy is required to involve all stakeholders in planning, preparation and implementation of conservation activities. Mainstream the conservation knowledge to strengthen the local knowledge and capacity with adequate support from the government.

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Selection of drought resistance grain legumes for rice agroecosystems and food security

Keywords: rice field, low yield, legume crops, drought resistance, food security, ecosystem

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Background and objectives

In Timor-Leste, geographically, the country dominates with mountainous and hills and thus there are limited productive flat lowland areas. The productive lowland areas are mainly used for rice production once a year. This is because there is lack of irrigation water resources to supply for another crop. Due to a rapid increase in the population, the productive lowland areas are increasingly limited. As this lowland, however, has not been optimized for crop production, meanwhile rice yield also very low due to low inputs. A research approach to increase rice productivity through introducing legume crops after rice was initiated several years ago. This approach will also provide additional grain yield to enhance farmers' food security. The objective of current study was to investigate adaptive species under terminal drought and its impact on the growth and yield of potential identified grain legumes

Methods

The study was carried out in a horticultural production area (previously used for rice production) of Manleuana, Dili from May to September 2016 using a randomized block design with three replications. Four local grain legumes (standing bean, cow pea, green pea and soy bean) and one introduced legume (grass pea cultivar Ceora) were used in this study. Seeds were sown on June 24, 2016 at 3 seeds/hole, 2 to 3 cm deep and at a distance of 25 cm by length and 20 cm by width. Drought treatments were started at 60 days after sowing. During the treatment, soil water content was measured and at harvest, and number of plant nodes, height, pods and seed weight including 100 seeds dry weight and plant dry weight and seed yield were measured.

Results and Conclusion

This study observed that all legume plant species tested produced high biomass ranging from 5.5 to 31 ton/ha for bean with droughted treatment and cow pea with control treatment, respectively which was comparable to previous study reported by Gusmao (2016). Seed yield ranged from 3 to 9 ton/ha for grass pea and green pea, respectively. In particular bean that, to the current knowledge only be grown in high elevation with cold climate matured earliest than any other species and produced seeds of 7 and 5 ton/ha with control and droughted treatments confirming its well adaptation to low land areas during the dry season. This study also confirmed a well adaptation of grass pea cultivar Ceora to a new environment of Timor Leste where it produced yield ranging from 2.9 ton/ha to 4.5 ton/ha in droughted

and control plants, respectively. This yield was relatively higher than other field trials in Western Australia (Gusmao 2010; Gusmao et al,2012). This study observed that all legume plant species tested produced high biomass and thus yield that are potential to grow them after rice to restore soil ecosystems and hence for the following rice production. For a particular purpose of seed production, beans following by green pea would the most reliable species to grow when water availability is a limiting factor.

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Integrated Satoyama Initiative into NBSAP

Keywords: Satoyama Initiative, Cambodia

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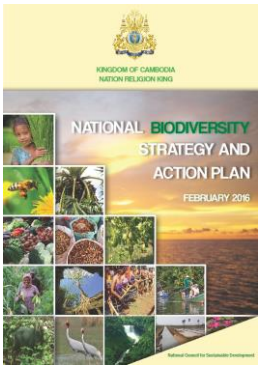
The Satoyama Initiative:

The Satoyama Initiative is a global effort to realize societies in harmony with nature, through promoting the maintenance and rebuilding of socio-ecological production landscapes and seascapes (SEPLS) for the benefit of biodiversity and human well-being. In 2000, the world community endorsed the ecosystem approach as the primary framework for the management of biodiversity. The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. The activities of all sectors affect biodiversity and can contribute to, or detract from, the conservation of biodiversity, the sustainable use of its components and ecosystem services, and the fair and equitable services from the utilization of genetic resources. Thus, most problems relating to biodiversity management are complex, with many interests from various stakeholders, a wide range of interactions among the ecosystem components, and side-effects and implications, and should therefore involve the necessary expertise and stakeholders at the local, national, regional and international level, as appropriate.

NBSAP Theme 23: Landscape and Seascape Management and Coordination

Landscape approach looks across large, connected geographic areas to more fully recognize natural resource conditions and trends, natural and human influences, and opportunities for resource conservation, restoration, and development. It seeks to identify important ecological values and patterns of environmental change that may not be evident when managing smaller, local land areas. It provides an important foundation for developing coordinated management strategies with partner agencies and stakeholders, and should thus be applied from the planning stage through to monitoring and reporting. The landscape and seascape approach encompasses the concepts of integrated watershed management, river basin management, and coastal area management, which integrate multidisciplinary approaches to the management of biophysical, social, and economic issues affecting water resources and their uses. As a member of the International Partnership on the Satoyama Initiative, Cambodia supports the Satoyama Initiative dealing with socioecological production landscapes and seascapes (SEPLS) found in many places in the world under different names and deeply linked to local culture and knowledge.



Challenges and solution:

The following key issues were identified:
(a) Loss of native species;
(b) Habitat fragmentation;
(c) Limited coordination among stakeholders;
(d) Ecosystem approach and its 12 principles are not widely known and applied;
(e) Coordination and cooperation among stakeholders and indigenous and local communities are limited; and
(f) Information about landscapes and seascapes is limited.

Strategic objectives:

Strategic Objective: Improve landscape and seascape management and coordination for efficient, enhanced and synergistic conservation and sustainable use of biodiversity components.

The implementation of actions relating to Landscape and Seascape Management and Coordination will benefit from the activities carried out to enhance community participation and participatory approach, supported by legislation and institutional structures such as the National Biodiversity Steering Committee, currently National Council for Sustainable Development. These actions will also benefit from the CHM that is facilitating technical and scientific cooperation, knowledge sharing and information exchange and from actions under many other themes of NBSAP, in particular the theme of Awareness, Education, Research Coordination and Development. These actions will also contribute to the design and implementation of protected area systems, adequate management of mining, wise use of biological resources, as well as water resources including in the tourism sector.

References: NBSAP 2016, CAMPAS Prodoc revised 2016, BBP Project 2016, GEF-6 Draft PIF

Strengthening village economies through Agroforestry innovation with biochar for increased biodiversity and livelihood options in middle hills of Nepal

Keywords: trees on farms, terrace risers, carbon sequestration, livelihoods, fodder production

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General Information

The reforestation of the Earth may well be the last resort to save humanity from climate change and bio-monotony. If we don't start now to grow trees, even if only with small projects, the dust under the sky will cover the last blade of grass. In Nepal, when the disaster of the trembling earth struck, women farmers of Ratanpur village in middle hills of Nepal decided to plant trees and recreate life so that the lost generation will return. 10,775 trees were planted in the year 2015 followed by plantation of 16210 trees in the year 2016 with wider participation including second village (Bandipur) women group in the same region.

What parts can be replicated or included in the policy

The objective of this reforestation with biochar was to re-fertilize and protect the soil, capture carbon, increase biodiversity and generate a stable income and thereby increasing livelihoods of local communities. These pioneers became the first village in Nepal to sell carbon credits from plants that grow food for their children and sequester carbon for the planet. Of the total trees planted in the first year by 30 farming households, more than two thirds of the trees survived in the new agroforestry system that sequestered the equivalent 74 t CO2 per year. Carbon payment was made to the first farmer families in presence of District Forest Office staff and Community Forestry User Group members. The study revealed that due to the carbon credits the first year participating farmers have been able to increase their extra income by 13% compared to second year planting group (6%). The poverty level also varies significantly between groups (first village poverty level = 24% and second village = 50%). The scheme for carbon credit payment to farmers can be replicated in other area. The process for mainstreaming the carbon credit payment system has already been initiated with the Ministry of Forest and Soil Conservation. The use of biochar to enhance fertility level of soil has also been recognized by the policy level experts and professional.

Challenges for mainstreaming

1. Increasingly unpredictable monsoon rains are making annual cropping more prone to crop failure.
2. Excessive use of chemical fertilizer has exhausted soil fertility level
3. Dependency on buying fossil fuel for processing of forest products
4. There could be a chance of dying planted seedlings because of drought and irregular rainfall

5. Because of declined productivity, rural youth, basically from poor and marginalized families have migrated for jobs in urban cities and aboard and women suffered.

How these challenges for were resolved

1. Diversified legume mixed high value Agroforestry cropping
2. Urine biochar organic fertilization that replaces chemical fertilizer
3. Utilizing waste energy from biochar making kon-tiki during oil processing
4. Replenishment or construction of soil water pits/ pond
5. Creating job locally with increased economic activities- agro-tourism, carbon trading and new forest products development

Recommendations

- Working through local Forest User Groups (CFUGs/ or LFUGs) within VDC and municipality
- Mobilization of women sub-groups within CFUGs or LFUGs
- Joint adaptation planning with respective VDCs / Municipalities and other district line agencies as appropriate (DFO, DADO, DSCO)
- A triad system (a group of 3 hhs) will be developed to act and monitor the agroforestation activities, which was already tested in Ratanpur and Bandipur. If one farmer of a group fails to keep the plantation survival below 90%, other two members of the triad will not be illegible to receive carbon money. This has been effective to guaranty > 90% tree survival this year compared to only 60% survival last year.
- Implementation through collaboration with DFO and local administration unit

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Mainstreaming Green Economy for Setiu Wetland, Terenganu, Malaysia

Keywords: Setiu Wetland, Green Economy & Mainstreaming Green Economy

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GREEN ECONOMY AND THE FUTURE

The importance of embracing green economy for future livelihood must be centre-staged for the sake of the earth and future generation. Implementable and viable green economy models must be intelligently crafted in order to allow replications be made as easy and speedy as possible. With such abilities, sustainable economic growth can and will be able to replicated one community at a time and hopefully, within the shortest possible time the replication will be contagious enough to create global implementation of sustainable economic growth.

SETIU WETLAND AND ITS STRENGTH

Setiu Wetland is earmarked to become the model for sustainable economic growth in Terengganu. Best practices in green economy will be developed, enhanced and documented in the development of Setiu Wetland Initiative. The program will then be published and adopted to allow speedy replication of the sustainable economic growth model for Terengganu State and Malaysia. The final intention of this Setiu Wetland Initiative is not to compound it within the geographical boundary of Malaysia only.

Setiu Wetland lies 40 kilometers north of Kuala Terengganu, Terengganu, Malaysia. It is an ecosystem of eight rivers with mangrove and nipah palm trees banking the rivers, an estuary of 800 hectares natural lagoon, a lake, Tasek Berombak, that traditionally functions as flood mitigation and buffer zone and a source of economic activities for the local communities and a turquoise blue sea front where coral and sea grass grew and protects the shoreline. As such, Setiu Wetland offers a unique combination of landscape and seascape potentials for the green economy development.

IMPLEMENTATION PLAN

A five year plan is hoped to produce significant data and information that will be integral towards the modelling of Setiu Wetland Green Economy. During this period, data will be analyse, simulation will be made and field data will be validated to ensure the intended program will be verified and validated. A comprehensive earth observation system will be establish and various methods of data and information gathering techniques will be adopted to ensure the modelling of Setiu Wetland Green Economy will be accurately established.

Setiu Wetland Initiative is expected to create the wetland as the regional reference centre for prudent habitat and eco-system management. The Initiative will prove that sustainable economic growth whereby local communities will be able to enjoy balanced economic and social livelihood while guaranteeing the sustainable environmental considerations be maintained and protected.

Engaging with the private sector for ensuring sustainability of socio-ecological landscapes in the Northern Western Ghats of India- opportunities and challenges

Keywords: Sustainability, SEPLs, Private sector, Western Ghats, India

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Abstract

Biodiversity conservation is one of the key sustainability challenges globally. Large scale threats to biodiversity conservation arise from perception gap among the key stakeholders related to use and importance of biodiversity and ecosystem services in economic growth. Private sector companies including financial institutions play critical role in deciding fate of key biodiversity areas through their decisions on investment for "development " projects. If properly guided through capacity building and on ground examples, private sector investments could be utilized for promotion of sustainable biodiversity use. Scalable success models in conservation are rare as they need long term investments. Mainstreaming the conservation of socio-ecological landscapes through engaging the private sector could result in achieving the conservation outcomes on broader scale. The present communication discusses the opportunities and challenges of involving the private sector for landscape level biodiversity conservation in the North Western Ghats. Concrete examples of engagement with 3 different private sector companies are provided. Lessons learnt and strategies for better engagement for mainstreaming conservation of SEPLs are also shared.

