



IPSI Case Study Review:

a review of 80 case studies under the
International Partnership for the Satoyama
Initiative (IPSI)

UNU-IAS and IGES
2015



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This publication is a full report of the review of 80 case studies submitted under the International Partnership for the Satoyama Initiative (IPSI) between 2009 to February 2015. The review was undertaken by experts at UNU-IAS as Secretariat of IPSI and the Institute for Global Environmental Strategies (IGES). A summary version of this report can be downloaded from the IPSI website (<http://satoyama-initiative.org/>).

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1. Introduction

The International Partnership for the Satoyama Initiative (IPSI) aims to provide a platform for creating synergies and sharing knowledge by bringing together expertise from different sectors and from all over the world. One of the major mechanisms to facilitate knowledge sharing is the collection and publishing of case studies relevant to “socio-ecological production landscapes and seascapes” (SEPLS) on the IPSI website. IPSI case studies are mainly provided by IPSI member organizations; the IPSI Operational Guidelines include the requirement for a new IPSI member to contribute at least one case study to demonstrate and share its activities. By February 2015, the IPSI Secretariat had received 80 cases studies from 64 organizations (among these 64 organizations, 11 were non-IPSI members). However, there had been limited systemic analytical review of IPSI’s case studies, and none covering all of the submitted case studies.

This report describes a review of all the cases submitted so far to the IPSI Secretariat in order to understand the current status of information and knowledge accumulated within IPSI and to extract lessons. The specific objectives of the case study review are to:

- (1) Obtain an overview of all of the IPSI case studies through quantitative and qualitative analysis;
- (2) Classify the case studies based on features of their approaches, activities and sites described;
- (3) Identify areas that need to be strengthened, e.g. activity and research areas, geographical balance etc.;
- (4) Extract and synthesize lessons learned through the case studies.

It is expected that the review will offer valuable information and lessons found in the case studies on the sustainable use of SEPLS both within and beyond IPSI, providing input for international processes such as those under the Convention on Biological Diversity. It is also expected that the review will contribute to improving the framework for information-sharing and the collection of case studies from IPSI members.

2. Methodology

This report is produced based on a review of all 80 case studies submitted to the IPSI Secretariat (see Annex 1).

2.1 Procedure for the review

The review process followed a step-wise approach as follows (see also Figure 1);

i. Development of a classification framework and theme areas to organize the information in the case studies

The first step was an initial review of the existing case studies and consideration of a) the four objectives in the IPSI Strategy as well as b) the three-fold approach and five perspectives of the Satoyama Initiative that are mentioned in the guidelines for submission of case studies (Figure 1). This allowed for the identification of generic classification types and categories under which the diverse information entailed in each of the case studies can be classified. We then developed a tentative framework for classification of the IPSI case studies, consisting of a classification table listing the basic types, categories and thematic areas (Table 1 below). The first draft of the framework was presented at a Case Study Experts Workshop (Yokohama, Japan, July 2014), initial work having been presented at the Seventh Meeting of the IPSI Steering Committee (Florence, Italy, May 2014). The classification table was modified based on feedback received from participants during these meetings. Details of the classification framework and theme areas are described in Sections 2.2 and 2.3 below.

ii. Classification of the case studies' features and extraction of lessons learned

In the second step, a detailed review of each case study was conducted, and the various characteristics of the case studies were classified under the typology and categories of the classification framework in a quantitative manner as a spreadsheet. To identify and classify the most relevant qualitative information in the case studies, the focus was placed on lessons learned through the case studies. This information was extracted and compiled in word processing documents to allow for qualitative analysis in the next step.

