# From collective learning to action

## *Integrated landscape approaches for sustainable development and climate change resilience*

ISAP 2016

## Key messages

- *A policy mechanism is needed to better integrate the social, economic and environmental dimensions of sustainable management of terrestrial and maritime ecosystems in a practical and coherent way in order to achieve food security and improved livelihoods.*
- *An integrated landscape approach can provide the basis for such a mechanism by facilitating the design and implementation of cross-sectoral frameworks and actions and addressing climate-relevant objectives at different scales.*
- *Integrated approaches can build upon governance arrangements that meet diverse stakeholder objectives and serve as a means of implementation for achieving multiple SDGs and other international targets.*
- *Integrated approaches are proposed to bridge science, practice and policy in order to overcome barriers and accelerate action for achieving the SDGs and associated targets.*
- *The Satoyama Initiative proposes such an approach for the management of socio-ecological production landscapes and seascapes (SEPLS), and the International Partnership for the Satoyama Initiative (IPSI) serves as a platform for stakeholders across countries and sectors to share their knowledge.*
- *IPSI and similar mechanisms can play an important role in maintaining or building momentum for integrated action to foster the achievement of the SDGs and ecosystem-related climate goals.*

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## 1. Introduction: What are integrated landscape approaches, and what are SEPLS?

Landscapes and seascapes around the world face serious threats today. Many current agricultural production systems are either too intensive, relying on high levels of external inputs such as chemical fertilizers and pesticides or irrigation, or too extensive with low levels of inputs or cycling of resources and slash and burn approaches. Both extremes have negative effects on natural resources and ecosystems. Deforestation or inappropriate land use conversion also constitute major challenges. In coastal seascapes, where communities interact with the terrestrial and marine ecosystems through production activities, threats are also very diverse and include overfishing including of threatened species, pollution from nutrients and pesticides, rising sea temperatures due to climate change, coastal development for industrial and tourism activities, and coral bleaching and damage.

Integrated approaches to management seek to address these threats by viewing the landscape or seascape as multifunctional and mosaic and where biodiversity and anthropogenic production activities coexist. The landscape or seascape offers a scale for management that allows for a holistic view of various resource-use interests to better achieve multiple objectives connecting diverse sectors from the local to national and global scales. This makes it easier to understand trade-offs and balance multiple goals with relation to both environmental and anthropogenic processes, such as

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livelihoods and sustainable resource management.

Integrated approaches to landscape and seascape management—hereafter called "integrated landscape approaches" —have been embraced by a diverse range of stakeholders in the international environmental and development community, including international organisations such as the Food and Agriculture Organisation of the United Nations (FAO), the World Bank, and the United Nations Environmental Programme (UNEP); international research organisations including the World Agroforestry Centre (ICRAF) and the Centre for International Forestry Research (CIFOR); and major non-governmental organisations. In 2012, the Convention on Biological Diversity (CBD) invited national governments to consider a landscape scale in trying to "improve sustainable use of biodiversity in a landscape perspective" (UNEP/CBD/COP/DEC/XI/25).

**Image 1. Karen Mae Um Pai community traditional landscape management, Thailand: Example of socio-economic production landscape** *(Credit: Jintana Kawasaki)*

The Satoyama Initiative, a global effort that focuses on human-influenced landscapes and seascapes, embraces integrated approaches for "socio-ecological production landscapes and seascapes" (SEPLS). The International Partnership for the Satoyama Initiative (IPSI) was created in 2010 to support the Satoyama Initiative and serves as a platform for organizations working on SEPLS and associated issues. Its member organizations have carried out a number of activities promoting integrated landscape approaches.

This Issue Brief presents and discusses the relevance to the sustainable development goals (SDGs) and international climate targets, with a particular focus on activities under IPSI. It focuses on collective action to generate, analyse and share the wealth of knowledge on SEPLS management globally, with the goal of fostering action for sustainable and integrated management of SEPLS, while enhancing their resilience and thus reducing existing threats and challenges.