Enhancing Livelihood of Rural Communities Through Sustainable Use of Natural Resources

Keywords: Good Practices for Diversity (GPD), Community Biodiversity Management (CBM), value addition, enhancing livelihood, sustainability

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Wong, W. W. W., was a past UNEP project leader and coordinator for Sabah on '*Conservation and Sustainable Use of Cultivated and Wild Tropical Fruit Diversity: Promoting Sustainable Livelihoods, Food Security and Ecosystem Services*' funded by UNEP/GEF from 2009-2014. The stakeholders are the government and the local communities participating in the project *viz.* in the districts of Papar and Kota Belud. He graduated with a M.Sc. in Technology of Crop Protection from Reading University, England in 1982 and was with the Department of Agriculture as a Research Officer for 33 years. He worked on tropical fruit trees and their botany and conservation. He was also the Principal Assistant Director (Research) and Head of the Agriculture Research Centre at Tuaran from 2010 until his retirement on 31 December 2016.

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The UNEP-GEF and JICA Projects-Lessons Learnt

Both projects focused on the socio-economic issues of the rural communities and the use of natural resources by these communities on a sustainable basis while emphasizing on conservation and promoting species diversity as the key objective. The UNEP-GEF project encourages two different communities, one in Papar and one in Kota Belud to identify Good Practices for Diversity (GPDs). Community Biodiversity Management or CBM method was used to promote conservation and sustainable use of biodiversity as CBM targets the community while encouraging *in-situ* conservation. Sites chosen were high in species diversity and the communities are of two diverse ethnic backgrounds. Production, management and conservation of fruit tree diversity, product development, value addition and packaging were introduced to the communities(Wong *et. al*. 2016)thereby increased household income and enhanced the livelihood of the communities.

On another aspect, the key concept of *Satoyama* on sustainable land management at Tudan Village, Tuaran was described by Suzuki *et. al.*(2015) from JICA-SDBEC experience. Here the marginal soils with limited use for agriculture was able to sustain swidden agriculture as practised by the community. To enhance the economic incentives of the community while also promoting conservation practices on the environment, tree crops, e.g. mulberry cultivation together with beekeeping activities were encouraged. Training the community to go into downstream processing of mulberry into jam and packaging honey has helped the community to earn extra income. These activities will reduce adverse impacts of encroachment by the community into new areas, thereby preserving the environment from further degradation.

The successful intervention of both projects upon the targeted communities may serve as models for the surrounding communities to emulate, thereby fulfilling the main objectives of these projects.

Barriers / Challenges to Mainstreaming the Activities

GPDs are the mainstream activities for conservation in addition to help generate extra household income. Attitudes and cultural differences of the communities were the main barriers because these 'self-help group' projects don't hand out subsidies. Awareness programs on biodiversity and environment

conservation are needed before the projects start. Face-to-face intervention with the communities, PRA workshops at the village level and resources mappings were done. Capacity building at the community level includes introducing simple technology and biodiversity resource and TK documentation. The literacy level of the communities is low and the project teams must use simple social studies tools to obtain information. Participants of the projects are mainly the older folks since the younger generations prefer more secure jobs in major towns and the city. In addition, both projects are social research in nature. The project teams are Agriculture Research Scientists and they have minimal exposure to such projects, thus making the initial learning curve rather steep.

Recommendations and Solutions

Issues	**Underlying Problem(s)**	**Recommendation(s)**	**Method(s) Adopted to Solve Issues**
Attitude	• Cultural background • Dependency on subsidies	• Awareness programs • Mind-set changes	• GPD and CBM Models /Methods
Literacy Level	• Level of education • Language	• Employ participatory social research tools	• PRA, FGD, FCA, Venn Diagram • Story telling
Urban Migration	• Older generation left to work on the farm • Job security for the younger generation	• Create lucrative income from the farm and products • New uses for products	• Processing technologies • Value addition • Product development
Social Research Projects	• Facilitators unfamiliar how to handle such projects	• Understanding the local context	• Capacity-building trainings and workshops
Long-term Sustainability	• Interest • Income generation	• Open new markets • Public awareness	• Diversity Fairs • TK documentation • Co-operatives

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SEPLs in Nepal: approaches to replicate and scale up

Keywords: ecotourism, natural resources, community development, buffer zone, livelihood

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Mr. Shakya has been addressing several international forums on biodiversity communication, conservation awareness, wildlife conservation in Europe, Asia, Africa and the America (since 1996-present). He has initiated environment support fund (1999-2005) through government of Finland and Ministry of Environment Nepal to fund local conservation oriented NGOs and CBOs. Currently he is associated with International Union for nature conservation (IUCN) as a regional councillor and member of Asia Pacific Biodiversity Network (APBON). Mr. Shakya is a Executive Chairman of Wildlife Watch Group (WWG-since 2002-present) and Editor of Wildlife Times since 2007.
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The communities and user groups of Nepal's SEPLS are uplifting their status from stakeholder to shareholder, turning ecology into ecotourism. The central government once regarded as master of natural resources, gradually empowering people through various policy shifts and direct incentives measures.

About 1.45 million households (35 percent) of the population of Nepal is involved in community forestry management program. To date, **17,685** Community Forestry User Groups (CFUGs) have been formed. A total of **1,652,654** hectares of National forest have been handed over as community forests and **2,177,858** households have benefited.

The amendment of the National Park and Wildlife Conservation Act in 1992 made the provision of buffer zone for protected areas. Between 1996 and 2010 Government of Nepal demarcated buffer zones of 12 protected areas covering 5602.67 square kilometer in 83 VDCs and two Municipalities of 27 districts where benefiting human population is over 0.9 million.

Chitwan case of reflection and policy change

Chitwan or "Heart of the Jungle" is famous as one of the best wildlife-viewing landscape in Asia and was declared a UNESCO World Heritage site in 1984. Located in the Terai lowlands of Nepal - the landscape is famous for its success in conservation.

543 species of birds. 605 species of animals. The last vestiges of the rare one-horned rhinoceros. The last refuge for the Bengal Tiger. Elephant grass that is 4 metres tall.

The Chitwan consists of tropical and subtropical forests. Sal (Shorea robusta) forest covers 70 percent. Sal leaves are used locally for plates in festivals and religious offering. Grasslands cover 20 percent of the park. There are many more than 50 different types of grasses distributed including the elephant grass (Saccharum spp.) renowned for its height (up to 8m) the shortest grasses (imperata) are used for roof thatching, mats, rope and paper making. Grass for thatching house roofs is permitted once a year in the and not other time, which is of great economic help to the local and local communities. An entrance fee is levied to enter the forests, which were once free for all to use.

The landscape and the local people jointly initiate community development activities and manage natural resources in the buffer zone. The government of Nepal has made a provision of plowing back 30-50 percent of the park revenue for community development in the buffer zone.

In the landscape in 1973 (31/32)the first numbered tourist were 836 and revenue from their was less than USD 10 K 40 years later (71/72) the number of tourist reached to record 178,257 and revenue reached to USD 2.4 million 140 industries are registered. There are around 100 hotels in and around of buffer zone of the landscape. About 3000 local people have been employed.

In chitwan buffer zone has 59,707 households, 2,73, 977 people/users group members in 1781 user groups. These groups create buffer zone management committee since 1998. The committee gets new leadership every 5 years. The committee gets 30 to 50% of the revenue, the latest amount given to committee is around USD 1 million spent on issues like, human wildlife conflict, natural calamities like river cutting, conservation works and livelihood, 140 local industry , 23 cooperatives involving 16,342 as share holders. Around 0.3 million USD as capital, 1.6 million saving, 0.9 million credit.

Challenges and recommendation

Challenges

Growing Multi national companies
New Infrastructure development initiative
Growing industries in buffer zone
Private forest vs community forest

Recommendation

Maintaining protocol of world heritage sites
Buffer zone management committee as park authority
Conservation friendly city
Wildlife for greater life

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Complementarities of Human-Nature Well-beings: A Case Illustrated through Traditional Forest Resource Users of Sundarbans in Bangladesh

Keywords: Sundabrbans, Livelihoods, Biodiversity, Conservation, IPLCs.

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The presentation makes an attempt to examine whether the *livelihood* patterns of the indigenous people and local communities (IPLCs) have contributed to the conservation, sustainable utilization and equitable distribution process of the resources by way of a case study of the Sundarbans of Bangladesh, the largest mangrove ecosystem of the world enriched with abundant biodiversity. The combination of various types of ecosystems (forest, coastal and wetland) makes the Sundarbans a home to several uniquely adapted aquatic and terrestrial flora and fauna. These *biotic* along with other *abiotic* resources of the Sundarbans contribute directly or indirectly to the economy both at local and national levels. A significant number of local people have maintained their livelihoods by depending on these resources. By identifying the Sundarbans Reserve Forest (SRF) area as a socio-ecological production landscape and seascape (SEPLS), the research envisages to reveal that powerful agents at local, national and international levels have been extracting resources of the Sundarbans beyond sustainable limit while the IPLCs are playing important role to restore the natural resources through traditional knowledge and practices in collecting resources in course of maintaining diversified livelihood strategies, which in turn establish a sustainable resource management system. The presentation also attempts to demonstrate that the institutional fragility, the existing nature of power sharing arrangement and the political settlement and most importantly the exclusion of the IPLCs in the conservation and management process have contributed to the losses of biological diversity. The talk also presents quantitative evidence that the local people of the Sundarbans have been practising unique production methods which can significantly contribute to the revitalization and sustainable management of the resources through symbiotic human-nature relationships in the case of natural resource management.

Pictures: Innovative eco-system based adaptation to climate change

The research bases upon the data reservoir of the research institute, the *Unnayan Onneshan,* which has been undertaking several biodiversity conservation programmes and conducting research in the Sundarbans forest region. A significant amount of data was collected through participatory observations, questionnaire surveys, key person interviews and focus group discussions. The study particularly draws on from the traditional knowledge of forest people of the three cooperatives that the *Unnnayan Onneshan* helped to set up – *Harinagar Bonojibi Bohumukhi Unnayan Samity*, *Koyra Bonojibi Bohumukhi Unnayan Samity* and *Munda Adivasi Bonojibi Bohumukhi Unnayan Samity.* The members lead their livelihoods as wood and Golpata collectors (*Bawalis*), fisherman (*Jele*), honey collectors (*Mouals*), shell collectors (*Chunary*), and crab collectors.

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Mobilizing Traditional Knowledge, Innovations and Practices in Rotational Farming for Sustainable Development

Keywords: Traditional Knowledge, Rotational farming, Sustainable Development

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Dr. Prasert Trakansuphakon is from the Karen ethnic group in Thailand. He holds a BA in Political Science, an MA in Non-Formal Education and a PhD in Sociology. Where he worked for over 10 years with indigenous/ethnic peoples as Director of the Inter Mountain Peoples Education and Culture in Thailand (IMPECT), now he is Chair of IMPECT board of director. He is trained and practiced in indigenous knowledge and education and in natural resource management (NRM). He is also involved in diverse related issues, including NRM policies such as shifting cultivation/rotational farming, biodiversity, food security, climate change and sustainable development.

Abstract:

The rotational farming system practiced in Hin Lad Nai is the backbone of the natural resources management system developed by the Karen people. It contains the full range of Karen knowledge and wisdom, including cosmology, spirituality, technical knowledge of conservation practice, as well as values and cultural elements that are needed for any type of bio-cultural diversity management. The concept behind the Hin Lad Nai community governance system stems from the traditional philosophy of elders of Hin Lad Nai. "Land and forest never ends if we know how to take care of it and use it,". However, in 1986 the logging company got a concession from the government to do logging in the area the Hin Lad Nai community. The company cut all trees including the communities' sacred sites. All big trees disappeared and also the wild animals Luckily, finally in 1989 the national government declared a stop to all logging concessions in Thailand, and the company had to finish their destructive activities in Hin Lad Nai.