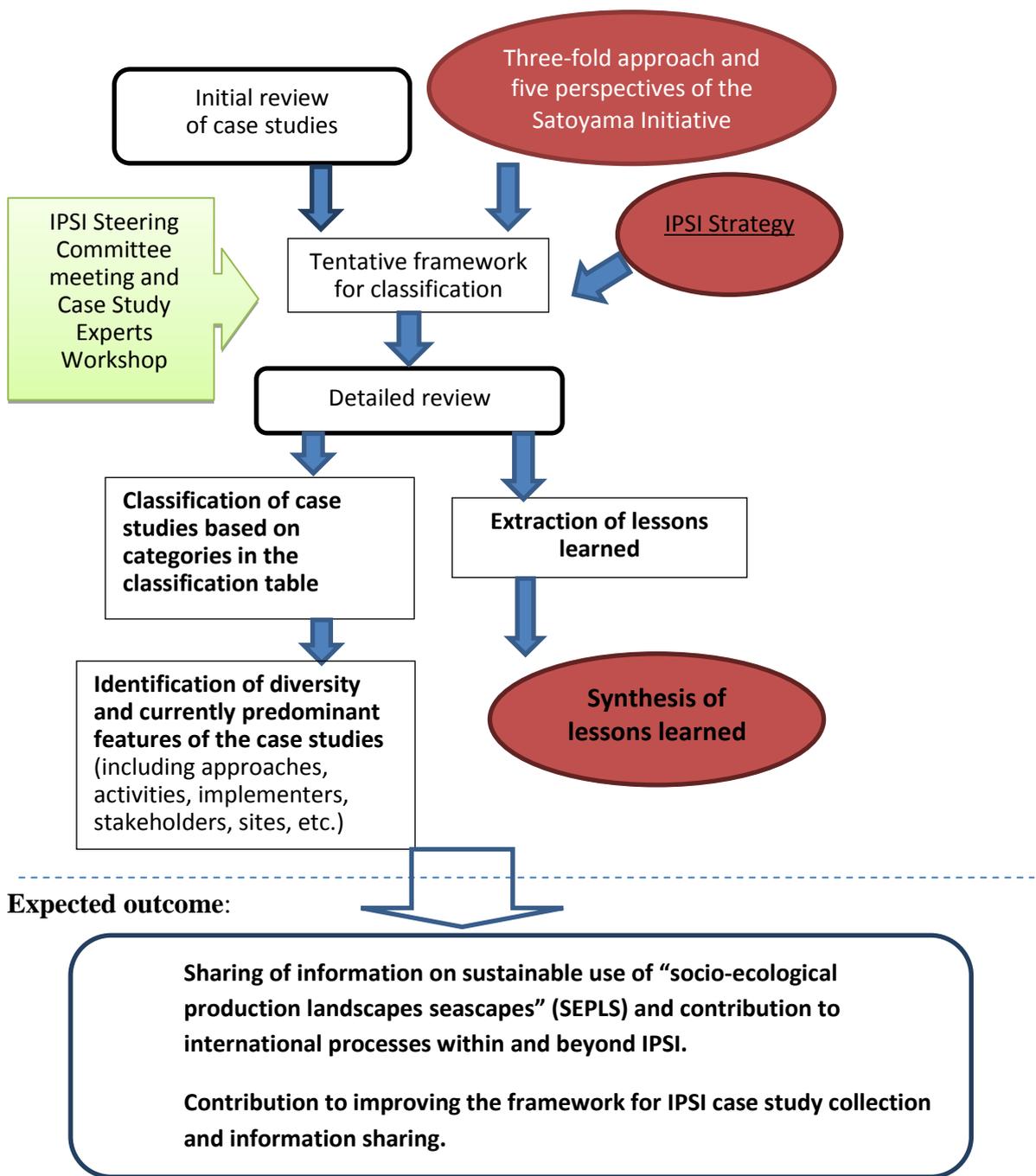


Figure 1: Procedure for the review

iii. Identification of current focus areas and trends in case studies and synthesis of lessons learned

The third step involved quantitative analysis to identify current predominant features of the case studies, including implementing and participating organizations, approaches, activities and sites, under each of the generic categories in the classification framework. Qualitative analysis was also conducted by first grouping the lessons learned from the various case studies under related, more generic themes, selecting from the seven themes in the classification framework below and then identifying more specific subthemes.

2.2 Classification framework

As mentioned above, the purpose of the classification framework is to classify the diverse information entailed in each of the case studies. The following classification typology has been developed and used for the review (Table 1):

- Geographic scale and regional/sub-regional focus
- Themes covered by the case studies and contribution to IPSI's strategic objectives
- Methodological approach including data collection and analysis
- Main ecosystems and socio-economic activities
- Responsible organizations and stakeholders
- Outputs

Each classification type includes a number of categories (and in some cases subcategories) that were elaborated to capture the diversity of the different case studies. The classification framework is illustrated in Table 1, which also includes explanations of the different types.

Table 1: Classification framework

#	Classification type	Main category	Remarks
1	Scale	<ol style="list-style-type: none"> 1) Global 2) Regional 3) National 4) Local 	“Scale” refers to the scale of the target geography of each case study.
2	Regional focus	<ol style="list-style-type: none"> 1) Africa (Eastern Africa, Middle Africa, Northern Africa, Southern Africa, Western Africa) 2) Americas (Latin America and the Caribbean, Northern America) 3) Asia (Central Asia, Eastern Asia, Southern Asia, South-Eastern Asia, Western Asia) 4) Europe (Eastern Europe, Northern Europe, Southern Europe, Western Europe) 5) Oceania (Australia and New Zealand, Melanesia, Micronesia, Polynesia) 	”Regional focus” refers to the region and sub-region where the activities described in the case study took place. The location of the author’s organization may be different.
3	Theme	<ol style="list-style-type: none"> 1) Consolidating knowledge and promoting innovation (e.g. local traditions, culture, learning, integration of modern science and traditional knowledge) 2) Ensuring good governance and equity (e.g. interest representation, organizational responsibility, land tenure, gender, decision-making, implementation) 3) Securing livelihoods and enhancing well-being (e.g. poverty reduction, community empowerment, food security, sustainable livelihood) 4) Conserving landscape/seascape diversity and ecosystems (e.g. reforestation, pesticide control) 5) Promoting sustainable use of biodiversity (including agricultural biodiversity) 6) Empowering stakeholders (building human, institutional and financial capacities) 7) Addressing emerging/relevant issues such as climate change, invasive species, etc. 	The case studies were classified under the various “themes” that each of them addressed. A case study usually addressed more than one theme in its objectives, activities, and/or outcomes. Even if only one objective, activity or outcome was related to one of the seven themes, the case study was classified under that theme and not only under the main theme of the case study. The reason for this was to truly reflect the diversity of the case studies and not miss any relevant themes. For instance, “climate change mitigation/adaptation” is an emerging issue addressed in several case studies where it is not the main theme.

