



SATOYAMA
INITIATIVE

The Satoyama Development Mechanism (SDM) 2018

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of Sustainability

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Ministry of the Environment



SEPL in Himalayan terrains of Mago in Western Arunachal, India (SAFE)

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Key messages from SDM projects

The Satoyama Development Mechanism (SDM) was established in 2013 to promote activities in line with the Strategy and Plan of Action of the International Partnership for Satoyama Initiative (IPSI) through the provision of seed funding to promising projects proposed by IPSI members. Six projects have been selected every year, bringing the total number of projects selected in the five years since the start of the SDM in 2013 to 36 including those selected in 2018. Our grant recipients have so far reported outstanding achievements. Based on their experiences, the six projects that were completed in 2018 have the following key messages to share:

- Conservation may not be possible without introducing alternatives to the local communities who solely depend on natural resources for their livelihood. Income generating activities can reduce dependence on natural resources and the consequent pressure on ecosystems (COBEC, Kenya).
- Indiscriminate use of agricultural chemicals (e.g. pesticides) may cause vulnerable species to become extinct rapidly. The presence of the stingless bee in Taiwan serves as an environmental indicator, which reminds local residents of the importance of habitat conservation (HDARES, Chinese Taipei).
- Capacity building of local communities can effectively enhance their understanding of conservation values in SEPLS, promote their livelihoods based on sustainable use of natural resources, such as the collection and marketing of shrimps in the Sundarbans, and ensure their participation in multi-stakeholder conservation initiatives (JEEF, Bangladesh).
- Communities must be included from the initial stage of data collection, as they are more likely to accept recommendations based on information that they participate in collecting. Conservation projects should refrain from imposing findings and recommendations on communities, as this may result in actions that are not socially sustainable (CSA, Kenya).
- Partnering with community groups enhances the ownership of project activities by the local communities, while facilitating the implementation of the activities by the community makes it easier to achieve project objectives. Partnerships with other stakeholders enhances the project visibility and increases the potential for scaling up the project activities (KEFRI, Kenya).

- Community Based Mangrove Agro-Aqua-Silvi-Culture - a mixture of traditional and scientifically based cultivation of mangrove faunal and floral species – is more profitable and has very limited environmental impacts as compared to commercial shrimp culture, which causes habitat degradation and biodiversity loss in the Sundarbans (Unnayan Onneshan, Bangladesh).



Community members collecting water with donkeys from the same water hole used by wildlife, Laikipia County, Kenya (CSA)

Outline of the booklet

This booklet has been prepared for IPSI member organisations, as well as for others who are engaged in SEPLS, to introduce SDM and to provide snapshots of the projects implemented by our sub-grant recipients. The booklet starts with an introduction to SDM, followed by a list and a global map of the sub-grant projects. The third section provides an overview of the sub-grant projects newly selected in 2018. The fourth section summarises the highlights of the achievements from the six sub-grant projects that were completed as of February 2019. Comments on SDM from the Director of the IPSI Secretariat are provided in the final section.

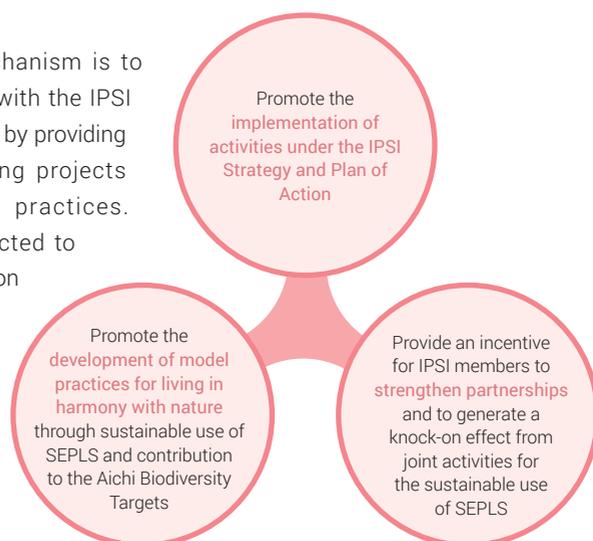
About the Satoyama Development Mechanism

What is the Satoyama Development Mechanism?

The International Partnership for the Satoyama Initiative (IPSI) has been working with its diverse partners to promote various activities on the sustainable use of socio-ecological production landscapes and seascapes (SEPLS) in both developed and developing countries since its launch in October 2010. However, there are barriers to the implementation of such activities on the ground, including limited financial resources for initial investments. To overcome these constraints, and to further promote the implementation of IPSI activities, the Satoyama Development Mechanism (SDM) was jointly established by the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS), the Institute for Global Environmental Strategies (IGES), and the Ministry of the Environment, Japan (MOEJ) as a collaborative activity under the framework of IPSI.

Objectives

The purpose of this mechanism is to facilitate activities in line with the IPSI Strategy and Plan of Action by providing seed funding to promising projects that demonstrate good practices. These activities are expected to contribute to the preservation and enhancement of biodiversity in SEPLS for achieving the Aichi Biodiversity Targets.



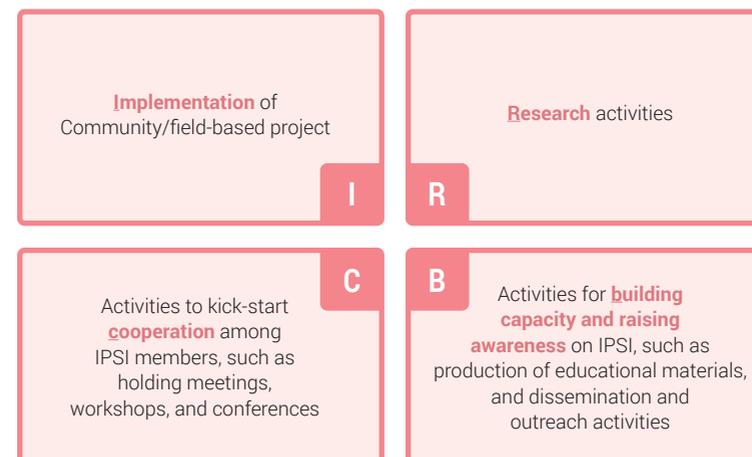
The SDM is expected to fulfil the following three objectives

The SDM fund aims to help recipients further develop their respective projects to attract additional resources, while also facilitating collaboration among members. As such, the SDM encourages the mobilisation of other financial resources for the implementation of its activities. The results of the outstanding activities supported under the SDM shall be shared among various stakeholders through IPSI.