A case story on Rotational Farmers' innovations to improve soil quality in fallow land through reviving the use of P'Dav trees

What is P'dav? P'dav tree (Macaranga denticulata), The characteristic and benefit of P'dav trees. The P'Dav tree is characterized by a soft trunk and branching roots that spread at shallow depths around the stump. It only propagates with seeds, and not with shoots from the trunk. Seeds can be collected during August and September. Hsau Weij one of farmer he has put his elders' knowledge into practice through experiments on P'dav planting methods, trees caretaking, and seeds collection. Hsau Weij adapted the experiences that his father he selected a normal fallow area, he collected good seeds of P'dav from other places, from trees with an age of 5 to 6 years. He sows them using different methods. Comparison between farming a P'dav field and a normal fallow field. Mr. Somboon Siri, 39, farmer of Hin Lad Nai received P'dav fallow land areas from his uncle Mr. Yauj Weij and continues the experiment with P'Dav until now. P'Dav fallow land requires less weeding effort, compared with the normal trees fallow land. The produce of rice is higher in P'dav fallow land. Comparison between farming a P'dav field and a normal fallow field. P' Dav have less to no damaged plants, pests and weeds compared to normal fields. Plants in the P'Dav field have good health and are stronger than in normal fallow land fields. Last but not least, Mr. Somboon added that produce from P'Dav fallow fields is more reliable, even too dry, too wet etc. the products still reliable. P'Dav normally bear large quantities of fruit, which attracts different animals and insects. P'dav areas therefore become hunting and trapping grounds for humans. The shadow created by P'dav trees helps to control most of the grasses which make the soil poor for crop cultivation. P'Dav trees have grown for 2 to 3 years, as the

leaves falling to the ground keep the soil surface cool and hold rainwater. People also use P'dav trunks for firewood, as they are easy to dry, get soft and good for making fires.

Conclusion and debate:

Successful technique to put less effort in weeding, less grass grows, crops grow well and have good and more reliable produce. Plants are stronger and good nutrients in the soil, less damages or insects. Is P'Dav fallows allow and area to be regenerated and farmed again in only 5 years? some of the farmers say that planting P'Dav may cause them additional workload and they are not really facing a problem with their fallow land and low produce yet. Fallow land play very important role particularly during 1-4 fallow years, it is very important for the wildlife most of terrestrial animal etc. to have space for the housing and breeding in these fallows. While fallow become bigger trees in 4th to 5th year and up wildlife animals come back to the 3rd and 4th year for hide, food and breeding gain, nature mechanism control each other to make a balance of ecosystem. The management of rotational farming cycle manage the sustainable cycle of plants and animals' species in the direction of natural sustainable process. Rights to manage the livelihoods and natural resources e.g. varieties of plants and animals to compliment and control each other in balance and sustainable process. Collected for years in the everyday life of elders and villagers, these collections are expressed from memories and summarized into poetry and songs.

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Dayak Suaid answers to oil palm development threats to landscape and environmental services

Keywords: Dayak, oil palm, West Kalimantan, customary, agroforestry

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DAYAK SUAID AND THEIR NATURE

Kapuas Hulu, a district in West Kalimantan province, has two very important national parks. One is Betung Kerihun which covers around 800,000 hectares and Danau Sentarum which covers around 200,000 hectares. This is why the government of Kapuas Hulu stated that the district is a 'conservation district'. Danau Sentarum (Sentarum Lake) is a critical water source for Kapuas Hulu and host of several freshwater fish species either for consumption or ornamental.

In Kapuas Hulu lives Dayak Suaid, one of Dayak sub-groups, with bigger territory to cover. Their relation to environment, especially land, is critical and close as they consider the nature as their supermarket. During the *ngayau* (tribal war between Dayak sub-groups), Suaid peoples defeated Seberuang peoples and occupy lands around the Seberuang river. This area has a considerable forest landscape which acts as water catchment, water source, timber, food, hunting, fishing, gatherings and beauty.

THREATS, CHALLENGES AND OPPORTUNITIES

Although declares itself as 'conservation district', Kapuas Hulu is the fastest area to develop oil palm plantations in number. Since 2006, 23 oil palm companies have obtained location permits from the local government. They are huge threats for landscapes and even buffer zones around national parks. Some of the communities in Seberuang sub-district are resisting the development of oil palm. Their main reasons relate to land rights and seeing how their neighbouring communities that accept oil palm development suffer from food security and clean water supply, thus horizontal conflicts arise. Furthermore, they need to have more options and security over their land and food.

And what are the options that suit for their landscape or environmental services? There is a new development when communities in Seberuang try to start coffee and pepper cultivation, beside rice as the main produce, and keep the forest intact (for water catchment, timber for domestic use, clean air and beauty); even thinking about eco-tourism. There are particular villages called Bati and Emperiang that are ready to do so, and other villages will follow within Seberuang sub-district. Bati specifically competed in a village competition for management and planning over their resources.

As in rubber that took around 5 decades to be accepted as beneficial to the peoples, it goes the same with pepper and coffee. Even for coffee, they have not tried yet. However, the decision to develop pepper and coffee also based on how their forest will support them with micro climate. What Bati and Emperiang do, light the spirit to other villages. As Village Fund (Dana Desa) is being distributed based on villages' programs, they take this further to develop more area for food producing. How they do it, is by optimization of land, inter-cropping. This is how they practice agroforestry.

Market access for their products is another step that these villages take to ensure the livelihoods of its people. While the beauty of environment and water sources are kept through eco-tourism and conservation of the forest. All of these have a root in culture and customs of the peoples.

RECOMMENDATIONS

The intrusion of land-based investment in Kapuas Hulu proves to be threatening. This should be dealt with strong customary and cultural bodies and laws. Strong means they know what their rights are and how their identity is celebrated, not abolished or ignored.

One pilot project with good impact and result can spread easily to the surrounding. Hence, the introduction of technology could be beneficial. As villages in Seberuang will install internet for their village administration, it can be used also for monitoring and managing landscapes and ecosystem.

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Traditional Knowledge on the Ecosystems Management by the Dusun People of Tambunan District, Sabah, Malaysia

Keywords: Traditional Knowledge, Ecosystems, Management, Dusun Tambunan, Sabah.

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Tambunan District.

Tambunan is a valley district covering an area of 1,347 sq. km in the Interior Division of Sabah. It is located about 80 km by roads to the east of the State capital, Kota Kinabalu. This valley, which is part of the Crocker Range and Trus Madi Range, is covered with lowland and hill mix dipterocarps forest vegetation (Figure 1). The valley is peppered with terraced padi fields and bamboo plantations. Total village about 88 and population is estimated 35,000 (Dept. Stast, 2010). In the early 20th century, the social structure of the Tambunan Dusun (Figure 2) was based on six sub-tribes, namely Tuhawon, Tagas, Tobilung, Tibabar, Gana, and Kohub (Gibon, 1986). Most of them are farmers and forest products gatherers.

Figure 1. Tambunan valley.

Figure 2: The Dusun people of Tambunan.

Traditional Knowledge System of the Dusun Tambunan to protect & conserve environment.

The Dusun people in Tambunan have a long tradition of keeping their natural resources in a sustainable manner to sustain their life. They practice wise use by following two type of systems namely, **Native Customary Laws** and **Traditional Beliefs and Practices**. In the Native Customary Laws or 'Adat Kampung' and 'Pantang-Larang' or Forbidden, if someone committed an offence, he/she will be fine a 'Sogit'. The concept of 'Sogit' is to make peace to the person he/she or environment that he/she hurt or

damaged. There are three categories of fine. The first category is with individual Sogit (Punishable to the individual wrong-doer by village authority or 'Ketua Kampung/Ketua Masyarakat/Ketua Daerah"), the second category is with Sogit to the whole village/community and the third category is without Sogit (Non punishable by village authority but 'Minamangun' or 'Kinoingan' or God will punish him/her). In the first category, it is now gazetted in the Native Customary Laws 1992 of Sabah (Warta Kerajaan, 1992). Anyone found guilty by the Native Courts must pay 'Sogit' or fine. There are namely, Part V. Burial Grounds and Death. Section 27. Damage to grave yard. This includes plants. Part VI. Gross Misbehavior, Indecency and Mischief. Section 40. Adulteration of water sources. This includes any communal spring (Toud), village reservoir or river; Section 41. Trespass. Enter any house or land without permission; Section 44. Injury to livestock or fowl or others; Section 48. Liability for damage by animal; Section 50. Felling trees; Section 51. Disturbance to Dam or embankment; Section 52. Disturbance to customary signification of property e.g. 'Tonduk'. The second category is with Sogit to the villagers/community, namely, 'Paus'. The third category is without Sogit. It is embedded in Traditional Beliefs and Practices. They are namely, Moginupus, Monoruang, Mobpuod, Bambarayon, Lintugi, Hokiu, Gonsuri, Misarawang, Rusod Talun, Mosubak, Tiasok, Rusod Talun/Nulu and Madsalud (Kulip et. al., 2014 & 2016)) and (Kulip, 2015).

In conclusion, the Dusun people in Tambunan have a long tradition system of wise use of their natural resources. This system has been safeguarded by them to create peace, a stable way of life and also to conserve and protect the resources in order to use agriculture, forest and water resources sustainably.

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Customary Management of Natural Resources by Hani People

Keywords: Customary management, natural resources, Hani People, Hani terraces

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A package of interrelated and mutually facilitated threatening factors faced by self-sufficient and sustainable Hani terraces agro-ecosystem, such as accelerating tourism, massive construction development of infrastructure for tourism, fast shifting of livelihood, intrusion and impact of alien culture, increasing pressure from climate change, etc. The matter of water resource management in Hani Terraces ecosystems, which is the core issue in the area where Hani people in habited, is not a popular research topic of natural science, but more importantly a social concern, with cultural sphere as well.

How to optimally manage water resources of Hani Terraces ecosystems in a culturally respectful manner, so as to optimize food provisioning of the ecosystems, sustained multiple ESs, and also contributes to better-off of social well-being and stability? For this issue to be best addressed in a multi-ethnic cultural society, *an integrated science-social-cultural approach* was identified and applied in our research, entitled "a field study on customary management of biological resources by Hani People in Yuanyang County", the core area of Hani world heritage.

The results indicate that customary management of biological resources by Hani People include five pillars, namely, (a) Developing traditional knowledge system: applying adaptive management, fully understanding the natural and social spheres of various natural resources; (b) Principles of wholeness and balance: mainly demonstrated in land use management, such as "forest-village-terraces-valleys" four-pillar structure, village layout and size control, ratio between cultivated land and forest, etc. (c) Principle of sustainable development: mainly demonstrated in management of biological resources, such as conservation of agro-biodiversity; (d) Clear ownership and obligation: Defining ownership and obligation of various sorts of natural resources, water allocation system in particular; (e) Punishment system: Applying customary laws to guarantee the operation of management system of natural resources.

Finally, in terms of moving forward recommendations, as to crop varieties planted in Hani Terraces, locally adapted traditional crop varieties shall be prioritized as for farming, while introduced varieties shall be localized before considering planting. As to Hani Terraces' water resource management, view it as an integral whole, where people's customary farming, management practices and underlying traditional beliefs and knowledge systems are of core elements contributing to sustainable and

resilient ecosystems. As to scientific research on issues concerning Hani Terraces' water resource management, multi- As to policy design concerning water resource management, it could be more inclusive, integrating as many impacting factors as possible, especially, scientific, social, cultural, religious beliefs spheres.

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Mainstreaming Native Species Restoration for Ecosystem and Landscape restoration, reporting on the results from the SDM 2016 project at Farmers Field School HEPA

Keywords: species-based conservation, ecosystem restoration, empowerment, traditional knowledge, communication and education and public awareness

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Background

Natural forests in Huong Son district, are highly degraded and poorly managed (24,844.2 ha/63,894.5 ha), largely replaced by rubber and acacia. Loss of natural forests leads to loss of local valuable tree species, which are of significant values for cultural and livelihoods, biodiversity and habitat, and water for agriculture for downstream communities. The urge for restoration of local valuable tree species in the area is highly crucial. Restoration of local species through efforts in nursery of seedlings, extension of plantings, and field seminars and documentations will contribute to making positive changes. The SDM 2016 project restored more than eight (08) local tree species with more than 20,000 seedlings produced. These seedlings were to facilitate changes not only for the FFS as the source-material for trainings but also to be further effectively utilized by local farmers including indigenous youths. We also mapped the plantings of these local species on real farms for later SEPLS sustainability. We conducted seminars and documentations for raising stakeholders' awareness on the importance and use of local native species and associated ecological knowledge for long-term restoration strategy for ecosystem values. Through this SDM project, restoration of local tree species has been an extremely crucial and meaningful action while social awareness raising has been a huge success from the project given the number of people engaged in the action actively and many times voluntarily from collection of seeds, nursery processes, plantings phase, practical seminars and workshops as well as the number of visiting groups came to learn and asked for seedlings for further plantings.

What parts can be mainstreaming?