4	Approach	<ol style="list-style-type: none"> 1) Knowledge facilitation 2) Policy development and implementation 3) Research <ol style="list-style-type: none"> 3-1) Analytical 3-2) Action-oriented 3-3) Other 4) Capacity building 5) On-the-ground activities 6) Awareness-raising 7) Financial support 8) Other 	<p>“Approach” refers to the methodological approach of the case study activities. “Knowledge facilitation” refers to activities that focus on promoting a) traditional and/or local knowledge of SEPLS management and use as well as b) new knowledge generated on-site. “On-the-ground activities” refers to activities at the grass-roots, i.e. local, level. A few case studies provided “financial support” for specific activities by the target group, usually local communities.</p>
4-1	Data collection and analysis method (in case of research)	<ol style="list-style-type: none"> a) Qualitative (literature review, interviews, participatory methods, participatory mapping) b) Quantitative (literature review, questionnaire surveys, statistics, GIS) c) Not specified 	<p>This refers to the method(s) used in the case studies to collect, compile and analyze information and data.</p>
5	Main ecosystem	<ol style="list-style-type: none"> 1) Mountain 2) Agricultural 3) Forest 4) Grassland 5) Dryland 6) Inland water 7) Coastal and marine 8) Island 	<p>The case studies were classified under the (self-reported) main ecosystems on which they focused. This does not necessarily mean that the activities were conducted in all of the identified ecosystems.</p>
6	Socio-economic activity	<ol style="list-style-type: none"> 1) Agriculture <ol style="list-style-type: none"> a) Croplands b) Animal husbandry c) Other 2) Fishery 3) Forestry 4) Tourism 5) Wildlife conservation 6) Environmental education 7) Culture/ arts and crafts 8) Collecting natural products (medicinal products, NTFPs, other products) 9) Hunting 10) Other 	<p>The case studies were classified by the socio-economic activities of targeted groups. These activities were not necessarily introduced by a project related to the case study but could include activities of communities in the case study area, which the study described, analyzed, and/or sought to enhance or curb.</p>

7	Implementing organization	<ol style="list-style-type: none"> 1) National government 2) Local government 3) International NGO 4) Local NGO 5) International org. 6) University/research institute 7) Indigenous people 8) Local communities 9) Private sector 10) Foreign government 11) Foreign NGO 12) Other 	<p>The implementing organization is not necessarily the authors' organization, but is the organization that implemented the activities described in the case study. "Foreign NGO" refers to an NGO whose headquarters are in a country other than the target country of the case study, but does not have a fully international (i.e. global or regional) scope.</p> <p>"International organization" stands for an intergovernmental organization.</p>
7-1	Partner organization	<ol style="list-style-type: none"> 1) National government 2) Local government 3) International NGO 4) Local NGO 5) International org. 6) University/research institute 7) Indigenous people 8) Local communities 9) Private sector 10) Foreign government 11) Foreign NGO 12) Other 	<p>A partner organization is an organization that contributed to the activities under the case study but without taking the main responsibility or a major role in implementation.</p>
7-2	Funder	<ol style="list-style-type: none"> 1) National government 2) Local government 3) International NGO 4) Local NGO 5) International org. 6) University/research institute 7) Indigenous people 8) Local communities 9) Private sector 10) Foreign government 11) Foreign NGO 12) Other 	<p>"Funder" refers to an organization that provided funding for conducting the case study or project activities, without being involved in implementing the case study or project.</p>

8	Stakeholders	<ol style="list-style-type: none"> 1) National government 2) Local government 3) International NGO 4) Local NGO 5) International org. 6) University/research institute 7) Indigenous people 8) Local communities 9) Private sector 10) Foreign government 11) Foreign NGO 12) Other 	<p>“Stakeholders” stands for the group(s) or organization(s) that were targeted by the case study or project activities. They benefit or are affected by the case study activities without taking a leading role in their implementation.</p>
9	Output	<ol style="list-style-type: none"> 1) Peer reviewed 2) Not peer reviewed 3) Audio-visual 4) Not applicable 	<p>“Output” refers to any form of publication of the case study other than the IPSI case study itself. Information on output was collected when it was explicitly mentioned in the case study.</p>
11	Contribution to the implementation of IPSI’s strategic objectives	<ol style="list-style-type: none"> 1) Increasing knowledge and understanding of SEPLS 2) Addressing the direct and underlying causes responsible for the decline or loss of biological and cultural diversity as well as ecological and socio-economic services from SEPLS 3) Enhancing benefits from SEPLS 4) Enhancing human, institutional, and sustainable financial capacities 5) Unknown 	<p>“Contribution to the implementation of IPSI’s strategic objectives” was judged in terms of whether the activities under the case study or the project described in the case study clearly contribute to at least one of the four IPSI strategic objectives.</p>
12	Contribution to the Aichi Biodiversity Targets	<p>[considered for some of the case studies]</p>	<p>IPSI case studies do not explicitly claim a contribution to one or more of the Aichi Biodiversity Target(s). However, this review considers possible contributions to the Aichi Targets for approximately half of the case studies.</p>

2.3 Themes and subthemes

The case studies have been classified under at least one of seven relatively broad themes or thematic areas that their objectives and activities have in common. The review process revealed a closer thematic proximity of some of the case studies classified under each of the themes than among others under the same theme. This allowed for a sub-classification of thematically-close case studies under more specific subthemes.

The typology of the seven “themes” for the thematic classification of the case studies (row 3 in Table 1) was developed based on IPSI’s strategic objectives, a review of the current guidelines for submission of case studies, and, to a more limited extent, a review of academic literature.

2.3.1 Development and refinement of the themes

The strategic objectives in the IPSI Strategy were an important contributing factor in developing the themes.¹ The first objective, “increasing knowledge and understanding of SEPLS”, largely coincides with the first theme, “consolidating knowledge and promoting innovation”. The second objective, “addressing the direct and underlying causes responsible for the decline or loss of biological and cultural diversity as well as ecological and socio-economic services from SEPLS”, contributed to the fourth theme, “promoting the sustainable use of biodiversity”. The third objective, “enhancing benefits from SEPLS”, corresponds with the third theme, “securing livelihoods and enhancing well-being”. The fourth objective, “enhancing the human, institutional and sustainable financial capacities for the implementation of the Satoyama Initiative”, provided the sixth theme, “empowering stakeholders”.