Scope

The SDM grant is provided to selected projects to support development, implementation, monitoring and information dissemination on the sustainable use of SEPLS. The funds may be used to support a wide range of activities implemented by IPSI members, and which fall in line with the IPSI Strategy. The grant particularly focuses on fostering model practices which are both replicable and appealing to the IPSI member organisations. Proposals from IPSI members are invited under these four project types:

Proposals from IPSI members are invited under four project types:



Project selection process and governance

IPSI member organisations interested in applying for the SDM grant are welcome to visit our website for more details on how they can apply and on the details of the selection process, by searching for 'Satoyama Development Mechanism', or directly entering <http://www.iges.or.jp/en/natural-resource/bd/sdm.html#ob> into their internet browser.

2

Overview of the SDM Projects

Since the establishment of the SDM in 2013, 36 projects have been selected, as listed in the table below. An overview of the proposals from six grant recipients newly selected in 2018, as well as highlights of the results of the recently completed six projects are presented in the following sections.

Organisation	Project title	Project type	Progress*
Projects selected in 2018			
SAFE, India	Sustainable Intensification of Ecosystem Services for Conservation of Production Agriscapes and Biodiversity in Community Conserved Forests of Western Arunachal Pradesh, India	I	Ongoing
FPCI, Panama	Conservation and management of biodiversity of cultural, spiritual and food sovereignty importance and recovery of indigenous knowledge in the management of their territory	I	Ongoing
EPIC, Uganda	Establishment of Vetiver Grass Nursery and Hedge Rows for control of Eutrophication in Lake Victoria	I	Ongoing
CENDI, Viet Nam	Community implementation of mixed species restoration for livelihoods and ecological functions	I	Ongoing
ICRAF, Indonesia	Enhancing Upland Adaptation to Multidimensional Shocks and Stressors for Improving Livelihood and Landscape	R	Ongoing
AMAF-BENIN, Benin	Strengthening Resilience for Community Conservation of Biodiversity and wet ecosystems in Ouémé Valley	B	Ongoing
Projects selected in 2017			
Conservation Solutions Afrika, Kenya	Use of Mobile Technology for assessing community and wildlife use of rangeland resources	I	Newly completed
Kenya Forestry Research Institute (KEFRI), Kenya	Restoration of Sacred Kaya forests in Kenyan Coast for enhanced provision of ecosystem services and products for improved livelihoods	I	Newly completed
Unnayan Onneshan, Bangladesh	Designing an Enhanced Bio-diverse Adaptation to Climate Change in the Sundarbans	I	Newly completed
HDARES, Chinese Taipei (Taiwan)	Taiwan stingless bee field investigation and greenhouse pollination preliminary work	R	Newly completed

CORFOPAL, Colombia	Resilience level assessment of the Key Biodiversity Areas San Antonio Forest/KM 18 and community empowerment on conservation	B	Ongoing
University of the Philippines Open University, Philippines	Contextualisation of the Instructional Materials for the Training of Youths toward Conservation of Ifugao Rice Terraces as a Satoyama Landscape	B	Ongoing
Projects selected in 2016			
Community Based Environmental Conservation (COBEC), Kenya	Strengthening Community Participation in Biodiversity Conservation through Benefit Sharing and Capacity Building	I	Newly completed
A Rocha Ghana, Ghana	Mangrove restoration to improve socioecological production landscapes and seascapes for fisheries recovery at the Muni Pomadze Ramsar Site	I	Completed
Japan Environmental Education Forum (JEEF), Bangladesh	Project for conserving Bangladesh Sundarbans SAYATOMA and developing its showcase through creating action plan and ensuring the sustainable use of natural resources by promoting mangrove restoration, traditional culture and skill of mangrove's shrimp collection	I	Newly completed
M. S. Swaminathan Research Foundation, India	Problems and 'prospects' of SEPLS' conversion for alternate benefits – A research case study from the Western Ghats	R	Ongoing
National Dong-Hwa University, Chinese Taipei (Taiwan)	Facilitating the Development of a Taiwan Partnership for the Satoyama Initiative (TPSI)	C	Completed
Landcare Germany, Europe	Preparing the conservation and development of cultural landscapes on a European level	C	Ongoing
Projects selected in 2015			
IORA, India	Integrated participation of institutional stakeholder for upliftment of rural livelihood through sustainable harvesting and market linkages of NTFPs and Agriproducts	I	Completed
SPERI, Viet Nam	Restoration of local valuable tree species in the Huong Son upper catchment through nursery, extension of plantings, and field documentation for ensuring sustainability of SEPLS	I	Completed
Conservation Alliance International, Ghana	Enhancing Cocoa Agroforestry in Ghana through an integrated Geographic Information Based (GIS) based monitoring system	I	Completed
APAIC, Peru	Towards an Strategy for Mitigation of Climate Change Effects in the Coastal Region of Peru, in the Context of the El Nino Event	C	Completed
EPIC, Uganda	Satoyama Initiative National Network Workshop for UGANDA	C	Completed
Environmental Education Center Zapovedniks, Russia	Cultural landscapes as vectors for local sustainable development	B	Completed