The SDM 2016 project successfully planted seedlings and saplings amounted to 2,379, with 13 native species planted in 5 farming areas. The number of people benefitted from practical seminars was 50. The number of people participated in site visits, study-exchange programs, and short training courses amounted from 200 to 250 including foreign volunteers. The project also raised awareness of 500 to 1000 local people (primarily the public (i.e. farmers, civilians and other stakeholders) on the importance of local tree species and conservation of these species for maintaining and restoring local knowledge and ecosystem services associated with SEPLS, improved access to seedlings for further plantings for 50 to 100 local farmers (the project gave these seedlings for free to farmers). Three types of documentations accomplished. One was the project poster: 10 copies printed and shared with stakeholders in the surrounding areas. One video was produced and posted on on the website for further awareness raising. One 48-page booklet was produced which presents the techniques and process for the propagation of native tree species from seed gathering, seeds collection, seeds treatment, nursery management to planting in degraded areas. 500 copies of the booklet were printed and distributed to stakeholders including our farmers' network in Vietnam and Lao PDR. These can be summed up into three areas that can be mainstreaming and replicated including reflected in policy advocacy (1) mainstreaming of the practical knowledge included the

nursery processes of local native species for restoration and ecosystem values; (2) replicate and mainstreaming of the farm models where by plantings of these local trees provide multiple values for SEPLS sustainability; and (3) policy framework from Satoyama landscape (i.e. SEPLS) would give more acknowledgement and mechanism and incentives from larger-scale down to local scale to encourage more uptake at farm's level through to landscape's level.

Turning challenges into opportunities for mainstreaming

The SDM project addressed most of the challenges by turning them into opportunities for taking actions. (1) The proper developing and running of the Nursery really attracts many visitors and interested public to visit and join the hands-on works. With a diverse number of local species identified and tried and nursed, that gave visitors and stakeholders more choices to learn and expose to how richness of the forests ecosystem that can provide and also the curiosity of these diversity from nature and her species now trying to be re-captured and re-germinated. Most of the other initiatives do not look into a variety of local valuable tree species, and so this gave us advantage for more public interests. (2) Changing in the awareness and behaviours of not only target stakeholders but also public society has been a huge success; given the works have been real, the efforts and actions have been actually happening and produce i.e. seedlings can be clearly seen and visible to people; and most importantly, our experiences and knowledge we are willingly sharing to others. In certain times we gave the seedlings for free to farmers and also the public. And when conducted practical seminars, we brought farmers and hobby farmers/interested people from many regions and also invited professional farmer in this field to also give a teaching as well as direct on-ground technical guide so that this strengthens for other farmers to not only upgrade their knowledge but also taking actions. (3) The project was also implemented in combination with other Interesting Activity. Instead of just mentioning on just local tree species and their importance, but we campaign that (public message: maintaining the local trees is to maintain the water stream for enjoyment of nature-bathing). There is a nearby nature-bathing area; so that we tight this Nursery and how we work with the benefits of nature-bathing zone. Unless more trees can be protected and planting, then we will enjoy the nature landscapes and very clean, ecological bathing site. As part of this effect, as the Bathing site received more than 3,000 visitors during the Summer time, the Nursery was also visited and asked on importance of trees, local trees, and why maintain and planting local native trees are such important; we received, by quality interests, about 500-1000 visitors during the summer season.

Recommendations

Mainstreaming could be effective when the project realizes they can turn challenges into opportunities for taking actions. The project recommends to IPSI to consider the three mainstreaming messages: for SEPLS sustainability, continued actions and small-scale initiatives focusing (1) mainstreaming of the practical knowledge included the nursery processes of local native species for restoration and ecosystem values; (2) replicate and mainstreaming of the farm models where by plantings of these local trees provide multiple ecosystem values; and (3) policy framework from Satoyama landscape (i.e. SEPLS) would give more acknowledgement and incentives to encourage more uptake at farm's level through to landscape's level on local native species.

Indicator species for agrobiodiversity in rice paddy field: Research and its application to a new eco-labelling scheme in eastern rural Taiwan

Keywords: local livelihood, agro-biodiversity indicator species, organic farming, eco-labelling scheme

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Indicator species for agrobiodiversity in rice paddy field

Paddy fields occupy around 150,000 hectares and cover about 19% of the arable land in rural Taiwan. They can be considered the largest artificial wetland of freshwater habitats. Proper management of paddy fields plays a crucial role in providing local community livelihood and maintaining biodiversity of artificial wetlands. Many studies have shown that organic farming can increase biodiversity in paddy fields and enhance pest prevention and control, pollination and soil development. However, what kinds of species are more easily affected by conventional or organic farming is still unclear.

Principle component analysis (PCA) to show a main context. Through the selection of predators, the findings showed that *Tetragnatha maxillosa* Thorell (1895), *Micraspis discolor* Fabricius (1798) and *Tetragnatha javana* Thorell (1890) not only had higher frequency of occurrence but also higher sensitivity to different farming practices. The results showed that there was a positive linear relationship between the abundance of the three mentioned species and the richness and abundances of invertebrates in paddy fields, which could be used in the future as indicator species to reflect artificial disturbance. The results also showed that the conventional farming practices could reduce habitat heterogeneity and cause negative effects on agro-biodiversity of rice paddy farmlands.

In order to apply the outcome of the research in a way that could benefit both local livelihood and biodiversity, Hualien District Agricultural Research and Extension Station (HDARES) worked together with the Tse-Xin Organic Agriculture Foundation, local farmers, the Yin-Chuan Organic private company and the Forestry Bureau to develop a new eco-labelling scheme based on the identified agro-biodiversity indicator species. The new eco-labelling scheme therefore extended the existing Green Conservation Label for environmentally friendly agricultural products in Taiwan by incorporating non-endangered species as indicators. The new eco-labelling scheme has attracted green consumers to purchase the relevant products and encouraged more farmers to participate environmentally friendly farming in eastern rural Taiwan.

Figure 1. *Tetragnatha maxillosa* Thorell (1895), *Micraspis discolor* Fabricius (1798) and *Tetragnatha javana* Thorell (1890) are appropriate to be used as agro-biodiversity indicators and species promoting environmentally friendly ecological farming.

Challenges to mainstreaming

For persuade more farmers to do eco-friendly agriculture, the incentive is the key point. Since agro-biodiversity indicator species couldn't better farmer's livelihood directly, especially in the early stage after they switch agricultural model. In Taiwan, elder farmers who lack for spontaneousness to do it as well as lack variety stakeholders concerning about farmland management. It may the challenge for implementation.

Linkage between natural science and social science

With financial support from the Council of Agriculture in 2017-2020, HDARES will cooperate with the following institutions to conduct a 4-year integrated project called *Integrated project of enhancing ecoagriculture and sustainable development of rural Taiwan through international cooperation*, including National Dong Hwa University (NDHU), National Taiwan University (NTU), Agricultural Engineering Research Center (AERC), Miaoli District Agricultural Research and Extension Station (MDARES), Chinese Taipei Committee, International Commission on Irrigation Drainage (CTCID). It's necessary that rural communities should spontaneously coordinate related stakeholders for figure out a way to improve agro-biodiversity and livelihood based on scientific research.

Figure 2. We extended the application scale of Green Conservation Label and cooperated with Tse-Xin Organic Agriculture Foundation, farmers, Rice Production and Marketing Group, Agribusiness Company and Forestry Bureau in this case.

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Increasing capacity of local forest and indigenous communities at the Russian Far East target to conduct efficient public control, protection and use of intact temperate forests

Keywords: udege, Bikin, taiga, tiger, Primorye

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ABSTRACT

The history of protection intact parts of Ussuri Taiga at the Russia Far East has about 30 years. Central area of Sikhote-Alin mountains is traditional resource use territory for indigenous udege community in Primorye, habitat of Siberian tiger and, partially, Korean pine nut protecting zone by the National legislation. That's why we involved representatives from some udege communities in 2015 to CCRI workshop in Primorye, considering recent governmental adoption of Bikin National Park with territory of 1,16 mln hectares of intact high conservation value forests. That solution of Government meant key change for Bikin watershed, the last intact part of taiga, as well as for neighbor Iman river with its existing national Park "Udege Legend". We were fighting to protect them both from poaching and logging by our 20 years public campaign via former TV show and now quarterly magazine "Ecology and Business'. But Bikin gave us a real hope to really protect indigenous rights on National Park land.

Although national parks seems quite positive result of that campaign for this territory, highly attractive for many social groups – hunters, fishermen, miners, corrupt officials etc. – the destiny of "Udege Legend" was sorrow, and process of creation one on Bikin, despite support in Presidential Administration, met a hard problems in community. First is national legislation, which does not warrantee appropriate rights for local indigenous community to participate in the management and use of territory and resources, which are a base of their traditional subsistence during centuries. While most of Park's territory is designated to keep indigenous exclusive hunting-fishing rights, community members tend not to completely accept hard conservation rules and limits, established by Park administrations. Which mainly is a result of legal contradiction between 2 legislations - on indigenous rights and on environmental protection. Our long term media campaign, target to change mind of law writers, government and indigenous community and build consensus, became in that situation a unique tool to identify solution.

LEGAL CONFLICT

Our independent journalistic analysis demonstrates that legislation on Protected areas in Russia, although declare protection and at least respect of indigenous people's rights, rare contain regulations – how to do this. Indigenous communities in Russia never get full rights to manage and use their

traditional territories, even under full governmental control. Mainly those rights use to be presented either to resource use companies – mining, logging, hunting, fishing, military, agro, recreational, or to conservation purposes, which contradict to resource use rights in general. And, it is very hard to require exclusive use rights for indigenous communities, since business immediately remind that it brings much more profit to budget, than indigenous people, so should have priority. This approach coincide with governmental mainstream – environmentally destructive users always get priority, leaving indigenous communities without real access even to the minimum resources for their subsistence.

SOLUTION-RECOMMENDATION

Regarding all that, Kremlin officials swore on several meetings with Bikin community during public hearings and our media campaign, that they will change legislation BEFORE the park adoption, to provide full indigenous rights to manage territory and resources. It was presented also as a way to finally resolve equal problems in other national parks on indigenous territories, first "Udege Legend". But finally, Park was adopted WITHOUT any legal changes. Warrantee of indigenous rights on their territory and resources was shifted down to the governmental regulation and Park's by-law, which simply point out, that Park administration MAY create Advisory Board of indigenous community, whose advices are never obligatory for administration. As a result, success of Park now is completely dependent on community climate and success of our continued media campaign, mainly by our magazine "Ecology and Business".



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Development of community environmental education programmes through co-construction process

Keywords: community environmental education, co-construction process

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INTRODUCTION

Community education is mostly "bound by local context and directed by community knowledge and understanding, providing opportunities to raise awareness, invite participation, cultivate leadership, and encourage democratic decision-making as part of a lifelong learning process" (Tilbury and Wortman, 2008). Community environmental education focuses on environmental issues and how a community could work together to address existing environmental challenges or to prevent new ones. This paper focuses on a co-construction process which is one of the approaches in developing community environmental education programmes. Heimlich & Horr (2010) emphasised that working with communities through the process of co-construction has the capacity to respond to local environmental issues.

COMMUNITY ENVIRONMENTAL EDUCATION MODEL

In the context of this paper, discussion will be based on a model of community environmental education (Figure 1) developed and guided by the theoretical principles and the experiences, limitations and lessons in the programme development process in a PhD research conducted between 2012-2015 in Beaufort, Sabah. The co-construction process is imperative in developing an environmental education programme. It is important to obtain a meaningful and holistic perspective of the community through a comprehensive co-construction process which includes deeper interactions, dialogues and critical reflections (Smidt, 2014) about strengths, assets, opportunities, needs, barriers, shared aspirations, physical space, institutions and local economy. Based on observation and personal experience in conducting environmental education programmes, presentations or talks on environmental issues are usually pre-packaged or prepared beforehand based on assumptions of what the community needs. The co-construction process could improve the delivery of information when a programme is developed together with key members of the community by responding to local issues through data collection and active interactions.

MAINSTREAMING THE CO-CONSTRUCTION PROCESS

While it is important to mainstream the co-construction process in the development of community environmental education programmes, there are several challenges. Firstly, a comprehensive co-construction process may take time. To collect data, surveys (questionnaire and interviews), focus workshop and dialogues need to be carried out. The findings would then guide the development of the programme. Secondly, gaining support is difficult unless there is a strong rapport with key champions and leaders. Thirdly, the key barriers that might hinder participation are lack of time, lack of incentives or motivation to contribute (Dalziel, Hewitt and Evan, 2007). The research conducted in Beaufort from 2012-2015 encountered some of the challenges identified earlier. Due to time constraints, a comprehensive co-construction process could not be carried out. However, lessons learned from the research have improved the development of community environmental programme

in a current pilot study conducted by the Environment Protection Department Sabah and the Natural Resources and Environment Board Sarawak. Through the pilot study, deeper interaction and reflections about strengths, assets, opportunities, needs, barriers and shared aspirations are carried out. If time is a limiting factor, the co-construction process could be modified to involve a smaller group of community members. Questionnaire or interview process could be shortened to reduce time for data analysis and programme planning. Creating rapport with the leaders of the community should be carried out in the beginning by creating awareness on how the environmental education programme could benefit the entire community. When strong support is gained from the champions or leaders, this could influence more participation from the other villagers.