IPSI’s “three-fold approach” and “five ecological and socio-economic perspectives” also contributed to the development or refinement of the themes.² They offer a series of aspects that were useful for defining the scope of the themes. The approach and perspectives are mentioned in the current case study guidelines.

The three-fold approach attempts to contribute to maintaining and rebuilding landscapes and seascapes in which land and natural resources are used and managed in a more sustainable manner by:

1. Consolidating wisdom on securing diverse ecosystem services and values,

¹ See IPSI Strategy, available from <http://satoyama-initiative.org/wp/wp-content/uploads/2014/01/IPSI-Strategy.pdf>

² The Three-fold Approach and “five perspectives” are available from <http://satoyama-initiative.org/en/about/#3.1>

2. Integrating traditional ecological knowledge and modern science to promote innovations, and
3. Exploring new forms of co-management systems or evolving frameworks of “commons” while respecting traditional communal land tenure.

The first theme draws on this approach by incorporating the concepts of traditional wisdom and the integration of traditional ecological knowledge and modern science as “consolidating knowledge and promoting innovation.” The third part of the approach, “co-management systems or evolving frameworks of ‘commons’ while respecting traditional communal land tenure”, is an aspect of the second theme, “ensuring good governance and equity”.

The following “five ecological and socio-economic perspectives” of IPSI have also contributed to defining the scope of the first three themes:

- (1) Resource use within the carrying capacity and resilience of the environment
- (2) Cyclic use of natural resources
- (3) Recognition of the value and importance of local traditions and cultures
- (4) Multi-stakeholder participation and collaboration in sustainable and multi-functional management of natural resources and ecosystem services
- (5) Contributions to sustainable socio-economies including poverty reduction, food security, sustainable livelihood and local community empowerment

The first two of these perspectives add relevant aspects to the fifth theme, “promoting sustainable use of biodiversity”. The third perspective stresses the importance of local traditions and cultures in the context of the first theme on consolidating knowledge. The fourth perspective highlights the importance of multi-stakeholder participation and collaboration, which is relevant to the second theme on good governance, and the fifth perspective is an essential part of the third theme, “securing livelihoods and enhancing well-being”.

2.3.2 Scope of the themes and subthemes identified under each theme

The scope of each of the seven themes used for classification of the case studies is described below, together with the subthemes that were identified under each theme as a result of the detailed review of case studies. These subthemes were particularly relevant for the synthesis of lessons learned from the case studies, as they proved to be specific enough to allow for qualitative and comparative analysis of the lessons learned.

- 1) **Consolidating knowledge and promoting innovation:** This theme covers case studies describing projects that address issues of conservation of local traditions, traditional knowledge and practices, culture, learning and integration of modern

science and traditional knowledge. Three more specific subthemes were identified, which were particularly relevant for the analysis of the lessons learned from the case studies:

- *Appreciation/sharing of traditional knowledge, values and practices*
- *Integration of traditional knowledge and modern scientific knowledge*
- *Learning, advocacy and replicability of experiences*

- 2) **Ensuring good governance and equity:** This theme covers the two principles or dimensions of governance that can be distinguished: 1) Governance as a structure in the form of ‘meaningful participation’, which includes two aspects or criteria: interest representation and organizational responsibility; 2) governance as a process through ‘productive deliberation’, which also comprises two criteria: decision making and implementation. The subthemes on governance include these four criteria of good governance, but also address specific issues of indigenous governance, community-based management of natural resources, and the importance of partnership building and integrated management:

- *Interest representation and organizational responsibility: need for good governance and institution building*
- *Indigenous governance:* This subtheme was chosen for lessons that specifically addressed indigenous peoples’ governance aspects.
- *Community-based management of natural resources*
- *Decision making and implementation*
- *Partnership building*
- *Integrated management*

Land tenure and gender issues were also considered as separate subthemes following a recommendation from the Case Study Workshop held in July 2014, but there were only a few specific lessons found with regards to these two aspects.

- 3) **Securing livelihoods and enhancing well-being:** This theme ranges from issues of food security and poverty alleviation to the importance of enhancing local well-being and sustainable livelihoods more generally, but also to the creation of opportunities for generating additional or alternative income or setting up small businesses based on various opportunities provided by SEPLS. Under this theme, the lessons identified by the case studies are categorized under three subthemes:
- *Food security and poverty alleviation*
 - *Local well-being and sustainable livelihoods*
 - *Income or business opportunities*
- 4) **Conserving landscape/seascape diversity and ecosystems:** This theme includes a range of issues such as landscape conservation, biodiversity conservation, nature restoration, reforestation, identification of threats to ecosystems, linking academic studies with landscape conservation, the importance of scientific evaluations, the need for agro-ecological landscape approaches, the creation of new types of

protected areas, pesticide control, and the underlying causes of biodiversity loss. A distinction has therefore been made between activities for the conservation of biodiversity, classified under this theme, and those promoting the sustainable use of biodiversity, allocated to the following theme. The lessons of case studies relevant to this theme are classified under the following subthemes:

- *Biodiversity conservation*
- *Landscape conservation and revitalization*
- *Nature restoration*

5) **Promoting sustainable use of biodiversity** (including agricultural biodiversity):

Issues covered under this theme include: Sustainable resource use, control of hunting, addressing overuse of wild flora, domestication of medicinal plants, minimizing the impacts of aquaculture, the cyclic use of natural resources, and the need for alternative livelihoods. Subthemes for the analysis of lessons learned are:

- *Sustainable resource use*
- *Addressing overuse of wild flora and resources*
- *Cyclic use of natural resources*

6) **Empowering stakeholders:** This theme is understood specifically in terms of capacity building (building human, institutional and financial capacities) and the mobilization of communities under the project. The four subthemes under this theme are:

- *Community mobilization:* Compared to community-based resource management, which is included under the theme of governance as it is based on a formal management system, “mobilization” here refers to the initial stage of empowerment of communities by engaging them in project activities under the case study.
- *Financial capacity building*
- *Institutional capacity building*
- *Human capacity building*

7) **Addressing emerging/relevant issues:** Emerging issues identified include climate change mitigation and adaptation, pesticide control and organic waste management.