## 2. Background: Recent developments in global environmental and development agendas

The global environmental and development agendas are now converging into a shared framework that addresses the three dimensions of sustainable development (economic, social, and environmental) and their governance requirements. At the landscape scale, this includes the dual need for efficient production systems and environmental sustainability while addressing nutrition, respect for culture, and economic security. Underpinning this convergence is a greater understanding of the interrelationships of poverty alleviation, food security, a healthy natural-resource base and functioning ecosystem processes. In many cases, current trends in agriculture and food systems have proved inadequate and unsustainable, as shown by continued hunger and malnutrition, unprecedented environmental degradation stemming from loss of forests and biological diversity, and deterioration of land, water and other natural resources. To meet growing food and nutritional demands in the context of sustainable food systems, production must increase substantially, while at the same time, the environmental and carbon footprints of agriculture must be reduced.

Researchers and development professionals have begun to turn their attention to achieving integrated approaches within naturally-defined landscapes. The term "landscape" is widely used to describe the mosaic of land uses, flora, fauna, people, and infrastructure that exist in a definable geographical location, and the functional relationships between them. It is a valuable concept for understanding how people, agriculture, forestry and fisheries, livelihood systems, biodiversity, and infrastructure can co-exist. Integrated approaches to landscape management "deliberately support food production, ecosystem conservation, and rural livelihoods across entire landscapes" (Scherr et al., 2012) and are based on shared values and co-benefits (Sayer et al., 2013). Similarly, seascape initiatives are underway in marine and coastal areas around the globe, representing a broad array of cultural and environmental contexts, at a variety of scales.

Many recent approaches also seek to integrate the climate change and sustainable development agendas, recognizing that they cannot be tackled

separately. This includes the concept of "climate-smart landscapes", which proposes practical ways to achieve mitigation, adaptation and agricultural production objectives while ensuring that important synergies are generated among different and biologically-diverse land uses, livelihood strategies, and food security priorities (Mbow et al., 2015; Scherr et al., 2012).

Integrated landscape approaches can contribute to achieving the post-2015 development and climate agendas by bridging the gap between global complexity and local reality. They also serve as a framework to facilitate the cross-sectoral co-ordination necessary to realise synergies and equitably managed trade-offs among the different dimensions of sustainable development.

| Sustainable Development Goals | | Relevance of integrated landscape and seascape approaches |
|---|---|---|
|  | End poverty in all its forms everywhere | Integrated approaches usually seek to identify and promote new livelihood opportunities in poverty-stricken rural areas. |
|  | End hunger, achieve food security and improved nutrition and promote sustainable agriculture | Food security, improved nutrition, and sustainable agriculture are generally important objectives of integrated approaches in rural areas. |
|  | Ensure healthy lives and promote well-being for all at all ages | Integrated approaches usually seek to contribute to well-being in local communities, involve younger generations and address major health issues related to the overuse of fertilizers or pesticides. |
|  | Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all | Innovating and transmitting indigenous and local knowledge, in addition to new knowledge, among communities is an important means within integrated approaches. |
|  | Achieve gender equality and empower all women and girls | Integrated approaches, which often benefit from participatory processes, tend to have a strong gender component. |
|  | Take urgent action to combat climate change and its impacts | Many integrated approaches include action to strengthen the resilience of landscapes and seascapes in the face of threats including climate change. |
|  | Conserve and sustainably use oceans, seas and marine resources for sustainable development | Sustainable use of marine resources is directly addressed by integrated approaches that cover the ocean as well as coastal seascapes, and the resources found in them. |
|  | Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, … and halt biodiversity loss | Human-influenced landscapes typically host important biodiversity and often face severe land degradation. Integrated approaches aim for the conservation and sustainable use of diverse terrestrial ecosystems. |
|  | Strengthen the means of implementation and revitalize the global partnership for sustainable development | Integrated approaches contribute to global partnership because they require cross-sectoral frameworks and actions developed through multi-stakeholder processes. |
| **Others** | Integrated approaches are relevant to some degree to all of the SDGs. For example:<br>SDG 6, "Ensure availability and sustainable management of water and sanitation for all", is affected by sustainable water-management practices at the landscape scale;<br>SDG 8, "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all", is helped by new employment opportunities for local community members;<br>SDG 11, "Make human settlements inclusive, safe, resilient and sustainable", applies to settlements of all sizes, and its Target 11.4, "Strengthen efforts to protect and safeguard the world's cultural and natural heritage", has strong relevance to so-called "cultural" or "historical" landscapes around the world;<br>SDG 12, "Ensure sustainable consumption and production patterns", is of central relevance to integrated approaches in production landscapes and seascapes. | |