Figure 1 The community environmental education model derived from the PhD research

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Rural Education in Pakistan

Keywords: Pakistan, Education, Rural, Community Services, Barriers/Challenges

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About OCD (Organization for Community Development)

Organization for Community Development (OCD) is a benevolent, registered as not-for-profit, working in the province of Punjab, Pakistan. OCD works for the holistic development of the marginalized segment of the society without any discrimination of caste, creed, race, gender, religion. Its initiatives involve and engage grass root communities. OCD works with the poorest and most excluded people by synchronizing synergies with organizations that represent them in rural and urban areas. OCD focus on well-being and uplift of women, children, youth and men living in poverty, socially excluded and marginalized groups. The main thrust of OCD is to take development oriented actions for social transformation.

OCD is working with the inspiration that: problems bring challenges; challenges bring opportunities; opportunities bring change and change is Development.

Marianne Kindergarten (Initiative of OCD)

The main problem of Pakistan is low literacy especially in rural areas. The case is more complicated in case of rural girls. As illiteracy is the mother of all evils and ignorance leads to the exploitation of the weak and injustice in societies. The situation is getting terrific in rural areas of Pakistan. In 2006 MKK was started with 15 children. It became very progressive with the hard work of teachers, effective supervision of OCD and financial support of Kindermissionswerk. In 2010 school was shifted in new building and registered as Girls Middle School. MKK is providing quality education to the rural based community's children. Students of this school are doing well and excelling in their higher education. The children see him as a role model and have great passion for the uplift and improvement of their rural community.

Challenges and Coping

The initiative can be replicated in other areas as well but the major challenges are:

- Limited resources both financial and human resources for effective functioning
- Safety and security within school premises due to security threats

The first challenge can be mitigated by involving local benefactors, educationists and international community to come forward for reducing gender disparity and promotion of girl's education.

The second challenge was the increasing rate of terrorism in Pakistan due to which government made it compulsory to make some security arrangements to keep schools operational.
MKK complied with all these requirements and installed security cameras, barbed wires, imparted

emergency situation handling trainings and others. MKK ensured that not a single day of the students was missed due to closure on non-compliance to government issued guideline. It was the final term and all students, teachers and parents/guardians were shocked in fear that their child/ children will lose 1 year worth of teaching. Myself ensured that MKK closure on non-compliance did not happen thus saving the students wasting one year. MKK did not close or remain closed to ensure that not a single day of the school students was wasted.

Recommendations

- It is time to approach education from a new perspective based on creative and innovative educational ideas.
- For rural settings, it is important to use latest technology and qualified staff for ensuring student's success.
- It is important to ensure high level of parents and community participation.
- We need to practice multiple approaches to address different learning styles.
- High level of staff morale and engagement helps to ensure best results and increasing satisfaction of parents.
- It is important to impart greater confidence in students to boost their creativity.
- Education should be a learning process that generates interest in the students and motivate them to stay back in the institutions than to run away from it.
- Education should be entertaining and fun to students not boredom or just a duty.
- We believe in "Education for All" and our initiatives are meant to achieve this mission.

Annexes

Annex 1: Workshop Programme

Full Programme
Satoyama Initiative Regional Workshop in Sabah

"Mainstreaming concepts and approaches of socio-ecological production landscapes and seascapes in Asia"

Dates:	18-20 April 2017
Venue:	Le Meredien Hotel, Kota Kinabalu, Sabah, Malaysia
Co-organizers:	Secretariat of the International Partnership for the Satoyama Initiative (IPSI); United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS); Sabah State Government
Cooperating Organization:	Project on Sustainable Development for Biodiversity and Ecosystems Conservation in Sabah, Malaysia (SDBEC), Japan International Cooperation Agency (JICA)
Contributing Organization:	Ministry of the Environment, Japan (*Workshop costs borne by UNU-IAS are made possible through the financial contribution of the Ministry of the Environment, Japan)*
Language:	English

Background and purpose:

The Satoyama Initiative Regional Workshop aims to bring together diverse stakeholders in the respective region to strengthen the knowledge base related to "socio-ecological production landscapes and seascapes" (SEPLS), share the concept of the Satoyama Initiative more widely, and improve networking and communication both within and beyond the International Partnership for the Satoyama Initiative (IPSI). This will be the fifth Satoyama Initiative Regional Workshop, following those held for the Asia (Kathmandu, 2013), Europe (Florence, 2014), Africa (Accra, 2015), and Latin America and the Caribbean (Cusco, 2016) regions.

The theme of this workshop is "*Mainstreaming concepts and approaches of SEPLS in Asia*". The term "mainstreaming" is often used in many contexts these days, and it can be understood in different ways. This workshop will address it as it is used in the "Satoyama Initiative Thematic Review Vol. 2" (UNU-IAS and IGES, 2016), as when practices that have worked well in one place or at relatively small social scales can be replicated in other places, or up-scaled to larger scales in policy planning and implementation.

The workshop will focus on participants' experiences, bringing together knowledge and good practices through presentations and dialogue. An important goal of the workshop is to compile best practices and lessons learned in an output document that will contribute to international policymaking and scientific processes such as the Aichi Biodiversity Targets of the Convention on Biological Diversity (CBD) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

Workshop procedure:
The workshop will consist of the following sessions:

Opening Plenary (Day 1 AM)

Introductory and keynote speeches followed by panel presentations and discussion will provide background information and insight into the concept of SEPLS as well as "mainstreaming". This will also be an opportunity to exchange ideas and on-the-ground experiences from around the region.

Working Group Sessions (Day 1 PM and Day 3 AM)

The afternoon session on 18 April and the morning session on 20 April will be devoted to working-group discussions. These sessions will include: 1) participants' presentations of their activities; and 2) discussion related to the workshop's key questions.

6. What is the value of your SEPLS? Why is it important?
7. What aspects or practices can/should be mainstreamed (replicated in other areas, reflected in policy, etc)?
8. What are some challenges to mainstreaming?
9. How have you met, or what you need to meet, these challenges?
10. Any recommendations?

Each group will create a presentation to summarize discussion results and report back at the closing plenary.

Closing Plenary (Day 3 PM)

Working groups will present their conclusions, followed by plenary discussion aimed at addressing the key questions of the workshop.

Excursion (Day 2)

Participants will be taken to observe outstanding cases of mainstreaming SEPLS in Sabah.

Expected Outputs:

Workshop Report

A report will be produced after the workshop, including abstracts of all presentations as well as a summary of lessons learned and best practices.

Plenary Moderators:

Mr. Naoya Tsukamoto	(UNU-IAS) for plenary Day 1
Ms. Yoko Watanabe	(UNDP) for plenary Day 3
Dr. Jamili Nais	(Sabah Parks, Sabah) for plenary Days 1 and 3

Working Group Discussion Facilitators:

Group 1 "Ecosystem Restoration"

- Prof. Inocencio Buot (University of Philippines, Philippines)
- Mr. Mashor Mohd Jaini (Sabah Forestry Department)

Group 2 "Economic Incentives"

- Mr. Jady Smith (Live and Learn in Cambodia, Australia)
- Mr. Gerald Jetony (Natural Resource Office, Sabah)

Group 3 "Traditional Knowledge"

- Dr. Yoji Natori (Conservation International, Japan)
- Mr. Sintiong Gelet (Sabah Museum)

Group 4 "Communication, Education, and Public Awareness"

- Dr. Kuang-Chung Lee (National Dong-Hwa University, Chinese Taipei)
- Mr. Ag Shahminan Datuk Hj Ag Sahari (Natural Resource Office, Sabah)

Tentative Programme

DAY 1: Tuesday, 18 April

8:30-	REGISTRATION
Opening Plenary	MC: William Dunbar — Venue: Timpohon & Laban Rata
9:00-	PRAYER RECITAL OPENING REMARKS **Representative** Ministry of Natural Resources and Environment, Government of Malaysia **Mr. Naoya Tsukamoto** Director, IPSI Secretariat; Programme Director, UNU-IAS **Mr. Reiji Kamezawa** Director-General, Nature Conservation Bureau, Ministry of the Environment, Government of Japan **Datuk Seri Panglima Musa Haji Aman** Chief Minister, Sabah State Government
9:35-	VIP PHOTO
9:45-	KEYNOTE SPEECH (20min presentation + 10min Q&A) **Socio-ecological production landscapes and seascapes for a society in harmony with nature** **Prof. Kazuhiko Takeuchi** Director and Project Professor, Integrated Research System for Sustainability Science, The University of Tokyo; Senior Visiting Professor, UNU-IAS
10:15-	BREAK
10:35-	KEYNOTE SPEECH (20min presentation + 10min Q&A) **Community based conserved areas in East Malaysia: a rediscovery of culture in forest landscapes?** **Prof. Fadzilah Majid Cooke** Asian Public Intellectual Fellow and former Professor of Environmental Sociology, Universiti Malaysia Sabah
11:05-	GUEST PRESENTATION (20min presentation + 10min Q&A) **The IPBES Assessment of pollinators, pollination, and food production** **Prof. Saul Cunningham** Director, Fenner School of Environment & Society, The Australian National University
11:35-	INTRODUCTORY PRESENTATION **Mr. William Dunbar** IPSI Secretariat; UNU-IAS
11:50-	PANEL PRESENTATIONS **Facilitating the development of a Taiwan Partnership for the Satoyama Initiative, TPSI** **Dr. Kuang-Chung Lee** Associate Professor, National Dong-Hwa University
12:00-	**Restoring and Managing landscapes in Gamri Watershed, Tashigang** **Mr. Singay Dorji** GEF Small Grants Programme, UNDP
12:10-	**Case study from Sabah: Indigenous community conservation area, ICCA** **Dr. Jamili Nais** Director, Sabah Parks, Sabah
12:20-	**The "Tagal System" – A Community-Based Fisheries Management** **Mr. Godfery Kissey** Deputy Director 1, Department Of Fisheries, Sabah, Malaysia

12:30-	PANEL DISCUSSION MODERATORS: **Mr. Naoya Tsukamoto** Director, IPSI Secretariat; Programme Director, UNU-IAS **Dr. Jamili Nais** Director, Sabah Parks, Sabah			
13:00-	LUNCH			
Working Group Session: Day 1				
	Group 1 **Ecosystem Restoration** @ Mahua 1	Group 2 **Economic Incentives** @ Mahua 2	Group 3 **Traditional Knowledge** @ Gaya 1	Group 4 **CEPA** @ Gaya 2
14:00-	EXCURSION EXPLANATION @ Timpohon & Laban Rata			
14:30-	OPENING & SELF-INTRODUCTION @Working Group Room			
	PRESENTATIONS (15min Presentation + 15min Q&A)			
14:45-	Ms. Uma Khumairoh IORC, Indonesia	Dr. Bishnu Hari Pandit KAFCOL, Nepal	Prof. Rashed Titumir Unnayan Onneshan, Bangladesh	Ms. Kien Dang SPERI, Vietnam
15:15-	Dr. Jeeranuch Sakkhamduang ERECON, Thailand	Mr. Rosman Ghani TZR, Malaysia	Dr. Prasert Trakansuphakon IKAP, Thailand	Ms. Lily Lin HDARES, Chinese Taipei
15:45-	Prof. Mohan Devkota Tribhuvan University, Nepal	Mr. Jayant Sarnaik AERF, India	Mr. Dico Luckyhalto FPP, Indonesia	Mr. Anatolii Lebedev BROC, Russia
16:15-	BREAK			
16:30-	Mr. Ricky Martin Sabah Forestry Department, Malaysia	Mr. William Wong Department of Agriculture, Malaysia	Mr. Julius Kulip University Malaysia Sabah	Dr. Susan Pudin Environmental Protection Department, Malaysia
17:00-	Dr. Marcal Gusmao Ministry of Commerce, Industry and Environment, Timor-Leste	Mr. Mangal Man Shakya WWG, Nepal	Prof. Dayuan Xue Minzu University, China	Mr. Karamat Jameel OCD, Pakistan
17:30-	Mr. Yourk Sothearith Ministry of Environment of Cambodia Conclusion of Day 1	Conclusion of Day 1	Conclusion of Day 1	Conclusion of Day 1
19:00-	RECEPTION@ Timpohon & Laban Rata			