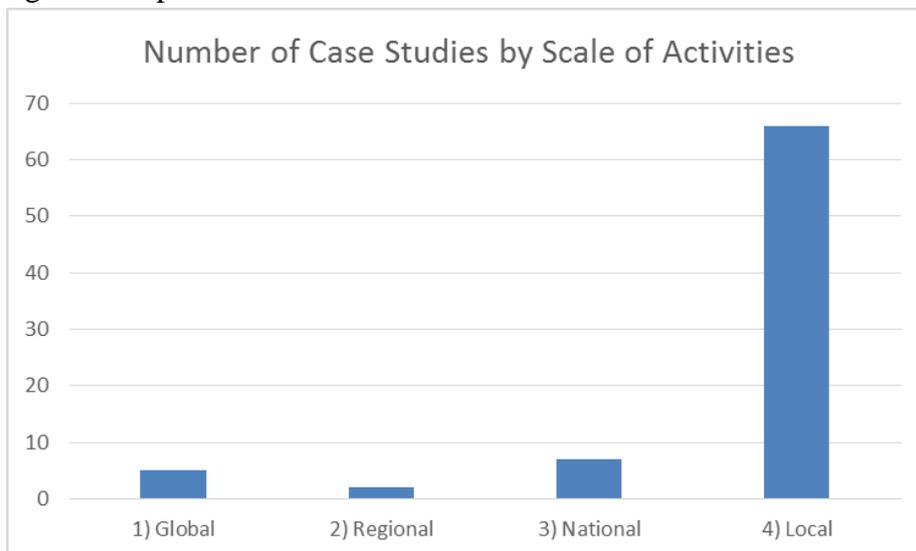
3. Findings

3.1 General characteristics of IPSI case studies

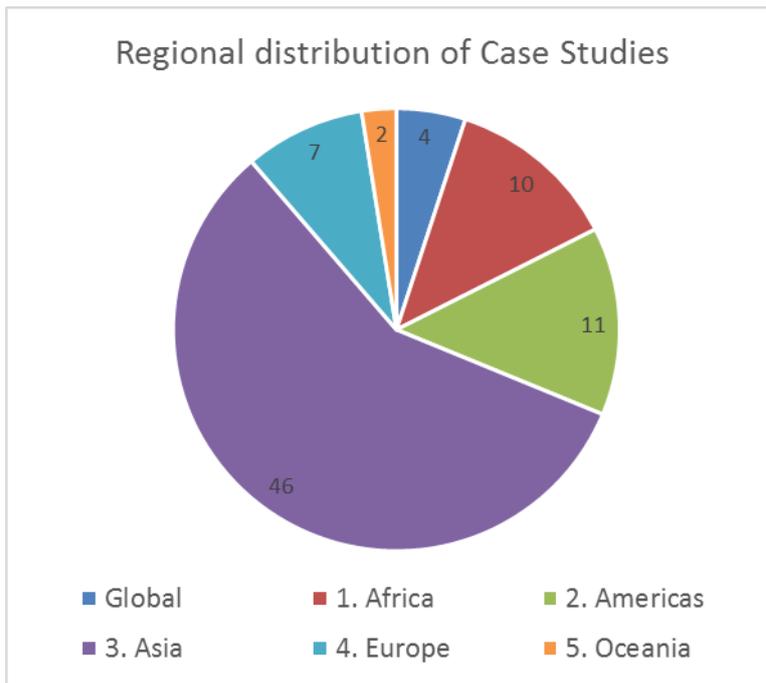
Based on the data obtained through the review of the 80 IPSI case studies using the classification framework described above, general characteristics have been identified as shown in this section.