**Table 1. SDGs with relevance to integrated approaches to landscape and seascape management**

## 3. The SDGs and the Paris Agreement: Relevance of integrated approaches

The SDGs were adopted as part of the 2030 Agenda for Sustainable Development at the United Nations Sustainable Development Summit in September 2015. The SDGs seek, among other things, to increase efficiency in the use of land, water and agricultural inputs to better contribute to environmental goals while bridging the gap between current yields and projected requirements to feed the global population throughout the rest of the 21st century. Productivity alone, however, is not sufficient to ensure food security and maintain the health of the natural resource base.

Essentially, all 17 of the SDGs have relevance to landscape and seascape management, and integrated landscape approaches therefore contribute to all of the SDGs, albeit to varying degrees. Table 1 contains information on the relevance of some of the SDGs. Of particular note are SDG 14 on maritime ecosystems and SDG 15 on terrestrial ecosystems, while goals on poverty eradication (1), food security (2), and wellbeing (3), as well as on education (4), gender (5), climate change (13), and governance (17) also have implications for landscape and seascape management.

The Paris Agreement, adopted by the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) in Paris in 2015, does not directly refer to integrated landscape management, but it does include important references to ecosystems and their management and resilience, as well as to the local people and communities that use the ecosystems and their natural resources. A number of provisions in the Agreement require the understanding of and action for climate change adaptation to ensure and improve livelihoods, knowledge, and resilience of local communities, including vulnerable communities. Local and subnational levels are mentioned with regard to the required scale for action, as well as "places", which in many cases correspond with landscapes. Ecosystem-based mitigation action focuses on the management of forests, which are a characteristic feature of most landscapes in temperate and tropical regions. The Paris Agreement includes a reference to "integral" approaches to forest management and associated non-carbon benefits.

Neither the SDGs nor the Paris Agreement explicitly refer to landscape approaches, but they do include references to the underlying ecosystems and their interacting relationships, par-

ticularly in the provisions on adaptation to climate change. Relevance to integrated approaches can thus be identified for the SDGs overall and, for climate goals, particularly in terms of adaptation.

# 4. Generating knowledge on socio-production landscapes and seascapes and how to promote them

Socio-ecological production landscapes and seascapes (SEPLS) are areas where humans are engaged in production activities – agriculture, forestry, fisheries, and others – and benefit from various ecosystem services while supporting biodiversity through a harmonious mosaic of habitats and resource uses. Through holistic and integrated approaches, SEPLS can meet a wide range of local needs – water, food, health, cultural values, etc. – without damaging ecosystems and biodiversity and thus contributing to national conservation and sustainable development priorities and global targets such as the SDGs and climate change mitigation and adaptation goals.

The Satoyama Initiative is a global effort to realise society in harmony with nature by promoting the revitalisation and sustainable management of SEPLS. The International Partnership for the Satoyama Initiative (IPSI) was created in 2010 to implement the vision of the Satoyama Initiative through cooperation and coordination of members' activities. IPSI members have engaged in a wide range of activities, from working with local communities on the ground to global-level policymaking, creation and dissemination of knowledge on the management and sustainable use of SEPLS, and collaborative activities between partners including the Institute for Global Environmental Strategies (IGES) and the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS), which hosts the IPSI Secretariat.