DAY 2: Wednesday, 19 April

Excursion	
	Details will be provided by the Natural Resource Office at 14:00 on Day 1

DAY 3: Thursday, 20 April

Working Group Session				
	Group 1 **Ecosystem Restoration** @ Mahua 1	Group 2 **Economic Incentives** @ Mahua 2	Group 3 **Traditional Knowledge** @ Gaya 1	Group 4 **CEPA** @ Gaya 2
9:00-	DISCUSSION (90min)			
10:30-	BREAK			
10:45-	WRAP-UP and PPT-making (75min)			
12:00-	LUNCH			
Closing Plenary				Venue: Timpohon & Laban Rata Moderators: Dr. Jamili Nais (Director, Sabah Parks) & Ms. Yoko Watanabe (Global Manager, UNDP)
13:00- 13:15- 13:30- 13:45-	REPORT BACK FROM THE WORKING GROUPS (10min Presentation; 5min Q&A) Working Group 1: Ecosystem Restoration Working Group 2: Economic Incentives Working Group 3: Traditional Knowledge Working Group 4: Communication, Education, and Public Awareness			
14:00-	DISCUSSION (50min)			
14:50-	GROUP PHOTO			
15:00-	BREAK			
15:15-	INFORMATION SHARING **GEF-Satoyama Project Update: Experiences to date and the future plan for mainstreaming** *Including a video on how the Indicators of Resilience in SEPLS work **Dr. Yoji Natori**, GEF-Satoyama Project Manager, Conservation International			
15:45-	**Satoyama Initiative Development Mechanism, SDM: Seed funding for enhancing landscape approach on SEPLS** **Mr. Yohsuke Amano**, IPSI Secretariat; UNU-IAS **Mr. Yasuo Takahashi**, Researcher, The Institute for Global Environmental Strategies			
15:55-	**Outcome of the 1st Asian Conference on Biocultural Diversity** **Ms. Mikiko Nagai**, Office Manager, UNU-IAS Operating Unit Ishikawa Kanazawa			
16:05-	WRAP-UP			
16:20-	CLOSING REMARKS **Mr. Naoya Tsukamoto** Director, IPSI Secretariat; Programme Director, UNU-IAS **Mr. Amat Mohd Yusof** Secretary, Natural Resource Office, Sabah			
16:30	CLOSING			

Working Group Participant Lists

Group 1: Ecosystem Restoration

#	Name	Organization	Role
1	Prof. Inocencio Buot	University of Philippines, Philippines	Facilitator
2	Mr. Mashor Mohd Jaini	Sabah Forestry Department	Facilitator
3	Ms. Uma Khumairoh	Integrated Organic Farming Systems Research Centre	Speaker
4	Dr. Jeeranuch Sakkhamduang	Institute of Environmental Rehabilitation and Conservation	Speaker
5	Prof. Mohan Prasad Devkota	Tribhuvan University of Nepal	Speaker
6	Mr. Ricky Martin	Sabah Forestry Department, Malaysia	Speaker
7	Dr. Marcal Gusmao	Ministry of Commerce, Industry and Environment, Timor-Leste	Speaker
8	Dr. Shamik Chakraborty	United Nations University Institute for the Advanced Study of Sustainability	Rapporteur
9	Dr. Marisa Aramaki	Ministry of Environment of Japan	
10	Prof. Saul Cunningham	The Australian National University	
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Group 2: Economic Incentives

#	Name	Organization	Role
1	Mr. Jady Smith	Live and Learn, Cambodia	Facilitator
2	Mr. Gerald Jetony	Natural Resource Office, Sabah, Malaysia	Facilitator
3	Dr. Bishnu Hari Pandit	Kathmandu Forestry College	Speaker
4	Mr. Rosman Bin Abd Ghani	TZR Technology Sdn Bhd	Speaker
5	Mr. Jayant Sarnaik	Applied Environmental Research Foundation	Speaker
6	Mr. William Wong	Department of Agriculture, Sabah	Speaker
7	Mr. Mangal Man Shakya	Wildlife Watch Group	Speaker
8	Dr. Beria Leimona	United Nations University Institute for the Advanced Study of Sustainability	Rapporteur
9	Mr. Kenji Nakajima	Ministry of Environment of Japan	
10	Ms. Yi Liu	GEF Small Grants Programme, UNDP	
11	Ms. Yoko Watanabe	United Nations Development Programme	
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Group 3: Traditional Knowledge

#	Name	Organization	Role
1	Dr. Yoji Natori	Conservation International	Facilitator
2	Mr. Sintiong Gelet	Sabah Museum	Facilitator
3	Prof. Rashed Al Mahmud Titumir	Unnayan Onneshan	Speaker
4	Dr. Prasert Trakansuphakon	Indigenous Knowledge and Peoples Foundation, IKAP	Speaker
5	Prof. Dayuan Xue	College of Life and Environmental Science, Minzu University of China	Speaker
6	Mr. Julius Kulip	Universiti Malaysia Sabah	Speaker
7	Mr. Dico Luckyhalto	Forest Peoples Programme	Speaker
8	Mr. Yasuo Takahashi	Institute for Global Environmental Strategies	Rapporteur
9	Ms. Mikiko Nagai	United Nations University Institute for the Advanced Study of Sustainability	
10	Prof. Fadzilah Majid Cooke	Universiti Malaysia Sabah	
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Group 4: Communication, Education, and Public Awareness

#	Name	Organization	Role
1	Dr. Kuang-Chung Lee	National Dong-Hwa University	Facilitator
2	Mr. Ag Shahminan Datuk Hj Ag Sahari	Natural Resource Office, Sabah, Malaysia	Facilitator
3	Ms. Kien Dang	Social Policy Ecology Research Institute	Speaker
4	Ms. Lily Lin	Hualien District Agricultural Research and Extension Station, Council of Agriculture	Speaker
5	Mr. Anatolii Victorovich Lebedev	Bureau for Regional Outreach Campaigns	Speaker
6	Dr. Susan Pudin	Environmental Protection Department, Malaysia	Speaker
7	Mr. Karamat Jameel	Organization for Community Development	Speaker
8	Mr. William Dunbar	United Nations University Institute for the Advanced Study of Sustainability	Rapporteur
9	Dr. Devon Dublin	Conservation International	
10	Dr. Yoshihiko Iida	United Nations University Institute for the Advanced Study of Sustainability	
11	Mr. Singay Dorji	GEF Small Grants Programme, UNDP	
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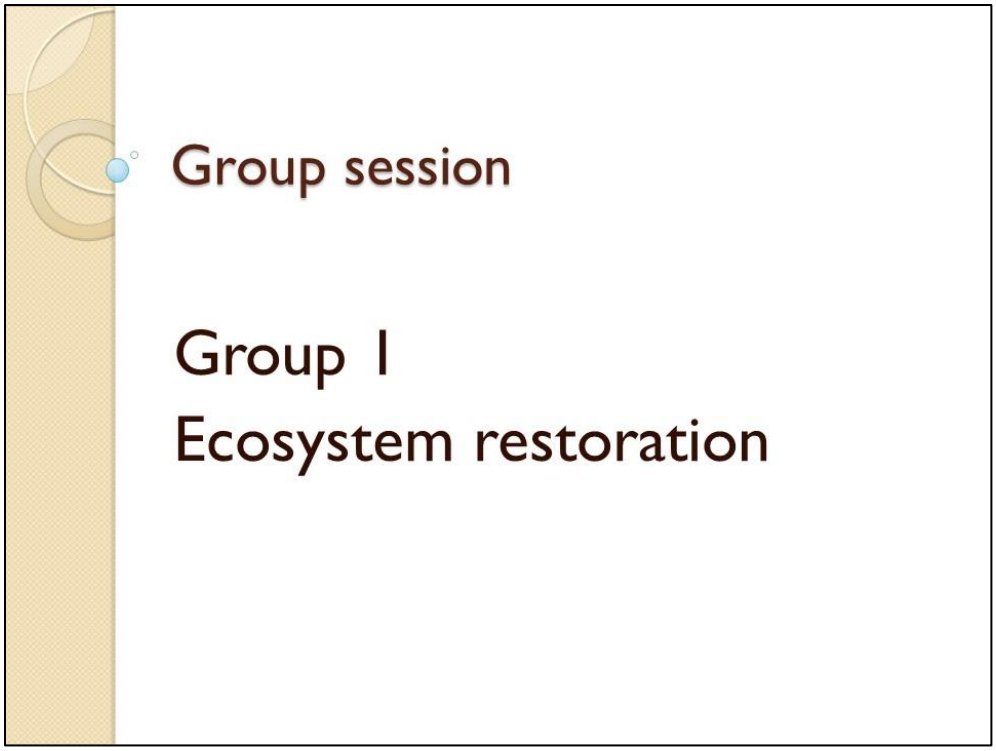
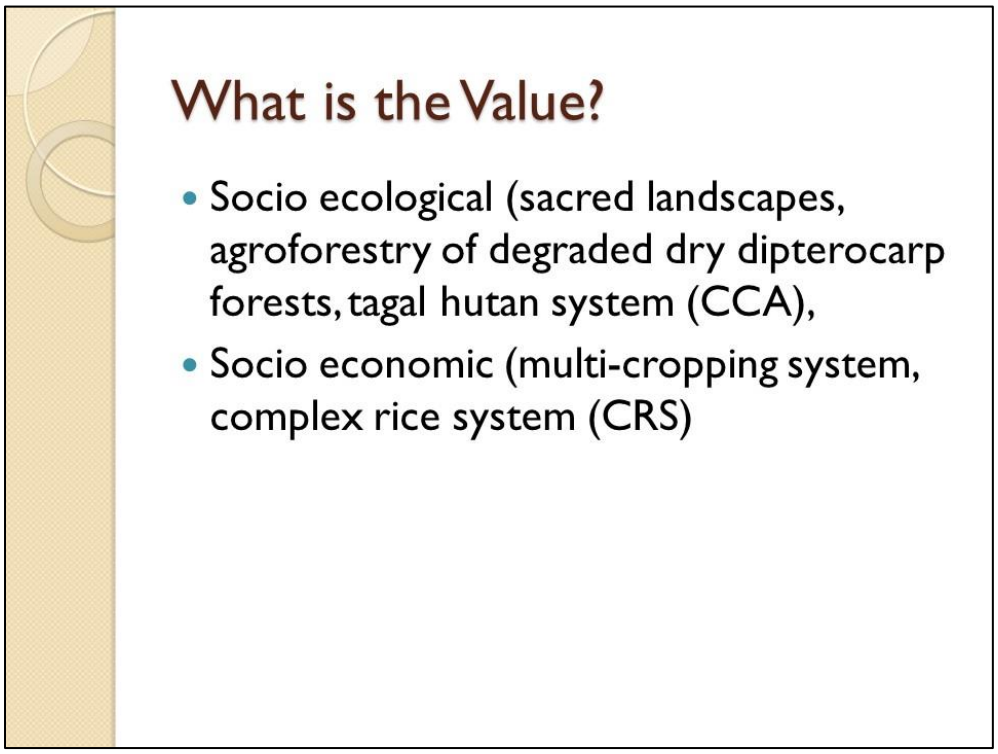
Annex 2: Output slides from working groups

Group 1: Ecosystem restoration





What aspects/ practices can/ should be mainstreamed?

- Three-step method of CRS- (1) demonstration farms in multiple areas in E Java and Sumatra and other parts of Asia, (2) participatory approach, (3) education (these methods can be used for upscaling in policy-making)
- participatory, and decision-making processes (stewardship) by the locals
- research on sustainable farming, demonstration, field discussions, farming school, integrate in formal curriculum
- Agroforestry (it can generate more income), can be replicated in flooded areas, MOE can introduce it in the forest buffer areas for preventing forest encroachments, reforestation, decentralization and empowerment of local government.
- Tagal Hutan (CCA), TK based system where forest resources are under the control of local communities, consideration of different tagal systems i.e. riverine tagal (tagal sungai) and forest based tagal and establish connectivity (marriage of the two systems) of these ecosystems should be formalized.

What are some of the challenges to mainstreaming?