3.1.1 Scale and regional focus

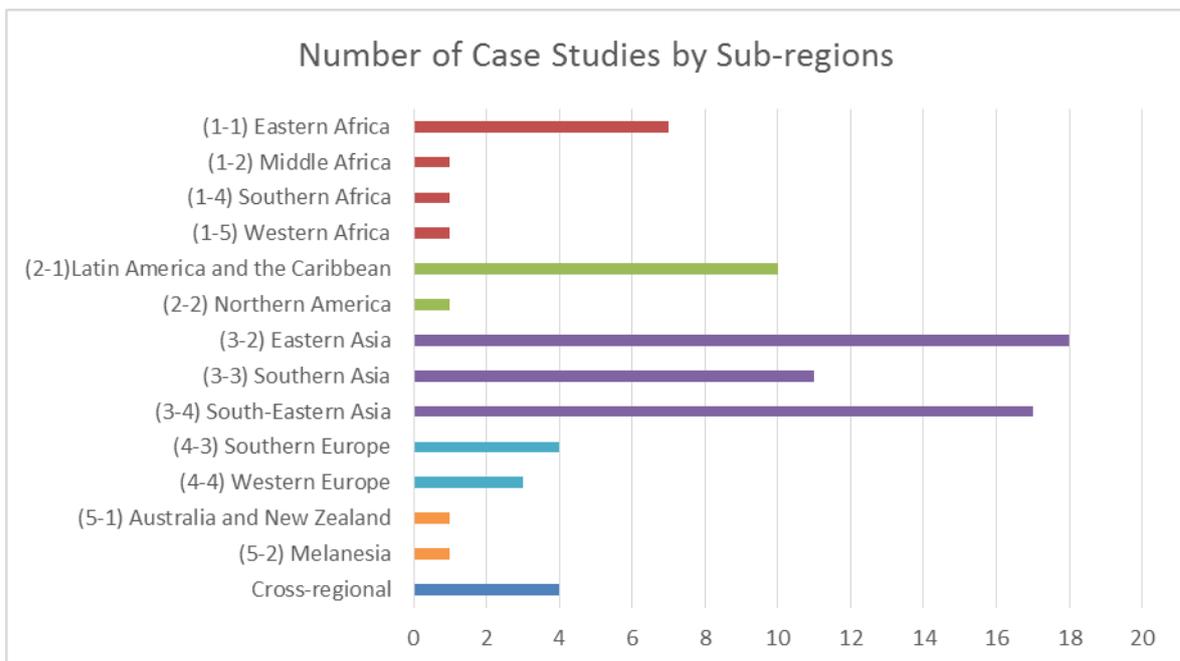
With regards to the scale of activities undertaken by IPSI members, the main focus is at the local level, with over 80% (66 cases out of 80) of them working at this level. The remainder implemented activities with a broader focus, with 4 of the case studies having a global scope.



The geographic distribution of the case studies was also examined in this review, with the majority being within the Asian region. This is followed by case studies from the Americas and Africa, with a lower representation of projects in the European and Oceania regions. This distribution is in line with the current membership of IPSI (Annex 2).

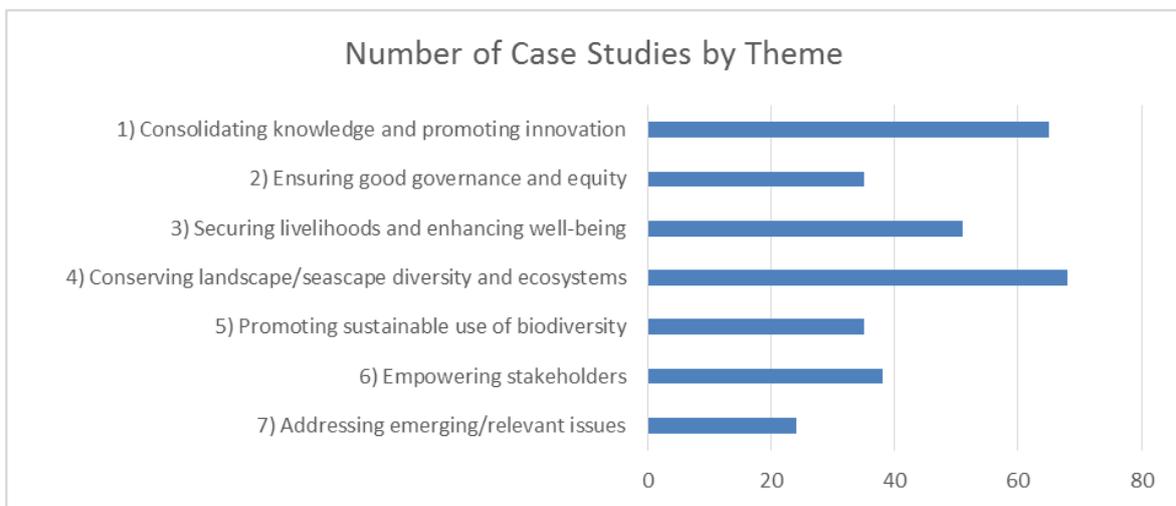


A further breakdown of the sub-regional distribution of these case studies shows that within Asia, there is a predominance of activities implemented in the Eastern and South-Eastern Asian sub-regions. A large gap is also seen within the Americas, with a dominance of Latin American and Caribbean case studies. Case studies from Africa also show a predominance of activities undertaken in the Eastern African sub-region.