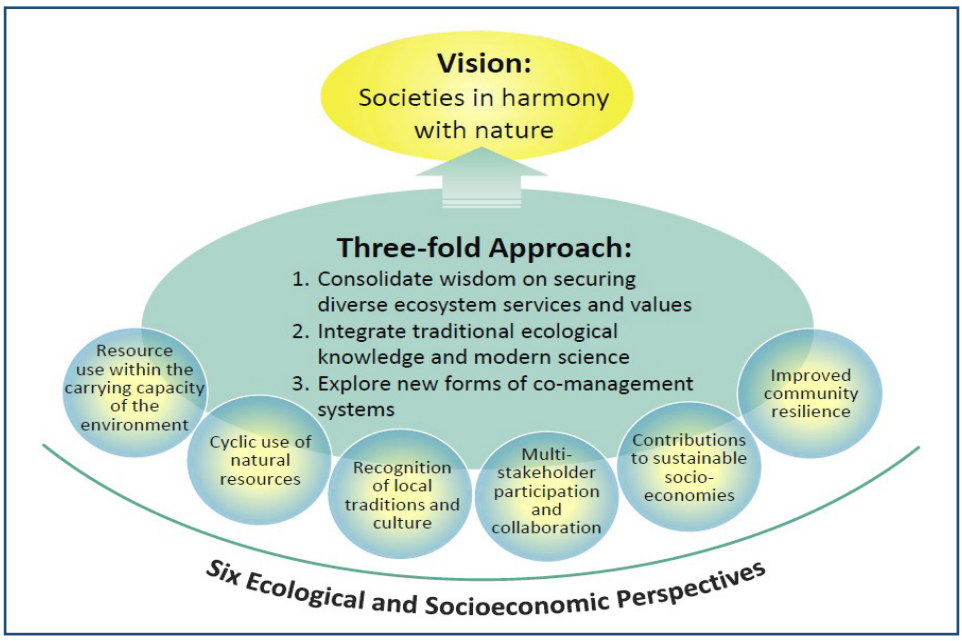


**Figure 1. Conceptual Framework of the Satoyama Initiative**

## Case study review for collective knowledge generation

One of IPSI's major mechanisms to facilitate knowledge sharing is the collection and publication of case studies on the IPSI website (http://satoyama-initiative.org/en/). IPSI case studies are mainly provided by IPSI member organisations to demonstrate and share their activities in SEPLS, as submission of a case study is a requirement for IPSI membership. As of February 2015, the IPSI Secretariat had received 80 case studies from 64 organizations. A case study focuses on presenting and discussing the background, activities and results of a project that has aimed at promoting the sustainable management of a SEPLS. Such projects generally target more than one ecosystem within a SEPLS and adopt a variety of approaches such as improving livelihoods while preserving biodiversity or enhancing ecosystem services through an integrated approach.

In order to understand the current status of information and knowledge accumulated within IPSI and to extract lessons learned, a comprehensive analytical review of the 80 IPSI case studies was undertaken by UNU-IAS and IGES (UNU-IAS and IGES, 2015). The analytical framework for the review included the "Three-fold approach" and "Six ecological and socioeconomic perspectives" of the Satoyama Initiative (Figure 1).

The review found that most activities in the IPSI case studies are implemented at the local level and tend to involve multiple ecosystems. The case studies are from all continents and cover a large range of regions, diverse ecosystems, issues, approaches and organisation types.

Because of the multi-faceted nature of the case studies, lessons could be extracted and synthesized under seven thematic areas (Figure 2). While all the seven themes have relevance to the SDGs, the 51 case studies that have a socio-economic component and directly address the theme "securing livelihoods and wellbeing" are particularly notable.