*As of February 2019

Organisation	Project title	Project type	Progress*
Projects selected in 2014			
AERF, India	Promoting Green Entrepreneurship for conservation of Satoyama landscapes in the North Western Ghats, India	I	Completed
A Rocha Ghana, Ghana	Restoration of Community Sacred Forest to Enhance Socio Ecological Landscape in the Effutu Traditional Area, Ghana	I	Completed
National Dong-Hwa University, Chinese Taipei (Taiwan)	Tailoring Satoyama initiative concepts to national and local context: A Case Study of the collaborative planning process of a Rice Paddy Cultural Landscape in an Indigenous Community, Taiwan	I	Completed
APAIC, Peru	Evaluation of the biodiversity chain in barren landscapes ecosystems restored through reforestation with <i>Caesalpinia spinosa</i> , in the southern semiarid coast of Peru	R	Completed
Landcare Germany, Romania	Fostering cooperative nature conservation to preserve and develop the cultural landscape (SEPL) in the Carpathian Region of Pogány-havas	C	Completed
SPREP, Pacific Region	Healthy islands, oceans and people	B	Ongoing
Projects selected in 2013			
IKAP, Thailand	Supporting and Promoting the Karen Indigenous Socio-ecological Production System in Northern Thailand	I	Completed
Kathmandu Forestry College (KAFCOL), Nepal	Documentation of Biological Resources for Preparation and Piloting of Local Bio-diversity Strategy and Action Plan (LBSAP) in Three Ecological Production Landscapes of Nepal	I	Completed
Nature and Livelihoods, Uganda	Experimenting on production of high value market products from indigenous wild fruits	R	Completed
SWAN International, Chinese Taipei (Taiwan)	Converting pests as allies in tea farming - a potential case of Satoyama landscape in Hualien, Taiwan	R	Completed
Asociación ANDES, Peru	Hosting the Satoyama Initiative Steering Committee Meeting and Global Conference in 2015	C	Completed
Environmental Education Center Zapovedniks, Russia	Cultural landscapes as vectors for local sustainable development	B	Completed

*As of February 2019

Legend and breakdown of Projects under project types and geographical regions:

Project type	Africa	Americas	Asia & Pacific	Europe	Total
I Implementation of community/field-based project	7	1	10		18
R Research activities	1	1	4		6
C Activities to kick-start cooperation among IPSI members, such as meetings, workshops and conferences	1	3	2	2	8
B Building capacity and raising awareness on IPSI	1		1	2	4
Total	10	5	17	4	36

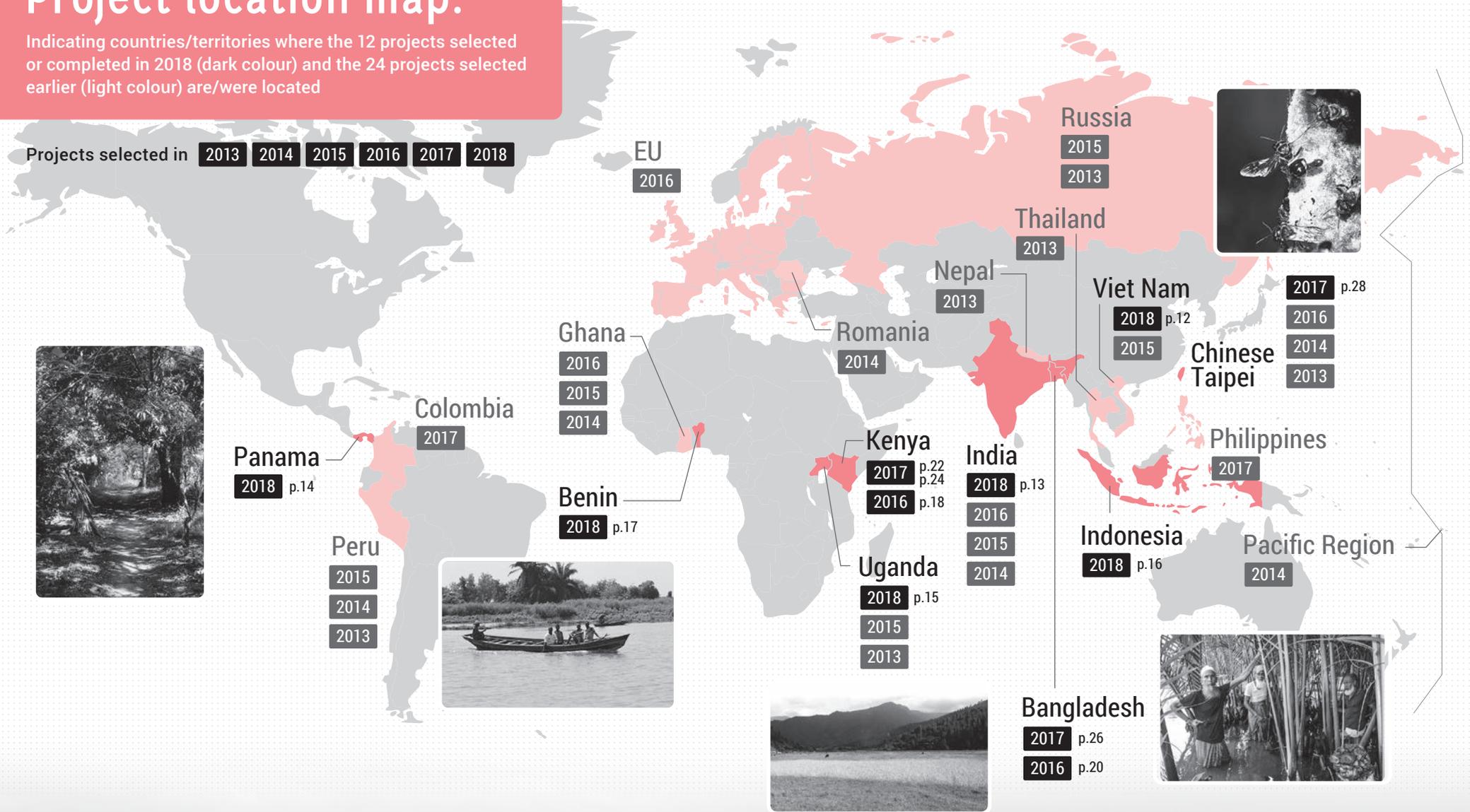


Pumpkin harvest, Gunayala region, Panama (FPCI)

Project location map:

Indicating countries/territories where the 12 projects selected or completed in 2018 (dark colour) and the 24 projects selected earlier (light colour) are/were located

Projects selected in 2013 2014 2015 2016 2017 2018



VIET NAM

3-1

Community implementation of mixed species
restoration for livelihoods and ecological functions
Community Entrepreneur Development Institute (CENDI)