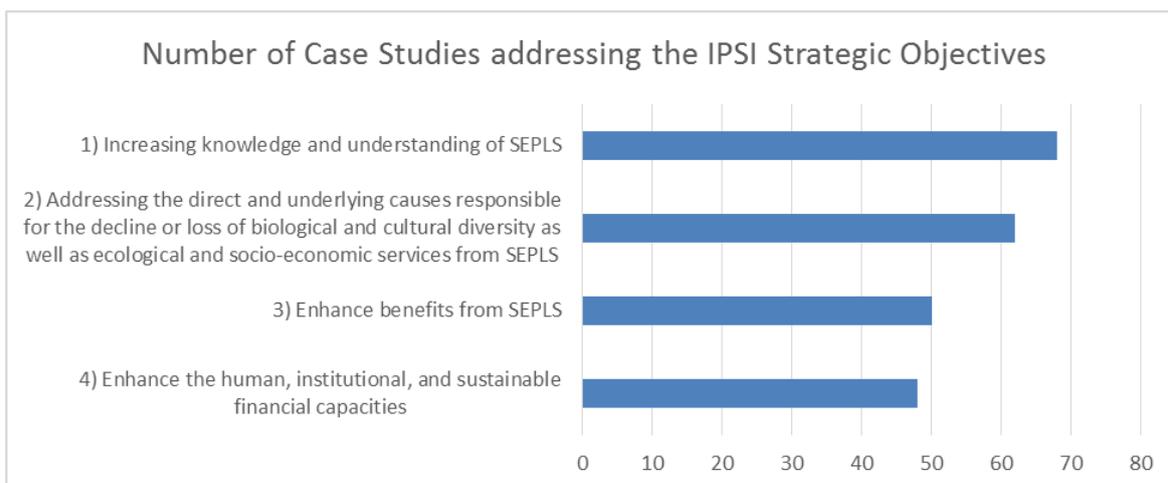


3.1.2 Theme

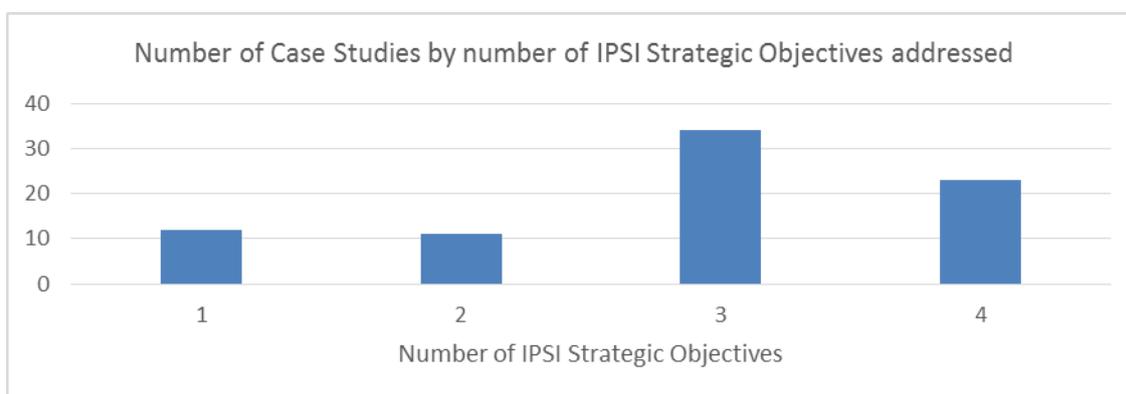
The thematic review shows that the most case studies address 4) landscape/seascape conservation as well as 1) knowledge consolidation, with over 80% of the case studies touching upon these topics. However, the thematic coverage of the case studies is rather broad, with many also addressing the issue of 3) securing livelihoods and enhancing well-being for the stakeholders (over 60%), followed by 6) stakeholder empowerment, 5) sustainable use of biodiversity and 2) ensuring good governance and equity. Even the lowest-ranking theme, 7) addressing emerging issues, is touched upon by over 30% of the case studies.



From the perspective of IPSI's Strategic Objectives, the case studies show a relatively even distribution of focus, with all four objectives being addressed by at least 60% of the cases. The highest rate is seen for Strategic Objective 1, on increasing knowledge and understanding of SEPLS. This is in line with the thematic distribution of the case studies seen above, with a high proportion of cases focusing on the theme of knowledge consolidation. Strategic Objective 2, on addressing the direct and underlying causes of decline in biological and cultural diversity in SEPLS, is also a common topic in the case studies.

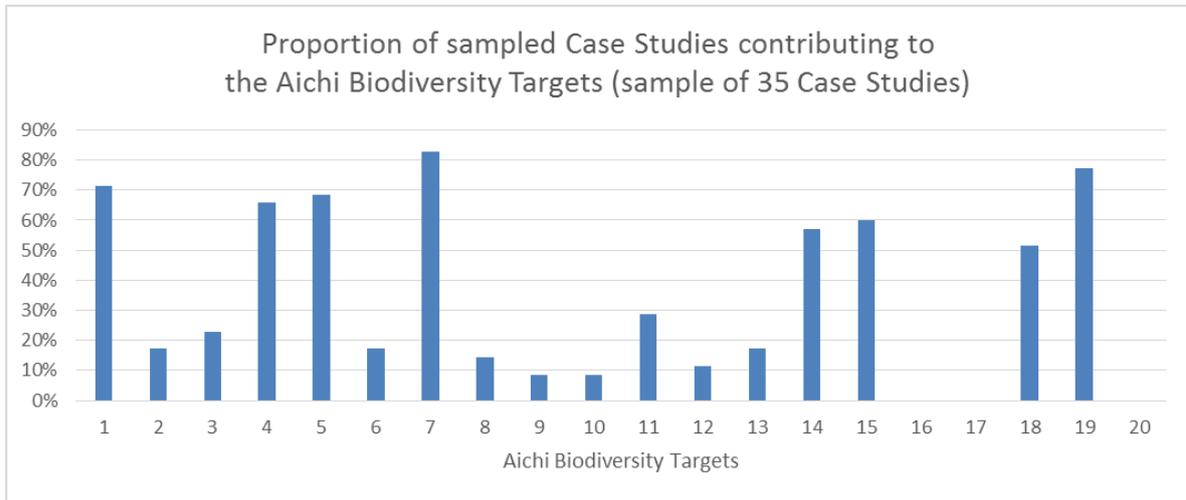


By looking at the distribution of the case studies according to the number of Strategic Objectives addressed per case study, the review shows that many activities carried out by IPSI members tend to address more than one objective. This represents the often multi-faceted nature of the case studies, as well as the interlinkages between the Strategic Objectives. In order to achieve one objective, it is often necessary to fulfill another, e.g., addressing the underlying causes of the loss of biological and cultural diversity would require increased knowledge and understanding of SEPLS, which in turn may require the enhancement of human capacity, or the provision of incentives through enhanced benefits from SEPLS. By addressing these various dimensions in a comprehensive manner, the Case Studies can be expected to provide multiple benefits to the stakeholders involved. This wide coverage of IPSI’s Strategic Objectives shows a high potential for the partnership to achieve these objectives as long as efforts such as those presented in the case studies are maintained and their effectiveness continues to be ensured on the ground.