- Poor institutional capacity, introduction of modern conservation tools (mapping and GIS),
- Initial capital outlay, literacy, lack of immediate benefits.
- Perception of local communities towards forest conservation and agricultural practices, new approach to ecosystem protection is not understood, financial resources,
- gathering people (decision maker) and coordination, uncontrolled expansion of agricultural lands to the forested areas, most of the land is controlled by the community- limiting government intervention.
- (1) Community level- willingness to include tagal system (the villagers and the younger generation may not want to participate- creating a gap),

(2) Implementer level- developers of the forest areas do not know much about the tagal system and how to mainstream it

(3) Government level- Formal recognition by the policy-makers to adopt tagal hutan system for ecosystem restoration

How have you met, or what you need to meet these challenges?

- Applying a step-by-step approach (one step at a time), formal and informal education (use of movies and pictures), prioritizing high valued commodities while not excluding diversification
- short-term (immediate) incentives, multi-stakeholder collaboration, participatory approach.
- Community livelihood development (to be done) by the government/programs/projects, diversification of income through ecotourism without jeopardizing restoration
- Basic biodiversity research at the local level, diverse activities (like birdwatching, ecotourism, agrotourism, organizing picnics etc.), conservation awareness.
- Seeking pathways of financial support, coordination (once the new government takes effect the whole consideration for landscape management may change), enforce laws and policies such as community forestry, awareness raising for the community, develop demonstration plots for the community.

What are some of the challenges to mainstreaming?

- Community level – promotions and incentives, establish committee between local community, developers, and government
- Implementer level- (means institutions and organization) enhance capability, human resource and training, work with the community, the role of NGOs and forestry managers, promote tagal hutan system as a CSR
- Government level: promote tagal hutan (CCA) concept in the government policies and laws (renew and develop),

Recommendations

- Implementation at the local level
- Enforcements in laws and policies of the nation
- Enhancing the interface between community, experts and the policy-makers
- Reflect lessons learnt at the ground level to policy level
- Participatory approach

IPSI REGIONAL MEETING

Working Group 2 – Economic Incentives

1. Values of SEPLS and why important?

- Economic incentives may not be sufficient, need diversification of the concept of the values – positive incentives
- Incentives can be in the form of recognition for good landscape stewardship, while the main intention is to fulfill SEPLS at the local level
- Incentive is an entry point and also needs the balance between amount of incentive and local culture/traditions
- Incentive is to link local capacity, perception and buy time so communities start their conservation awareness and get benefits from good practices.
- Incentive is to empower, reform, not to disempower self-reliance capacity

Why positive incentives?

- Cultural practice is integrated into conservation. However, this practice has stopped due to changing of aspirations.
- Incentive may support changing behavior, motivations, and aspirations towards sustainable practices by applying cultural knowledge. This may make the communities more engaged (symbiosis relationships).
- Relationship (social capital) – incentive can provide coherence among communities
- Recognition – as form of incentives – can become motivations in providing ecosystem services for off-site communities such as downstream
- Communication is an important part in raising awareness and getting consensus on positive incentives

2. What aspects or practices can/should be mainstreamed?

- Ensure that incentive not becoming disincentive and perverse incentive.
- Encourage the scientists to maximize the application of technology for research.
- Effective planning, data sharing, management are important for mainstreaming.
- Establish baseline from and by local community using technology (and 'valid' methodologies) otherwise it is difficult to ensure its information robustness
- Strong community coherence and leadership of the local communities
- Diversification of livelihood options

3. What are some challenges to mainstreaming?

- Encroachment and illegal activities – examples from Tagal system – introduce faster growing species for increased returns
- Difficult to have standardize ecological index/baseline information and find robust methods to calculate such index and compline the baseline information
- Perverse subsidy and disincentive exist
- Existence of policy barriers, such as access and rights to resource uses.
- Efforts from the local community are being less heard due to lack of capacity to transfer their ideas, opinions, approaches.
- Unequitable distribution of resources
- Aligning local actions and government's regulations takes time.

4 & 5. Responses & Recommendations

- Remove policy barriers. Clear policy and regulation. Political will is important (targeting champions at all levels).
- Link to commodity market in producing environmental-friendly products (if possible standardized by national and international certifications). Quality and quantity control, appropriate technology, as prerequisite
- Enhanced use of information technology for planning and implementation.
- Build trust among stakeholders, including indigenous people. Initially by building joint conservation-management plans.
- Access to new ideas (including networking) resulting in innovations on sustainable practices and products/commodities. Keeping the benefits where the innovation is (i.e. Geographical Indicator).

4 & 5. Responses & Recommendations

- Long-term subsidy/incentive may not be sustainable, but short-term incentive will be able to help local community to reach the next stage of better livelihood and sustainability.
- Respect and understand communities' internal capacity and governance system, while devising incentive mechanisms.
- Empower community by setting internal M&E that might be specific for certain communities. This may be more functional compared to the introducing external system. However, the link with the larger system needs to be maintained.
- Capacity buildings to understand and re-formulate the best practices to own programs. This may include networking and cross-site visits.
  - One day of training for incentives – monitoring and evaluating the IPSI members' programs
  - Cross-sectoral learning (i.e. private sectors and NGOs that are IPSI members)
- Food, water and energy (i.e. security to all) as a proxy for sustainable practices may be more appropriate (compared to 'global' agenda such as climate change mitigation).

Group 3: Traditional knowledge

OUR PRESENTATIONS

- Complementarities of Human-Nature Well-beings: A Case Illustrated through Traditional Forest Resource Users of Sundarbans in Bangladesh, by Prof. Rashed Titumir, Unnayan Onneshan.
- Mobilizing TK Innovations and Practices in Rotational Farming for Sustainable Development, by Dr. Prasert Trakansuphakon, IKAP, Thailand.
- Dayak Suaid answers to oil palm development threats to landscape and environmental services, by Mr. Dico Luckyhalto, FPP, Indonesia.
- Traditional Knowledge on Ecosystem Management by the Dusun People in Tambunan District, Sabah, Malaysia, by Mr. Julius Kulip, University Malaysia Sabah.
- Customary Managemetn of Natural Resources by Hani People, minority ethnic group in the south Yungang province, by Prof. Dayuan Xue, Minzu University, China.

QUESTIONS TO BE ANSWERED

Q1. What is the value of your SEPLS? Why is it important?

Q2. What aspects or practices can/should be mainstreamed?

Q3. What are some challenges to mainstreaming?

Q4. How have you met, or what you need to meet, these challenges?

Q5. Any recommendation?

OUR ANSWERS

A1. Value of our SEPLSs and their importance

A2. Challenges in mainstreaming

A3. How we are addressing these challenges

A4. Our recommendations

Suggestions for concrete actions

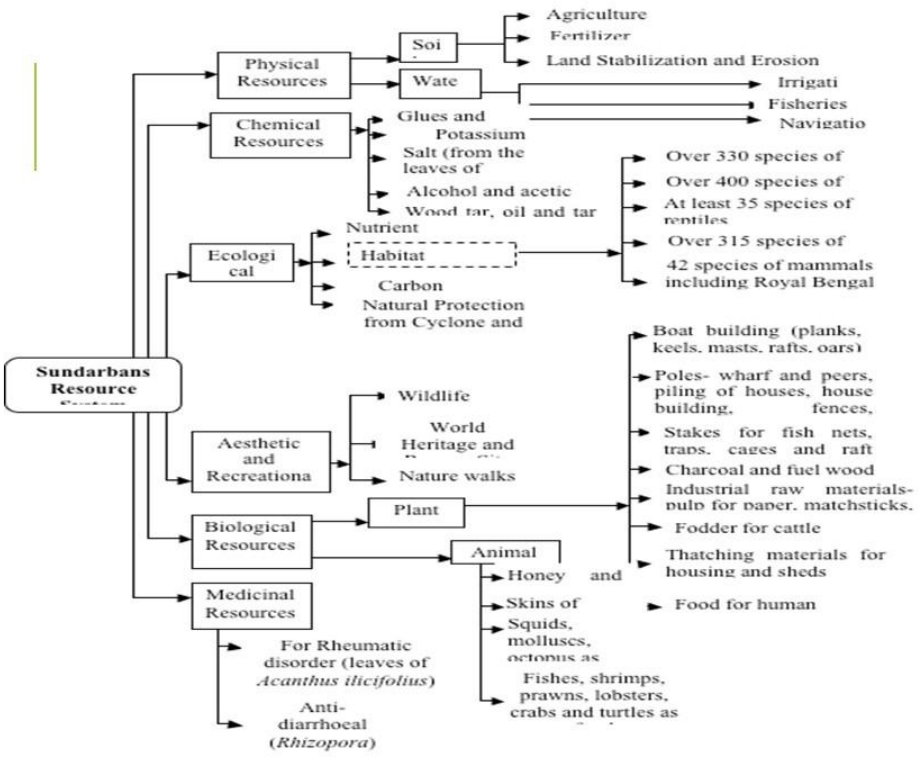
A1. VALUE OF OUR SEPLSS AND THEIR IMPORTANCE

Bangladeshi Sundarbans:

Values of SEPLS encompass economic and non-economic aspects, including relational values. Multiple values of Bangladeshi Sundarbans include rich biodiversity –inscribed as Ramsar Site (1992) and World Natural Heritage Site (1997)- and livelihood basis for traditional resource user groups (3.5M people)

TK associated with the use of Sundarbans ecosystem and resources include
Mouals (honey/wax collectors): Partial harvest of honey combs
Bawalis (wood collectors): Leaving at least one stem in each tree clump to allow for faster regeneration;
Golpata (wood collection (*Nypa fruticans*)): harvest restricted to the trees with leaves with no less than 9-ft long, only once a year between October to May;
Jele (traditional fisher folks): Restriction in fishing gears, e.g. 'jal' net prohibition

- People use traditional rules and restrictions adaptively to maintain ecosystems in ways not substantially different from the process in scientific studies



A1. VALUE OF OUR SEPLSS AND THEIR IMPORTANCE

Thai Karen's rotational farming:

Propagation of *P'dav* tree (*Macaranga denticulate*) during fallow period enriches soils and improves rice productivity. Fallow woodland provides resources to villagers, as well as habitats and food resources for wildlife

Elders own the knowledge inherited from ancestors on *P'dav* tree seed collection, planting methods and caretaking

A1. VALUE OF OUR SEPLSS AND THEIR IMPORTANCE

Kapuas Hulu (Indonesia):

Forests provide multiple benefits to people: water, timber, hunting (mammals), fishing (freshwater resource), gathering (NTFPs), beauty (aesthetic sense).

TK on Mixed agroforest and shifting cultivation which underpins produces rubber, rain-fed rice and pepper

Agriculture landscape in Emperiang

A1. VALUE OF OUR SEPLSS AND THEIR IMPORTANCE

TK on ecosystem management by the Dusun People in Sabah:

'*Adat-Kampung*' or '*Pantang-Larang*': customary rules associated with punishment ('*Sogit*') for infringement of rules

'*Sogit*': fine by local authorities in forms of animals/salt bowl provisions, gazette under Sabah State Native Customary Laws 1992. Individuals judged guilty by native courts are subject to '*Sogit*', e.g. damage to burial grounds, adulteration of water sources, ignoring customary rules, etc.