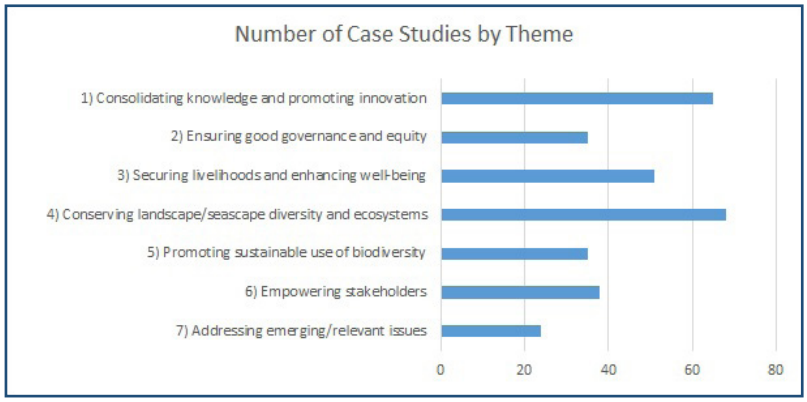


**Figure 2. Thematic areas of IPSI case studies, and number of case studies contributing to each theme**

The case studies include food security, health, additional or alternative income generation, livelihood security, and risk reduction, in line with the concept of SEPLS and integration of socio-economic and ecological issues. Some case studies address the improvement of health conditions in local communities through waste treatment and minimisation of pollution, including by fertilisers, contributing to SDG target 3.9 "By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination". Several case studies are concerned with issues of poverty alleviation and food security (related to SDGs 1 and 2), showing that, for example, productive lake ecosystems can become a prime source of quality food and employment for the poor. Other case studies describe providing financial rewards for biodiversity conservation to local people. Such activities contribute to SDG target 15.a "Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems".

Case studies about the creation of opportunities for local community members to generate additional or alternative income or setting up businesses are related to SDG target 2.3 "By 2030, double the agricultural productivity and incomes of small-scale food producers, [...] including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment", and SDG 8 on sustainable, inclusive and sustainable economic growth. For instance, the case studies include activities to generate alternative income, which can range from private plantations and promotion of non-timber forest products (NTFPs) to new development of high value-added farm and livestock products in rural areas.

A large majority of the case studies (68 out of 80) focus on the conservation of landscape or seascape diversity and ecosystems, thus making a specific contribution to SDGs 14 and 15 on marine and terrestrial ecosystems, respectively. The diversity of terrestrial and aquatic biota that these case studies aim to protect is vital to local livelihoods, and some communities even recognise it as central to the concept of well-being. Almost half of the case studies were found to directly promote the sustainable use of biodiversity, which is related to actions to "reduce the degradation of natural habitats, and halt the loss of biodiversity" as required by SDG target 15.5.

## Satoyama Initiative Thematic Review

In addition to this review, the IPSI Secretariat in collaboration with IGES initiated the publication of the Satoyama Initiative Thematic Review to further strengthen IPSI's knowledge-facilitation functions. The theme of the first volume, published in 2015, was "Enhancing knowledge for better management of SEPLS". The second volume, which will be published in 2016, will have the theme "Incorporating concepts and approaches of SEPLS into policy and decision-making".

The first volume presents eleven case studies from thirteen parts of the world that introduce and apply various approaches or tools for better management of SEPLS (UNU-IAS and IGES (eds.) 2015). These include quantitative tools such as field data measurement and collection, questionnaires, literature surveys, indicator assessment and participatory mapping; approaches to involve local communities in enhancing knowledge, such as community dialogues, "Farmers Field Schools", anthropological research and community-based monitoring; and particular approaches involving daily and continuous interaction and networking. These different tools and approaches serve 1) as value-articulating instruments, 2) in leading to better and more comprehensive understanding of SEPLS and knowledge creation, 3) in helping to keep decision-makers better informed with comprehensive, concrete data and information, 4) in increasing understanding of the current state of SEPLS, and the challenges and drivers of change they face, among different stakeholders, 5) in leading to better networking, cooperative action and strategic planning, and 6) in leading to better understanding of trade-offs and synergies. The different tools and approaches constitute important elements of an integrated approach to landscape management and the effective implementation of related SDGs.

# 5. From knowledge to action

The International Partnership for the Satoyama Initiative (IPSI) has served as an important platform for committed stakeholders across countries and sectors to contribute and share knowledge they have generated, while also learning from each other's experiences. With an increasing number of both members and collective knowledge-generation activities, IPSI has been

able to trigger action towards implementing more holistic, integrated, and sustainable management of SEPLS. One way has been to demonstrate that integrated approaches to SEPLS management are possible through the generation and sharing of knowledge useful for practitioners including reviews and synthesis studies like those described above.

Another important measure has been the provision of small-scale but effective financial support for activities that support innovative integrated approaches to landscape management, and the sharing of knowledge based on them.

## Satoyama Development Mechanism (SDM)

The Satoyama Development Mechanism (SDM) was established in 2013 by IGES, UNU-IAS and the Ministry of the Environment, Japan, as one of the collaborative activities of IPSI. It aims to promote the implementation of the IPSI Strategy and Plan of Action by providing seed funding to promising projects proposed from IPSI members. By March 2016, after three years of operation, 18 projects from 11 countries were selected for funding and nine projects were successfully completed. Most projects proposed integrated landscape approaches in order to find their own solutions to the challenges that local people were facing in sustaining or revitalising rural livelihoods and biodiversity and their linkages in SEPLS.