Project duration: January 2019–December 2020

Project outline

Mono-plantations of Acacia, Pine and Eucalyptus in the Lien Trach commune in Viet Nam have resulted in landscape damage, the loss of biodiversity and ecological functions, as well as economic loss and livelihood vulnerability to climate change impacts, i.e. strong winds and typhoons. Moreover, local youths and farmers continue to abandon their land to work as hired labourers in other places for short-term cash, or quick income from the immature harvesting of Acacia plantations. In view of these threats, but also resource degradation and continuing impacts of war-related defoliation activities, there is a critical need to build local human capacity and create livelihood sovereignty. This project seeks to involve a group of young farmers (as change agents) in the restoration of mixed species, and organise community workshops to obtain the proper knowledge and facilitate community use of mixed species (of local trees and animals) for the provision of complementary ecological and landscape functions as well as diverse income-streams. The key project outcome will be evidence-based, empirical farm models of mixed species restoration, to contribute to local policies for the revitalisation of indigenous species for landscape resilience, with a view toward achieving long-term sufficiency and livelihood sovereignty of farmers.

right: Harvesting ginger under traditional cropping system / **left:** Youth representative next to recently planted orange fruit tree, holding stick used to capture insects



3-2

Sustainable Intensification of Ecosystem Services for Conservation
of Production Agriscape and Biodiversity in Community Conserved
Forests of Western Arunachal Pradesh, India
South Asian Forum for Environment (SAFE)

Project duration: December 2018–December 2020

Project outline

The proposed intervention aims to achieve sustainable intensification of ecosystem services as a measure to conserve biodiversity in the agricultural production landscape ('agriscape') of community conserved forests in Arunachal Pradesh, India. It thereby seeks to ensure food security and improved livelihoods of the agrarian indigenous communities of the eastern Himalayas. The area comprises diverse agro-climatic ecosystems with rich agro-biodiversity based on traditional farming practices. Its community reserve forests are inhabited by five tribes with diverse linguistic and religious affinities practicing traditional slash-burn agriculture, which re-shapes the agriscape. In view of new challenges, such as raising temperatures, shifting of terraced fields to higher altitudes or clearing valleys, the current situation demands an adaptive framework for planning how to conserve the production agriscape through a sustainable intensification of ecosystem services. The project therefore intends to map the changing trends of indigenous farming practices on a geospatial platform to identify the drivers of change and as well as assess its direct impact on local agro-biodiversity and ecosystem services and its tandem effects on local livelihood and wildlife habitat.

Community engaged in thrashing activity in
SEPL of Western ArunachalWhite Rice (Indian Wet Rice) and Red Rice
(Japanese)

3-3

Conservation and management of biodiversity of cultural, spiritual and food sovereignty importance and recovery of indigenous knowledge in the management of their territory

Foundation for the Promotion the Indigenous Knowledge (FPCI)

Project duration: December 2018–December 2019

Project outline

In recent years, the indigenous Usdub community in the Gunayala region of Panama has seen the loss of traditional knowledge related to biodiversity conservation and the region's ecosystems, which has endangered biodiversity, cultural and spiritual practices, as well as community food security. The project aims to strengthen the spiritual practices by conserving the sacred sites and important ecosystems of the community in order to improve the management of the lands, forests and agricultural biodiversity around the sacred sites and ensure the conservation and protection of these sites through practices of spiritual and cultural interest, and for food production. Emphasis is placed on the participation of young and Guna women from the community in the production and recovery of native seeds that are in danger of extinction as well as in the recovery of indigenous knowledge in the management of the ecosystems, with a focus on agricultural biodiversity that is used in spiritual, ceremonial, cultural and nutritional practices. The FPCI, together with the Usdub community, has taken the initiative for the recovery, in situ conservation of biodiversity, management of natural resources and the recovery of indigenous knowledge in order to contribute to the CBD Aichi Biodiversity Targets.



Coastal landscape of Gunayala region



Meeting of women of Usdub community

3-4

Establishment of Vetiver Grass Nursery and Hedge Rows for control of Eutrophication in Lake Victoria

Environmental Protection Information Centre (EPIC)

Project duration: January 2019–December 2020

Project outline

The decline in native fishing on Lake Victoria compels lakeside communities to engage in farming on fragile landscapes and on soils prone to erosion. Excess soil nutrients, especially phosphorous attached to soil particles, are washed down to the lake by runoff causing eutrophication, a process that triggers the growth and spread of Water Hyacinth Weed (*Eichhornia crassipes*) on the lake's surface. The weed forms a dense mat, blocking sunlight for organisms below, depleting the low concentrations of oxygen in the lake, and traps fishing boats and nets of all sizes. The project will apply the Farmer Field School (FFS) approach to address the cause of eutrophication through training farmers in soil erosion control measures, and provision of Vetiver grass planting material to target farmers. The project seeks to establish a 2-ha Vetiver grass nursery in Kikondo fishing village to serve as a source of planting material for the community. Hands-on training in a field setup for farmers and Village Based Trainers will be conducted to equip them with skills for pegging out contour lines in their fields, planting and maintaining Vetiver hedges. A 0.5-ha crop field treated with Vetiver grass hedgerows, the first of its kind in the region, will be setup by the project at Bugungu Uganda Prison farm on the shore of Lake Victoria to exhibit the novel technology in the project area and beyond.



Work has begun on Vetiver Grass Nursery in Kikondo on Lake Victoria

Rocko landing site: Water Hyacinth weed has sealed off most landing sites on Lake Victoria



3-5

Enhancing Upland Adaptation to Multidimensional Shocks and Stressors for Improving Livelihood and Landscape World Agroforestry Centre (ICRAF)

Project duration: December 2018–November 2019

Project outline

Seasonal crops are grown on sloping land converted from the coffee agroforestry in Pagar Alam District, a highland coffee producer in Sumatra. The area faces various challenges such as deforestation, forest encroachment for agriculture, and low quality and productivity of the smallholders' coffee. The local government, jointly with the World Agroforestry Centre (ICRAF) and the private and local government stakeholders initiated a joint effort to improve the smallholders' capacity in coffee farming practices. However, due to the limited information regarding the smallholders in Pagar Alam, the current capacity building curriculum is mainly focused on the productivity and quality, without integrating any strategy to improve farmers' resilience or conservation of the highland landscape. The proposed project will explore the existing knowledge regarding the drivers of vulnerability and adaptation needs of farmers, to generate recommendations for capacity building curricula that are targeted toward stimulating smallholders' sustainable farming practices and improving farmers' resilience. The project has two main objectives: (1) To assess the coffee smallholders' vulnerability that affects their livelihoods and landscape; and (2) To enable smallholders to apply adaptation measures that simultaneously address livelihood and landscape improvement. The proposed initiative will demonstrate the boundary work, which links sciences with local actions through capacity building, and facilitates intensive interaction between the stakeholders.