No go-for-hunting signs, e.g. encounters with '*Lintugi*' or milipods, wood peckers, forest rats

Belief in spirits in rice, forests and mountains

➢TK safeguarding ecosystems in Sabah

A1. VALUE OF OUR SEPLSS AND THEIR IMPORTANCE

Hani terraces agro-ecosystem:

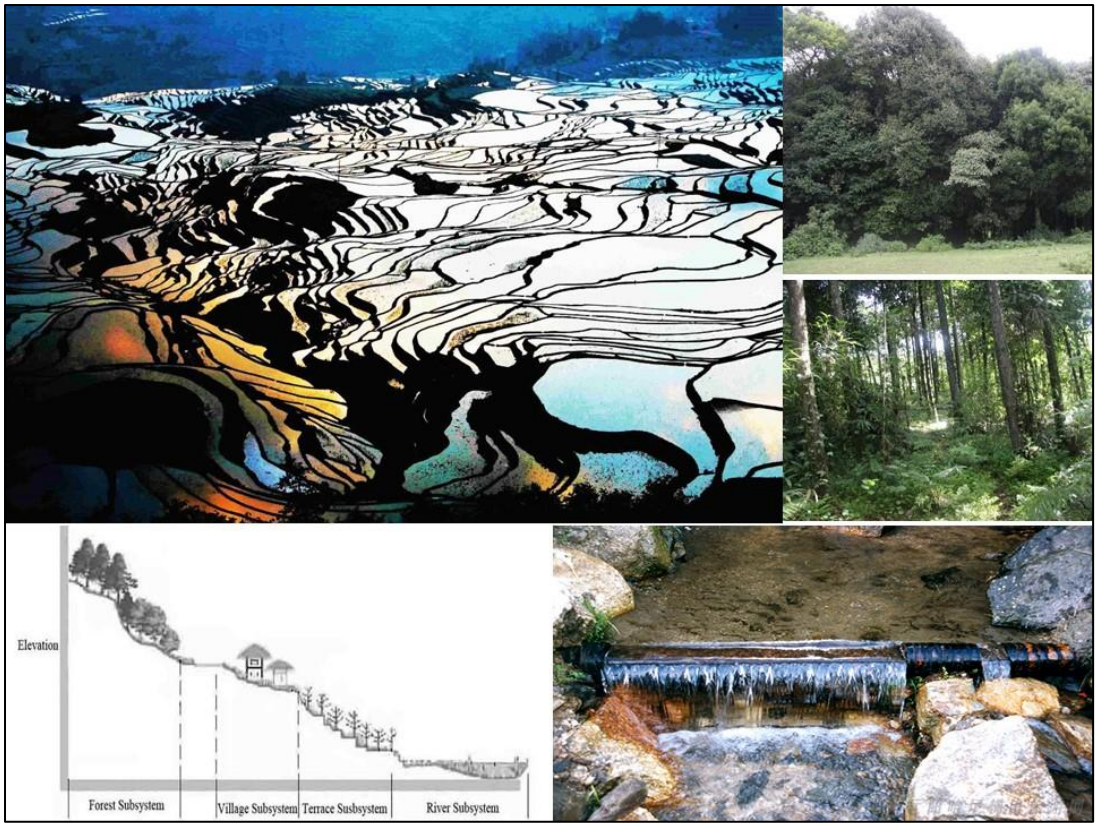
Food provisioning, water flow regulation, prevention of soil erosion and land slides, forest resource provisioning, etc., underpinning agro-ecosystems stability and contributing to better-off, social well-being and stability of Hani people's life. Registered as a National Wetland Park and GIAHS –attracting tourists

TK in Hani terraces agro-ecosystem include:

Water resource allocation system (irrigation channels and ditches) managed on 'allocation according to demands' and 'builders reap the benefits' principles, under supervision by elders commissions. Economic punishment existent.

Headwater forests and sacred forests under strict protection

Customary management of diversified biological resources: 92 crop varieties, 135 rice varieties and other edible wild biological resources



A2. CHALLENGES IN MAINSTREAMING

Across scales

Patron-client relationship: creating local dependency on centralized resources

Upscaling: success at small scale does not always lead to success at larger scale

Different recognition of land use by local communities and outsiders, e.g. fallow forest

Limited recognition by government/law of customary regulation/practices and its benefits to people and nature

Need for regulation (or community protocols) for curving rent-seeking and rent-dissipation, e.g. on forest resources and those in line with ABS

Expanding oil-palm plantation in NPs, where even local people's access is limited, destroys forests and pollute water

A2. CHALLENGES IN MAINSTREAMING

Across scales (contd.)

Limited access to centralized systems, e.g. online reporting system

Contradictions in government legislations/policies: e.g. customary rules, which usually support sustainable forest management, were recognized in the mainstream legal system but the application to the government for new land use requires opening-up forests

Across generations

TK transmission to younger generations: young people outmigration to cities, TK marginalized in mainstream education system, etc.

A2. CHALLENGES IN MAINSTREAMING

Across different knowledge systems

Gap between TK and science: Understanding of forest management from locals point of view is substantially different from science point of view

Limited recognition of cultural ecosystem services

Water resource management as a matter of social concerns but not research topic

Other challenges

Climate change: increasing cyclone impacts on people and mangroves in Sundarbans

Mutually-connected threats to Hani terraces agro-ecosystem, such as tourist boom, massive infrastructure development, alteration of livelihoods from traditional agriculture to tourism, intrusion of alien culture, population outmigration, climate change, etc.

A3. HOW WE ARE ADDRESSING THESE CHALLENGES

Across scales

Government support to village decree on forest management promotes resource inventory (forests, fish ponds, beautiful waterfalls, etc.) and village projects (e.g. ecotourism and eco-farming)

Recognition of native customary laws in government legal system, which now have nearly equal status to civil laws

State's support to the implementation of customary rules and practices

Traditional practices have become recognized as cultural heritage under the Thailand National Cabinet Resolution

A3. HOW WE ARE ADDRESSING THESE CHALLENGES

Across generations

TK transmission in local schools

TK documentation

A3. HOW WE ARE ADDRESSING THESE CHALLENGES

Across different knowledge systems

Community-based Mangrove Aqua-silviculture (CMAS): advantages against conventional (engineered) shrimp-culture verified by economic and ecological return analysis

Scientific validation/triangulation and public information (e.g. videos) are recommended for creating better awareness of the benefits of TK

Integrated science-social-cultural approach to problem solving

Understand well-being/good quality of life from non-economic point of view: Are people really happy by earning more and spending more in cities?

Mapping to bridge the gap on the recognition of land use by different stakeholders

A4. OUR RECOMMENDATIONS

1. Across scales

National level acts and policies [(e.g. NBSAPs and forest users acts)] should recognise, enable and promote communities to practice maintain and use traditional knowledge and practices that are important for their livelihood and well-being. Communities need to be empowered for valuing, practicing, protecting and interacting with governments on their own TKPs.

2. Across generations

Integrate TKPs into mainstream (national) education curriculum, CEPA programmes. Empower, create processes and spaces for knowledge holders to interact with younger generations, e.g. through setting up community knowledge centers, integrating into school curriculums and promotion and advancement of active traditional practices and rituals.

A4. OUR RECOMMENDATIONS

3. Across different knowledge systems

Recognition and advancement of traditional knowledge as science, ideas, innovation and practices, and promotion of integration of traditional knowledge and natural and social sciences.

SUGGESTION FOR CONCRETE ACTIONS

1. Across scales

IPSI Case studies on the first recommendation on mainstreaming across scales

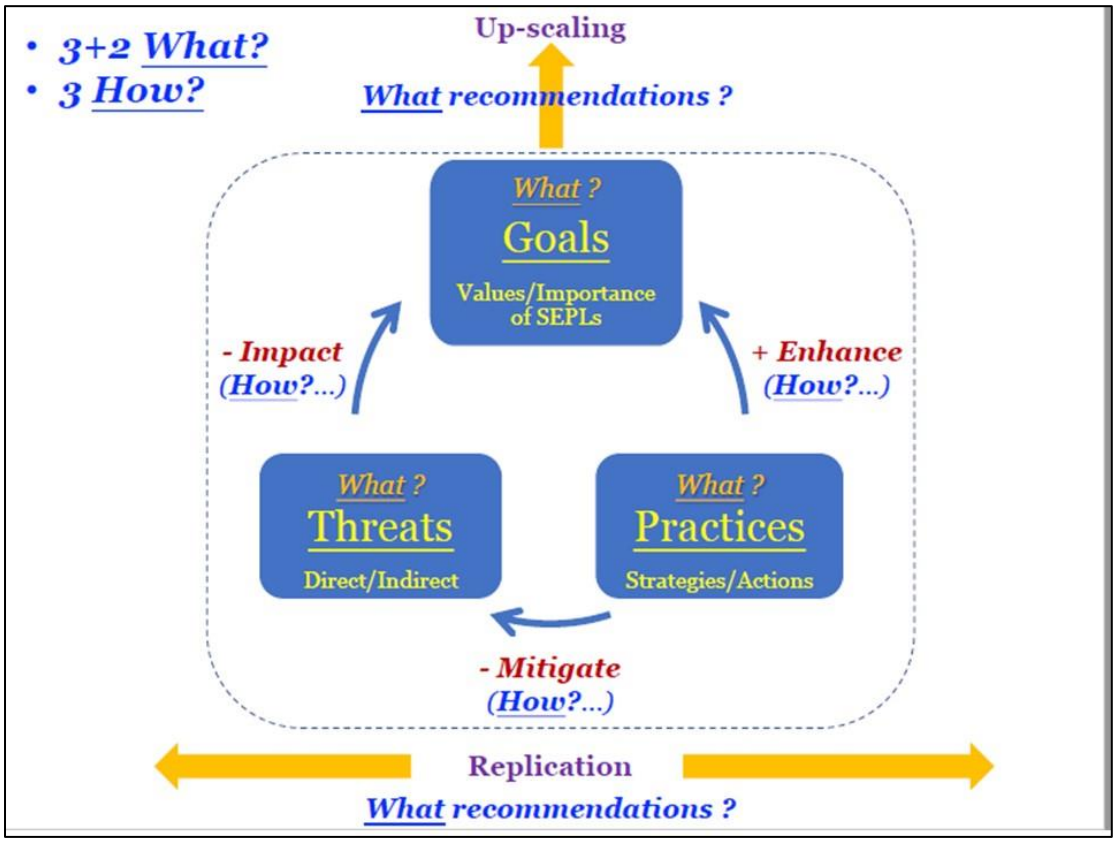
2. Across generations

IPSI, its members and other stakeholders to promote processes to develop TK curriculum and transfer TK indicators and community-based monitoring and information system (CBMIS).

3. Across different knowledge systems

IPSI, its members and other stakeholders to promote of cross-learning amongst TK holders, academics and government officials through field-level interactions, including conferences at local levels and joint publications.

Group 4: Communication, education and public awareness (CEPA)



Goals

- Biocultural and ecosystem conservation
- Education and public awareness
- Economic sustainability
- Data availability

Threats

- Unsustainable use of natural resources
- Lack of resources: funding, facilities, personnel, incentives
- Weak coordination across sectors in policy enactment and implementation
- Lack of integrity in policy enactment and implementation
- Lack of reliable information and sharing
- Lack of awareness
- Loss of traditional and indigenous knowledge
- Security

Actions

- Identify and engage key groups in educational programmes
- Improve coordination and promote a multi-stakeholder approach
- Provide incentives, ex. Green labeling
- Research, knowledge creation and proper record-keeping
- Capacity building
- Media campaigns

Replication

- Record-keeping and make resources available online, through reports, video materials
- Standardization of procedures, ex. Production of guidelines and online tools, auditing
- Conferences, workshops, forums to share good practices
- Train the trainers, village exchanges, model farmers

Upscaling

- New institutional arrangements (like Taiwan Partnership for the Satoyama Initiative)
- Recognition of “champions”
- Feed local practices into international forums
- Include SEPLS concepts in formal and informal education materials, ex. Satoyama-related short training programmes

Annex 3: Excursion programme

The Satoyama Initiative Regional Workshop in Sabah
Excursion – 19 April 2017 (Wednesday)

PROGRAMME

Kg. Luanti Baru Ranau (Group 1 & 2)		
Time	**Activities**	
6.00 am	Gather at Le Meridien Hotel and registration	
7.00 am	▪ Depart to excursion site ▪ Stop at **World Heritage National Park** for group photo	
10.00 am	Expected to arrive at Kg. Luanti Baru, Ranau (Tagal Sg. Moroli)	
10.10 am	▪ Briefing by JKKK Kg. Luanti Baru ▪ Welcome Remarks by District Officer of Ranau ▪ Presentation of Tagal System by the Community	
11.00 am	**Activity – Fish Massage/Therapy**	
11.30 am	▪ Lunch ▪ Cultural presentation	
12.00 noon	**Group 1** Depart to Bundu Tuhan, Ranau	**Group 2** Depart to Bundu Tuhan, Ranau
3.30 pm	Expected to arrive at Bundu Tuhan and refreshment	Expected to arrive at Kg. Tudan, Tuaran and refreshment
3.45 pm	▪ Welcome speech and Brief Introduction by Pengerusi Jawatankuasa Projek Winokok Bundu Tuhan ▪ Presentation of Winokok Project ▪ Presentation by Ecolink – Sabah Park	▪ Welcome speech by Pengerusi JKKK Kg. Tudan ▪ Introduction of Kg. Tudan ▪ Welcome Remarks by District Officer of Tuaran ▪ Presentation by JICA-SDBEC
4.10 pm	**Activity -** ▪ Planting trees	**Activities** - ▪ Demonstration on honeybee harvesting ▪ Mulberry Cultivation / UMS – Showcase Mulberry Tea
5.00 pm	Depart back to Kota Kinabalu	Depart back to Kota Kinabalu