A questionnaire survey of the SDM grant recipients about their perception of the relevance of their project to the SDGs revealed that on

| Project type | Recipient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community/ field-based implementation | IKAP, Thailand | | | | | | | | | | | | ■ | ■ | | ■ | ■ | ■ |
| | KAFCOL, Nepal | ■ | | | | | | | ■ | | ■ | | | ■ | | ■ | | ■ |
| | AERF, India | ■ | | ■ | | | | | | | | | ■ | | | ■ | | |
| | A Rocha Ghana | ■ | | | | ■ | ■ | | | | | | | | | ■ | | |
| | National Dong-Hwa University, Taiwan | | | | | | | | | | | | | | | | | ■ |
| | SPERI, Viet Nam | | | | ■ | | ■ | | | | | | | ■ | | ■ | | |
| | Conservation Alliance International, Ghana | | | | | | | | | | | | | ■ | | ■ | | |
| Research | Nature and Livelihoods, Uganda | | ■ | ■ | | | | | | | | | | ■ | | ■ | | |
| | APAIC, Peru | | | | | | | | | | | | | ■ | | ■ | | |
| Partnership | ANDES, Peru | ■ | | | ■ | | | | | | | | | ■ | | ■ | | ■ |
| | Landcare Germany | | | | | | | | | | | | | | | ■ | | ■ |
| | EPIC, Uganda | | ■ | | | | | | | | | | | ■ | ■ | ■ | | ■ |
| Capacity building/ Outreach | Center Zapovedniks, Russia | | | | | | | | | | | | | | | ■ | ■ | ■ |

Table 2. Matrix of the relevance of SDM projects to SDGs

Project title: *Promoting Green Entrepreneurship for the Conservation of Satoyama Landscapes in the North Western Ghats, (AERF, India)*

| SDG | How to contribute? |
|---|---|
| End poverty in all its forms everywhere | Established NTFP-based enterprise with marginalized farming communities (1.4) |
| Ensure healthy lives and promote well-being for all at all ages | Supplied medicinal products using native medicinal trees, e.g. for diabetes (3.b) |
| Ensure sustainable consumption and production patterns | Developed and certified sustainable harvest and value chain of medicinal plant ingredients (12.2) |
| Protect, restore and sustainably use terrestrial ecosystems and biodiversity | Enhanced local awareness and actions for conserving village forests (15.9) |

Project title: *Restoration of Community Sacred Forest to Enhance Socio Ecological Landscape in the Effutu Traditional Area (A Rocha Ghana)*

| SDG | How to contribute? |
|---|---|
| End poverty in all its forms everywhere | Trained 15 women in soap making to provide them a default income source (1.4) |
| Achieve gender equality and empower all women and girls | Strengthened women's leadership in natural-resource based ventures (5.5) |
| Ensure availability and sustainable management of water and sanitation | Restored headwater forests of Pratu River that runs through the project area (6.6) |
| Protect, restore and sustainably use terrestrial ecosystems and biodiversity | Replanted 5.43 ha in degraded forests and restored community hunting ground (15.1, 2, 9) |

Project title: *Collaborative planning process of a Rice Paddy Cultural Landscape in an Indigenous Community (National Dong-Hwa University, Taiwan)*

| SDG | How to contribute? |
|---|---|
| Strengthen the means of implementation ... | Cihalaay Cultural Landscape Management Plan, local management committee and code of conduct established from a bottom-up participatory approach (17.15, 16) |

Tables 3, 4, 5. Relevance of three SDM projects to SDGs

average each project was expected to contribute to five goals (Table 2). The SDGs most frequently cited as relevant to projects were, in order, SDG 15 on terrestrial ecosystems, SDG 13 on climate change, SDG 17 on the means of implementation, and SDG 1 on poverty. Tables 3 to 5 provide three examples of how project recipients, amongst others, perceive that their projects will contribute to multiple SDGs. These case studies demonstrate the strength of a landscape approach in addressing a number of locally important SDGs.