left: Intensive cropping replacing coffee agroforestry on steep land
right: Women working on seasonal crops

3-6

Strengthening Resilience for Community Conservation of Biodiversity and Wet Ecosystems in Ouémé Valley Amis de l'Afrique Francophone - Benin (AMAF-BENIN)

Project duration: January–December 2019

Project outline

The project aims to strengthen capacities of local communities in Avagbodji, Bembé, Gbojé, Hozin villages of Aguégoués Municipality, to effectively manage and conserve wet ecosystems. It adopts a participatory and community-based management strategy that aims to encourage cooperation between local authorities and communities, and to help them acquire knowledge and skills they need to protect coastal environments on which biodiversity and their livelihoods depend. The project will strengthen three ecosystem services provided by coastal marine environments: CO₂ sequestration; safeguarding rare and threatened wildlife species; and support for fish stocks. The two main activities are: (1) To develop, publish and disseminate the rules of sustainable management of the targeted areas in Ouémé valley for wet ecosystems protection; and (2) To conduct eco-guards training, monitoring activities and replanting of mangroves involving local communities to ensure success of restoration and sustainable livelihoods for over 12,000 people. The project will contribute to enhance traditional knowledge for the sustainable use of biodiversity, and the eradication of extreme poverty, helping communities organise for a better protection of biodiversity and wetland ecosystems, and result in direct benefits for livelihoods.



Embankment of Hozin



Community dialogue workshop and dialogue community

Results of Completed SDM 2016 Projects

KENYA

4-1

Strengthening Community Participation in Biodiversity Conservation through Benefit Sharing and Capacity Building Community Based Environmental Conservation (COBEC)

Project duration: October 2016–March 2018

Project overview

Poverty, increasing population pressure, and lack of education and awareness, commonly result in destructive practices in marine environments, as happened in the coast of Marereni in Kenya. Moreover, lack of capacity of local communities in natural resource management, weak governance and mangrove destruction were leading to unsustainable utilisation of mangrove resources, altering forest ecosystems and diminishing carbon sequestration capabilities. In response, the specific objectives of this project were: (1) To strengthen local capacity to adapt to climate variability and change including strengthening environmental governance systems; (2) To enhance mangrove forest protection and management including reforestation and livelihood enhancement; and (3) To protect and conserve sea turtles and their habitat.



Highlights of project results

- The project achieved important environmental benefits such as rehabilitating destroyed mangrove forests, restoring the breeding sites for fish and contributing to the increase of the global sea turtle population.

- The project mobilised community groups and overcame the challenge of restoring sites where mangroves had been depleted by salt firms and the local community. Planting of approx. 60,000 trees in community farms has led to a change of attitude of the community which previously was purely dependent on mangrove wood/fuel products for sale and making of charcoal.
- There is great change in attitude and perception relating to sea turtles in the area. Reported turtle killing and capture have decreased almost by 50% following the awareness campaign and surveillance through joint patrols.
- Education programmes and specific training have greatly empowered the local community in knowledge and skills. About 70% of the local fishermen and other marine resources users are aware of the interconnectedness of the marine environment, e.g. that the loss of one species can ruin the entire ecosystem.
- The introduction of alternative livelihoods has seen beneficiaries earn income through sale of products from the income generating activities implemented by the project, such as beekeeping, fishing, poultry and vegetable growing. This has motivated community members to support project implementation.

Key lessons

- Natural resource conservation and protection is possible through stakeholder and community involvement. The introduction of income generating activities reduces pressure on marine resources and the introduction of community managed woodlots reduces pressures on mangroves by providing alternative wood products.
- Conservation may not be possible without introducing alternatives to the local community who solely depend on natural resources for their livelihood. Income generating activities reduced dependence on natural resources thereby reducing pressure on ecosystems.



Women setting up a mangrove nursery



Bycatch turtle release programme

BANGLADESH

4-2

Project for conserving Sundarbans SAYATOMA and developing its showcase through creating action plan and ensuring the sustainable use of Natural resources by promoting mangrove restoration traditional culture and skill of mangrove shrimp collection Japan Environmental Education Forum (JEEF)

Project duration: October 2016–September 2018

Project overview

The Sundarbans constitute the single largest mangrove forest in the world and are a UNESCO World Natural Heritage and RAMSAR wetland site. They are home to many endangered species and support the livelihoods of approximately 3.2 million people. However, this SEPLS has faced threats from a lack of a) multi-stakeholder planning for their conservation and management; b) environmental awareness of local communities; and c) good practices for harvesting and using natural resources. To address these shortcomings the project aimed to:



- (1) Organise a forum to create “Action Plan 2030” involving local communities, local government, GOs and NGOs representatives, to design future government policies, reduce gaps in coordination, implement government laws and ensure the rights of forest people and other stakeholders.
- (2) Conduct mangrove plantation activities and its management by local community participation.
- (3) Promote good practices for harvesting and using natural resources, such as *khoti*, one of the traditional shrimp drying techniques.

Highlights of project results

- The most important achievement of the project is the development of the Sundarbans Mangrove SATOYAMA Conservation Guideline, which will be available to nearly 3.2 million coastal people for options on how the Sundarbans can be conserved.
- A forum has been established that will meet annually to reduce the gap of coordination among the organisations (government, NGOs, universities and

communities) working for the conservation of the Sundarbans’ ecosystems based on a Co-Management Strategic Action Plan.

- The project also created a close relationship with the target 100 fishermen, who received education on the value and ways of biodiversity conservation in the Sundarbans. The fishermen and their families received training on the processing and packaging of traditionally dried shrimp and its marketing. As a result, the target community is now practicing sustainable natural resource harvesting, their income has increased and their livelihood is being improved.
- Moreover, 5,000 mangroves have been planted for enhancing the resilience of the coastal embankment.

Key lessons

- The project delivered effective strategies to increase the understanding of impoverished fishing communities about conservation values and sustainable shrimp collection methods while it ensured their participation in multi-stakeholder conservation initiatives of Sundarbans’ mangrove ecosystems.
- At the same time, the project successfully introduced an innovative model that promoted the marketing of traditionally processed dried shrimp by the fishermen’s families through capacity building on packing technology.