## Indicators of Resilience in SEPLS

To strengthen resilience in SEPLS, Bioversity International, UNU-IAS, IGES and the United Nations Development Programme (UNDP) produced a set of twenty "Indicators of Resilience in SEPLS", plus a "Toolkit" publication for their use, based on work carried out in more than twenty countries globally (UNU-IAS et al 2014). The indicators are designed to capture different aspects of key systems – "landscape/seascape and ecosystem protection", "biodiversity (including agricultural diversity)", "knowledge and innovation", "governance and social equity", and "livelihoods and well-being". Experiences in the field show that the indicators can contribute to local communities' and other stakeholders' understanding of resilience of SEPLS, support development and implementation of resilience-strengthening strategies, enhance communication among stakeholders, and empower communities in decision-making process and adaptive management.

| Sustainable Development Goals | | Indicators of resilience in SEPLS relevant to SDGs |
|---|---|---|
| 1 | End poverty in all its forms everywhere | Indicators that help to understand poverty levels in local communities include those on: "income diversity" (18); and "biodiversity-based livelihoods" (19); and also those on rights to resources (12); and "socio-ecological mobility" (20). |
| 2 | End hunger, achieve food security and improved nutrition and promote sustainable agriculture | Indicators that help to understand food security in local communities include those on: "diversity of local food system" (5); "maintenance and use of local crop varieties and animal breeds" (6); "sustainable management of common resources" (7); and "innovation in agriculture and conservation practices" (8). |
| 4 | Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all | Indicators that help to understand quality of education of local communities include: "sustainable management of common resources" (7); "innovation in agriculture and conservation practices" (8); "traditional knowledge related to biodiversity" (9); "documentation of biodiversity-associated knowledge" (10); and "women's knowledge" (11). |
| 5 | Achieve gender equality and empower all women and girls | Indicators that help to understand the degree of gender equality in local communities include those on: "women's knowledge" (11); and "social equity (including gender equity)" (15). |
| 6 | Ensure availability and sustainable management of water and sanitation for all | Indicators that help to understand sustainable management of water and sanitation include those on: "ecosystem protection" (2); "ecological interactions between different components of the landscape/seascape" (3); "sustainable management of common resources" (7); and "Human health and environmental conditions" (17). |
| 13 | Take urgent action to combat climate change and its impacts | The most relevant indicator to understand resilience and adaptive capacity of local communities regarding climate-related hazards and natural disasters is on "recovery and regeneration of the landscape/seascape" (4). |
| 14 | Conserve and sustainably use oceans, seas and marine resources for sustainable development | Indicators that help to understand conservation and sustainable use of oceans, seas and marine resources used by local communities include those on: "ecosystem protection" (2); "recovery and regeneration of the landscape/seascape" (4); and "sustainable management of common resources" (7). |
| 15 | Protect, restore and promote sustainable use of terrestrial ecosystems, ... and halt biodiversity loss | Indicators that help to understand conservation and sustainable use of terrestrial ecosystems and their biodiversity include those on: "ecosystem protection" (2); "ecological interactions between different components of the landscape" (3); "recovery and regeneration of the landscape" (4); "sustainable management of common resources" (7); and "biodiversity-based livelihoods" (19). |
| **Others** | Further examples include:<br>The indicator on "human health and environmental conditions" (17) directly addresses health conditions in local communities and is thus related to SDG 3, "Ensure healthy lives and promote well-being for all at all ages".<br>The indicator on "socio-economic infrastructure" (16) is related to SDG 9, "Build resilient infrastructure...". Indicators on "rights in relation to land/water and other natural resource management" (12); "community-based landscape/seascape governance" (13); and "social capital in the form of cooperation across the landscape/seascape"(14) address SDG 16, "Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions...". | |

**Table 6. The indicators of resilience in SEPLS relevant to SDGs**

**Image 2. Assessment workshop using resilience indicators in SEPLS in Lanvena village, Taveuni island, Fiji**

The use of the indicators for an assessment of resilience in SEPLS, and any activities that may be adopted by project implementers or local communities themselves as a result of their use, can contribute to strengthening resilience through improved community livelihoods, adaptive management, governance and sustainable use of the natural ecosystem in line with the SDGs as shown in Table 6 below.