Map of Satkhira district in the Sundarbans, which includes the project area



top: Training Workshop on packaging of traditional processed shrimp



bottom: Packaging of dried shrimp by the fishermen’s family members

KENYA

4-3

Use of Mobile Technology for assessing community and wildlife use of rangeland resources Conservation Solutions Afrika

Project duration: October 2017– September 2018

Project overview

This semi-arid rangelands of Laikipia county, Central Kenya, are the location of some of the most important wildlife habitats in Kenya, being home to elephants, rhinos, lions, leopards, giraffes, buffalos and several other megafauna species that are an integral part of the tourist industry. The same area is also the mainstay for livestock production which is the major economic activity for local communities. Laikipia is therefore one of the biggest and most productive SEPLS in Kenya. This project assessed the spatial, temporal and seasonal uses of key natural resources in Laikipia by both wildlife and livestock production, at selected water points and along the livestock movement routes that connect these water points. The main objective was to identify the balance points between the resource needs of wildlife and pastoral communities in order to conserve the resources and reduce conflict which has often occurred because the rangelands, pastures and water points are all shared between wildlife and livestock populations.



Highlights of project results

Key achievements under the project included:

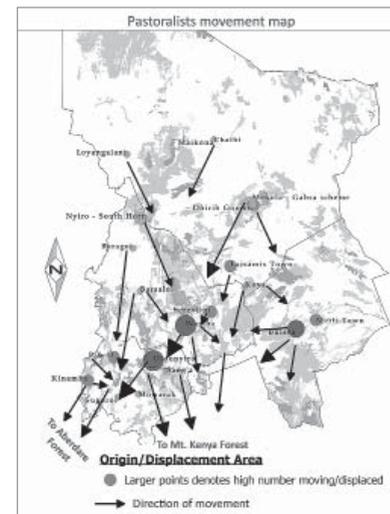
- Equitable practice of livestock production and wildlife conservation occurring in the same conservancy: This project demonstrated that biodiversity conservation can go hand-in-hand with a livestock production system.
- Use of simplified technologies that can include communities in collecting information about the SEPLs where they live: The project used mobile phones for

data collection based on GSM technology to develop a cost efficient and effective way to collect data, while fully involving local communities.

- Training of communities on basic principles of natural resource management for their own livelihoods, instead of externally-driven conservation objectives.
- Production of livestock, wildlife and community movement maps which will be used to advice policy development for Laikipia to enhance livelihoods, conservation and security.

Key lessons

- It is important to partner with state authorities, because they are the ones who have the resources and legal mandate in Kenya to guarantee the sustainability of positive outcomes.
- Communities must be included from the beginning when the data is being collected, because they will be willing to accept recommendations based on information that they participate in collecting. Most conservation projects in east Africa are guilty of imposing findings and recommendations on communities after the work has been completed, resulting in actions which are not socially sustainable.
- IPSI members, with the assistance of the secretariat, should have a system of sharing visits, lessons and long-term results between SDM grantees.



Map showing the movements of livestock into Laikipia (far south-west) from neighbouring counties



Interviewing herdsmen



Field survey team

Restoration of Sacred Kaya forests in Kenyan Coast for enhanced provision of ecosystem services and products for improved livelihoods

Kenya Forestry Research Institute (KEFRI)

Project duration: November 2017– October 2018

Project overview

Kaya forests are unique multi-functional socio-ecological production landscapes that provide direct and indirect benefits for human wellbeing. These forests are increasingly being degraded due to rapid population growth, overdependence on natural resources by local communities and cultural erosion brought about by modern education and religion. The weak enforcement of laws governing the conservation of these forests coupled with the loss of cultural values and practices that have traditionally been used to conserve the forests present conservation challenges that require urgent holistic intervention. In view of this, this project aimed: (1) To enhance the capacity of local communities to undertake restoration of degraded sites in Kaya forests; (2) To initiate successful nature based enterprises for biodiversity conservation and socio-economic development; and (3) To enhance the capacity of local communities in climate change adaptation and mitigation through conservation of biodiversity and cultural heritage.



Highlights of project results

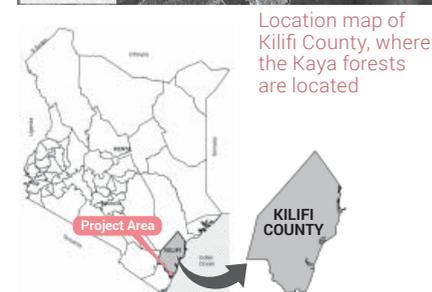
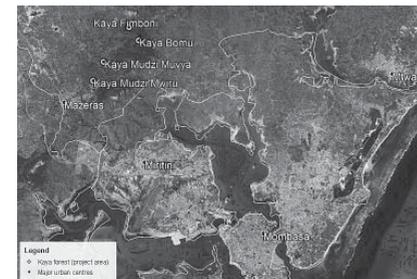
- The most important achievement of the project was improved capacity of local communities to undertake restoration of degraded sites in Kaya forests, and regularly monitor the recovery of replanted sites using a community-based monitoring tracking tool. This can serve as a model for ensuring sustained long-term community-led conservation efforts.
- The operationalisation of a community seed bank and tree nurseries has sustained restoration activities by availing quality indigenous tree species seedlings, provided a good starting point for conservation of landraces and raised awareness on the importance of landraces among the community. Up-scaling of the seed

bank is expected to further improve farmers' access to resilient and affordable seeds for traditional crop varieties.

- The project has also contributed to enhanced sales of value added nature based products and services (eco-tourism, basketry, bee-keeping and traditional artefacts), thereby contributing to increased household incomes.

Key lessons

- Partnering with community groups enabled the project to penetrate the communities, and enhanced ownership of project activities by the local communities. Facilitating the implementation of activities by the community made it easier to achieve project objectives. Moreover, partnerships with other authorities such as relevant ministries of the county governments, NGOs and other stakeholders enhanced the project visibility, increasing the potential for upscaling project activities.
- Effective training of community groups enabled them to act as agents of change. Improved capacity of local communities to undertake restoration of degraded sites in Kaya forests, and regularly monitor the recovery of replanted sites using community-based monitoring tracking tool can serve as a model for ensuring sustained long-term community-led conservation efforts.
- The project also found that there is need for support to scale up project activities to meet the demand from other Mijikenda communities.



Location map of Kilifi County, where the Kaya forests are located



Training of community on nursery management

BANGLADESH

4-5

Designing an Enhanced Bio-diverse Adaptation to Climate Change in the Sundarbans Unnayan Onneshan (UO)

Project duration: November 2017–November 2018

Project overview

The Sundarbans is the largest contiguous mangrove ecosystem of the world enriched with high biodiversity. The combination of various types of ecosystems (forest, coastal and wetland) makes the Sundarbans home to uniquely adapted aquatic and terrestrial flora and fauna. A significant number of people maintain their livelihoods by utilising these resources. This globally important ecosystem is now vulnerable due to anthropogenic pressures amidst fragile institutions and ineffective command-driven governance system. On the positive side, the customary sustainable practices and traditional knowledge of traditional resource users contribute to conservation, restoration and sustainable uses efforts, if such is recognised by agencies concerned. This project aimed at designing a pilot project by assessing the sustainability of a traditional knowledge based integrated cultivation method, innovated by the indigenous people and local communities (IPLCs), which combines floral and faunal species as a response to the critical impacts of anthropogenic pressures and climate change on the Sundarbans of Bangladesh. The method has been termed as Community Based Mangrove Agro-Aqua-Silvi-Culture (CMAASC).



Highlights of project results

- The project organised group consultation with the traditional resource users, conducted participatory vulnerability resource assessments, specified sustainability indicators, assessed the cultivation method based on indicators, undertook a cost-benefit analysis, verified and finalised the findings, designed a pilot project and disseminated the findings at policy level.

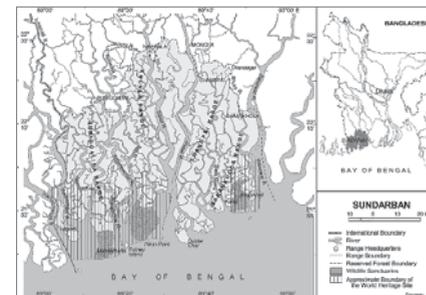
- The project has exhibited that CMAASC - a mixture of traditional and scientifically based cultivation of mangrove faunal and floral species – is more profitable and has negligible environmental impacts as compared to commercial shrimp culture, which has caused habitat degradation and biodiversity loss.
- The Cooperatives have mobilised the traditional forest users or *Banajibis* and provided a space for discussion, consultation, planning, and claiming their rights. Moreover, the Cooperatives have also become platforms for inspiration for innovative options, such as locally available climate adaptive economic activities.

Key lessons

- CMAASC has been found to be a long-term community-based adaptation measure and an alternative to commercial shrimp culture. CMAASC can be promoted as a long-term community-based adaptation measure that responds to the agro-ecological zone's associated climate risks.
- The community-based biodiverse adaptation mechanisms help reduce pressure on the Sundarbans by reversing mangrove degradation, reducing habitat vulnerability and providing forest resources while ensuring livelihood security for IPLCs through the generation of multiple income sources.
- The contributions of IPLCs towards vulnerable ecosystems and knowledge regarding adaptation to changing ecosystems have to be promoted in the post 2020 CBD framework.



Aqua culture in a CMAASC plot



Map of the Sundarbans



The pioneer of CMAASC Culture on his farm

CHINESE TAIPEI (TAIWAN)

4-6

Taiwan stingless bee field investigation and greenhouse pollination preliminary work

Hualien District Agricultural Research and Extension Station (HDARES)

Project duration: January 2018–December 2018

Project overview

An endemic species of stingless bee, *Lepidotrigona hoozana*, was traditionally used in Taiwan based on aboriginal practices as main pollen insects and for the production of propolis. The main nesting plants include native tree species such as Roche's salt wood, mulberry tree, and Elephant's Ear trees. However, due to habitat degradation and deforestation for betel nut and tea production, as well as the use of agrochemicals, including pesticides and herbicides, the stingless bee populations are now close to extinction in their native habitat. Recently, in Taiwan only about 30 stingless bee nests were found in the wild. Stingless bees have considerable potential in bee pollination, and even medical and chemical use. In order to contribute to the recovery and conservation of pollinated bees, the project experimented rearing the stingless bees in tree barrel hives from the wild in the primary forest as a rich enough source to supply the feeding environment.



Highlights of project results

- The project succeeded in identifying pollen sources of stingless bees among the flora of Taiwan, and making bee food suitable for improving strength and reproduction of the bees. As the supply of pollen is insufficient and the stingless bees can be affected by diseases, the following substances can be used as alternative pollen food to improve bee health and bee colony breeding, and ultimately to increase the bee population: highly digestive soy, protein decomposition products, beer yeast powder, white granulated sugar, integrated vitamins, citric acid, Chinese herbal medicine extract powder, garlic powder and unsaturated fatty acids.

- Earlier problems of artificial breeding and reproduction were solved. The project demonstrated that stingless bees can live in rearing conditions and assist farmers in the pollination of greenhouse cultivation.
- The project also preliminarily completed the pre-pollination trial of greenhouse bitter melon.
- These results have attracted attention of other relevant government units in Taiwan, including the Construction Department, Xueba National Park, and the Hualien Forest Management Office. They invited the project team to develop further plans. The project results have also been reported by the media, including online media, prompting public discussion of the stingless bee issue.

Key lessons

- Abuse of agricultural chemicals (e.g. pesticides) may cause the stingless bee to become extinct rapidly. This species thus serves as an environmental indicator, which reminds residents of the importance of the habitat.
- Furthermore, the stingless bee is suitable for greenhouse pollination. However, without appropriate guidelines on stingless bee beekeeping, the stingless bee colonies may collapse.
- Both pollination and propolis product development are worthwhile and meaningful for environmental conservation and economic development.

In the future, it is hoped that pollination tests can be carried out on various greenhouse melon plants in the region, in order to enhance the agricultural economic value.



Stingless bee approaching beehive



Local community member engaging in beekeeping



5

Contribution to IPSI objectives and global targets

Among the 36 SDM sub-grant projects selected since the commencement of SDM in 2013, 24 projects have been completed by March 2019.