## GEF-Satoyama Project

In recognition of IPSI's experience with the SDM, in 2015 the Global Environment Facility approved a four-year project on "Mainstreaming Biodiversity Conservation and Sustainable Management in Priority Socio-ecological Production Landscapes and Seascapes", commonly called the "GEF-Satoyama Project". The project is implemented by three executing agencies – Conservation International Japan (lead), UNU-IAS and IGES – with a total budget of nearly USD 8 million including co-fi-

nancing. The project has chosen to focus field-level support for SEPLS in three target geographies: the Indo-Burma, Madagascar and the Indian Ocean Islands, and Tropical Andes Biodiversity Hotspots. The Project has three inter-related components:

(1) Subgrant funding: Selected projects are expected to have a demonstration effect to promote and replicate lessons learned and best practice through knowledge generation and management activities.

(2) Generation and synthesis of relevant knowledge about SEPLS globally: Knowledge products will increase and contribute to higher global awareness of SEPLS by making them available to various networks, initiatives, and organisations.

(3) Capacity-building workshops and training: Training is expected to help local communities to understand and collectively assess the resilience of their SEPLS, and to develop strategies and action plans to strengthen resilience.

The GEF-Satoyama Project thus represents a considerable upscaling of funding available for the implementation of integrated landscape approaches developed by subgrant projects.

The provision of funding through the SDM and GEF-Satoyama Project has been important to promote and increase the recognition of integrated landscape approaches. While the SDG has aimed at providing seed grants for small-scale projects that propose innovative activities, the GEF Satoyama Project intends to incorporate biodiversity conservation strategies in policy-making by providing medium-scale funding and requiring subgrantees to liaise with local and national government agencies.

For any activity that seeks to promote the transition from knowledge to action and contribute to implementing integrated approaches to landscape and seascape management, the process of collective generation of knowledge is key. Knowledge should be generated collectively and should take into consideration diverse knowledge systems including indigenous and local knowledge as well as scientific knowledge. Knowledge sharing can then lead to knowledge cycles, where existing knowledge provides input to integrated management, resulting in action that contributes to sustainable use and conservation of ecosystems and biodiversity and to building resilience and promoting sustainable development, which in turn generates new knowledge. Knowledge generation, dissemination and use for the implementation of integrated approaches play an important role in building momentum for integrated action to foster the achievement of international goals, including the SDGs and ecosystem-related climate goals.

## References:


Mbow, C., Neely, C., & Dobie, P., 2015. How can an integrated landscape approach contribute to the implementation of the Sustainable Development Goals (SDGs) and advance climate-smart objectives? In Minang, P. A., van Noordwijk, M., Freeman, O. E., Mbow, C., de Leeuw, J., & Catacutan, D. (Eds.) Climate-Smart Landscapes: Multifunctionality in Practice, 103-117. Nairobi, Kenya: World Agroforestry Centre (ICRAF).

Sayer, J. A, Sunderland, T. C. H., Ghazoul, J., Pfund, J. L., Sheil, D., Meijard, E., … Buck, L. E., 2013. Ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses. Proceedings of the National Academy of Sciences, 110(21), 8349–8356.

Scherr, S. J., Shames, S., & Friedman, R., 2012. From Climate-Smart Agriculture to Climate-Smart Landscapes. Agriculture & Food Security, 1:12, doi: 10.1186/2048-7010-1-12

UNU-IAS, Bioversity International, IGES & UNDP (United Nations Development Programme), 2014. Toolkit for the Indicators of Resilience in Socio-ecological Production Landscapes and Seascapes (SEPLS).

UNU-IAS & IGES, 2015. Generating collective knowledge on the conservation, management and sustainable use of socio-ecological production landscapes and seascapes - A summary of a review of 80 case studies under the International Partnership for the Satoyama Initiative (IPSI) - United Nations University Institute for the Advanced Study of Sustainability, Tokyo.

UNU-IAS and IGES (eds.), 2015. Enhancing knowledge for better management of socio-ecological production landscapes and seascapes (SEPLS) (Satoyama Initiative Thematic Review vol.1), United Nations University Institute for the Advanced Study of Sustainability, Tokyo.



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