All 24 projects demonstrated tangible contributions to the IPSI Strategic Objectives in various manners. In addition, the results contributed to several of the Aichi Biodiversity Targets and Sustainable Development Goals, according to the self-evaluation by the grant recipients (tables below). This demonstrates the strength of a landscape approach, addressing a number of targets that are locally important and pursued in a flexible manner.

Contribution and relevance of each project to the IPSI Strategic Objectives
(based on self-evaluation by grant recipients)

Project type	Recipient	Year of completion	IPSI Strategic Objectives*1			
			Objective 1	Objective 2	Objective 3	Objective 4
Community/ field-based implementation	CSA, Kenya	2018	●	●	●	■
	KEFRI, Kenya	2018		●	●	●
	Unnayan Onneshan, Bangladesh	2018	●	●	●	■
	COBEC, Kenya	2018	●	●	●	
	JEEF, Bangladesh	2018	●	●		●
	A Rocha Ghana (2)	2017	●	●		
	IORA, India	2017	●	●	●	●
	SPERI, Viet Nam	2016	●	●	■	●
	CAI, Ghana	2016	●	●	●	●
	A Rocha Ghana	2016	●	●	●	■
	National Dong-Hwa University (NDHU), Taiwan	2016	●		●	●
	IKAP, Thailand	2015	●	●	●	●
	AERF, India	2015	●	●	●	●
	KAFCOL, Nepal	2014	●	■	●	●
Research	HDARES, Taiwan	2018	●	●	■	●
	Nature & Livelihoods, Uganda	2015	●	■	■	●
	APAIC, Peru	2015	●	■	■	■
	SWAN International, Taiwan	2014	●	●	●	

Partnership	NDHU, Taiwan (2)	2017	●		●	●
	APAIC, Peru	2016	●	■	●	■
	EPIC, Uganda	2016	●	●		●
	Landcare Germany	2016	●	●	●	
CB / OR	Center Zapovedniks, Russia	2016	●	●	■	■
	Center Zapovedniks	2014	●	■		●

● Contribution ■ Relevance

Contribution and relevance of each project to the 2020 Aichi Biodiversity Targets
(based on self-evaluation by grant recipients)

Project type	Recipient	Year of completion	Aichi Biodiversity Targets*2																				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Community/ field-based implementation	CSA, Kenya	2018	●	●			●		●		●		●		●	●	●		●	●			
	KEFRI, Kenya	2018																					
	Unnayan Onneshan, Bangladesh	2018																					
	COBEC, Kenya	2018	●			●	●									●	●	●					
	JEEF, Bangladesh	2018	●	●	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	A Rocha Ghana (2)	2017	●				●	●															
	IORA, India	2017	●	■	●	●	●	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	SPERI, Viet Nam	2016	●	■			■	■															
	Conservation Alliance International, Ghana	2016	●	■			■		●								●	●			●	■	
	A Rocha Ghana	2016	●				■	■									●					●	
	National Dong-Hwa University (NDHU), Taiwan	2016	■	●		●			●							●	●	●				●	
	IKAP, Thailand	2015		■																			
	AERF, India	2015	●			●	●		●							●	●	●					
	KAFCOL, Nepal	2014	■																			■	■
Research	HDARES, Taiwan	2018	●	●			■		●							●	●				●	●	
	Nature & Livelihoods, Uganda	2015				●																	
	APAIC, Peru	2015	■	■																			
	SWAN International, Taiwan	2014	■		●	●				●	■												
Partnership	NDHU, Taiwan (2)	2017					●	●	●						●	●	●				●	●	
	APAIC, Peru	2016	■	●				■	■								●	●					
	EPIC, Uganda	2016	●			●			■														
	Landcare Germany	2016	■	●	●					■													
CB/OR	Center Zapovedniks, Russia	2016	●	■		■				■							●					●	
	Center Zapovedniks	2014	■														●					●	

● Contribution ■ Relevance

Commentary

Mechanism to Transform the Concept into Actions on the Ground

Hiroaki Takiguchi

“Socio-ecological production landscapes and seascapes” (SEPLS) typically include a mosaic of different ecosystems that provide many important ecosystem services and serve diverse uses, such as for agriculture, forestry and fisheries. SEPLS therefore contribute to both human beings and biodiversity. The Satoyama Initiative aims to promote and conserve SEPLS around the world with the vision of “realizing societies in harmony with nature.” As an international platform, the International Partnership for the Satoyama Initiative (IPSI) was established in 2010. Since then, the Partnership has expanded steadily. As of today, the number of IPSI members around the world has reached 240.

When we have a platform, we need a vehicle to proceed to our destination. The Satoyama Development Mechanism (SDM) functions like a vehicle to materialize the concept of the Satoyama Initiative. In other words, the SDM is a mechanism to transform the Satoyama concept into actions on the ground. As one of the collaborative activities under the IPSI framework, the SDM provides seed funding to on-the-ground efforts for the sustainable use of SEPLS.

Since its establishment in 2013, the SDM has supported 36 projects, producing great achievements. Looking at the list of the projects, what is remarkable is the diversity of activities in the supported projects. Some projects have focused on indigenous socio-ecological production systems. Other projects have integrated traditional ecological knowledge and modern science such as mobile technology. The achievements of the SDM tell us that there are no “one-size-fits-all” solutions on the ground because ecosystem services and values are diverse.

The projects supported under the SDM have also contributed to achieving the Aichi Biodiversity Targets (ABTs) and the Sustainable Development Goals (SDGs). These achievements demonstrate that the seed funding by the SDM can have great impacts. I hope the outcomes of the projects will be shared widely among IPSI members and other stakeholders, and that this will lead to next steps such as scaling up their actions.

Biography

Mr. Hiroaki Takiguchi joined UNU-IAS in July 2018 as Project Director. He leads and coordinates three UNU-IAS projects: the International Satoyama Initiative (ISI), Education for Sustainable Development (ESD), and Monitoring and Management of Persistent Organic Pollutants (POPs). He also serves as the Director of the International Partnership for the Satoyama Initiative (IPSI).

Prior to joining UNU-IAS, Mr. Takiguchi served with the Ministry of the Environment, Government of Japan (MOEJ), for over 20 years. From 2011 to 2014, he worked as a Senior Environmental Specialist at the Global Environment Facility (GEF) Secretariat in Washington, DC.



River bank in Gunayala region, Panama (FPCI)