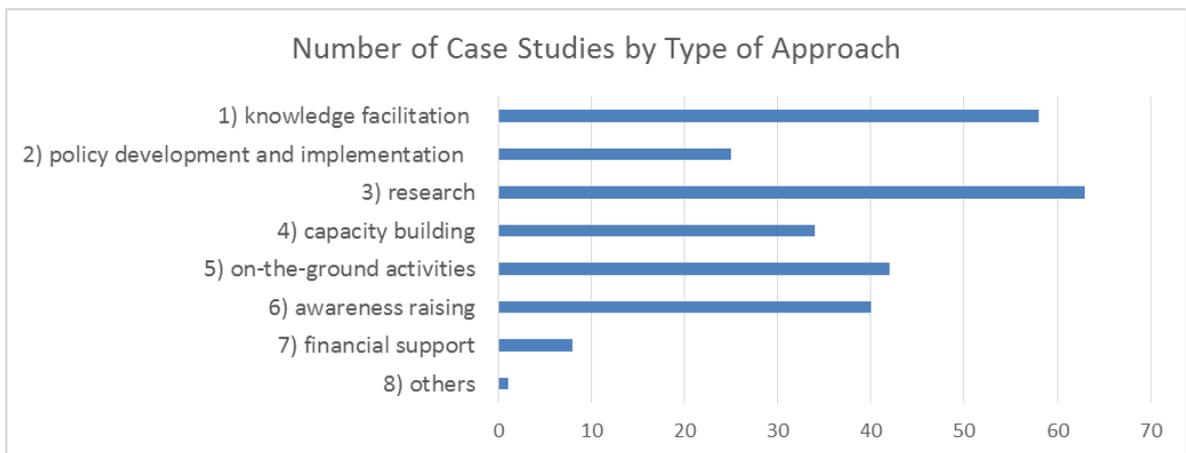
Although not a comprehensive and detailed assessment, a quick review of the coverage of the Aichi Biodiversity Targets was also conducted for a limited sample (35) of the case studies. The results show that this sample had the highest relevance for Aichi

Targets 1, 4, 5, 7, 14, 15, 18, and 19, which illustrates their contribution to mainstreaming biodiversity considerations, reducing pressures on biodiversity through sustainable use and increased benefits, and to enhancing knowledge management including indigenous local knowledge (see Annex 3 for a list of the Aichi Biodiversity Targets).

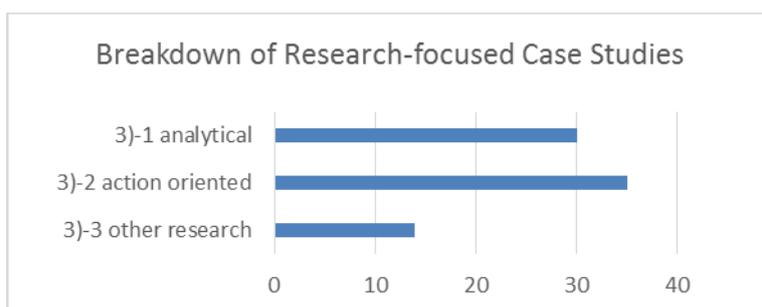


3.1.3 Methodological approach including data collection and analysis

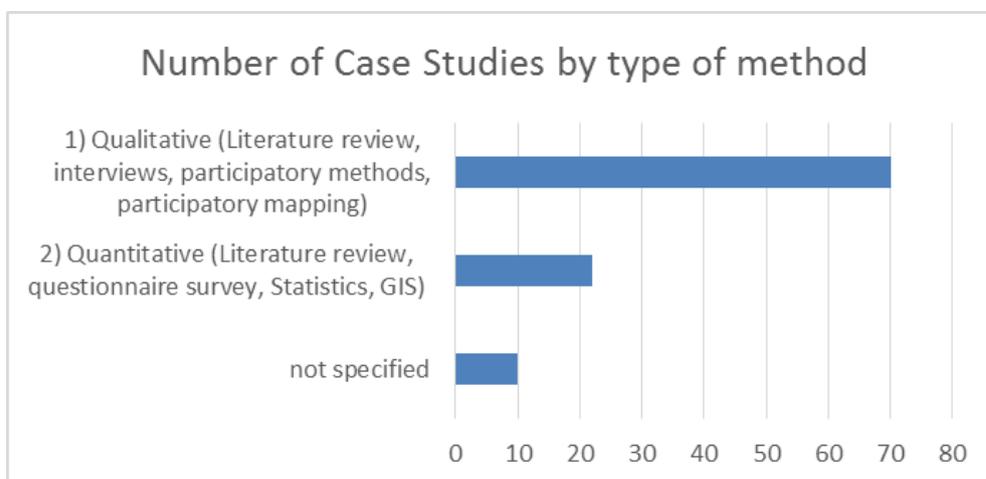
Approaches taken in the case studies were reviewed and classified, and the results as seen below show a bias towards knowledge facilitation and research. However, since this is not a single option classification, the case studies often apply multiple approaches, for example combining research and on-the-ground activities with long-term policy development. There is nonetheless a clear dominance of knowledge and awareness-based approaches – 1), 3), and 6) – over approaches such as the provision of financial support or policy development.



Among research-focused activities, the highest number of case studies focus on action-oriented research, which often aims to work together with local communities and other stakeholders to make positive changes on the ground, and are thus often combined with on-the-ground activities.



The review shows that qualitative methods are applied in a much higher number of case studies than quantitative methods, with those applying statistical analyses being rare. Also, all 22 case studies that employed quantitative methods were combined with qualitative approaches.

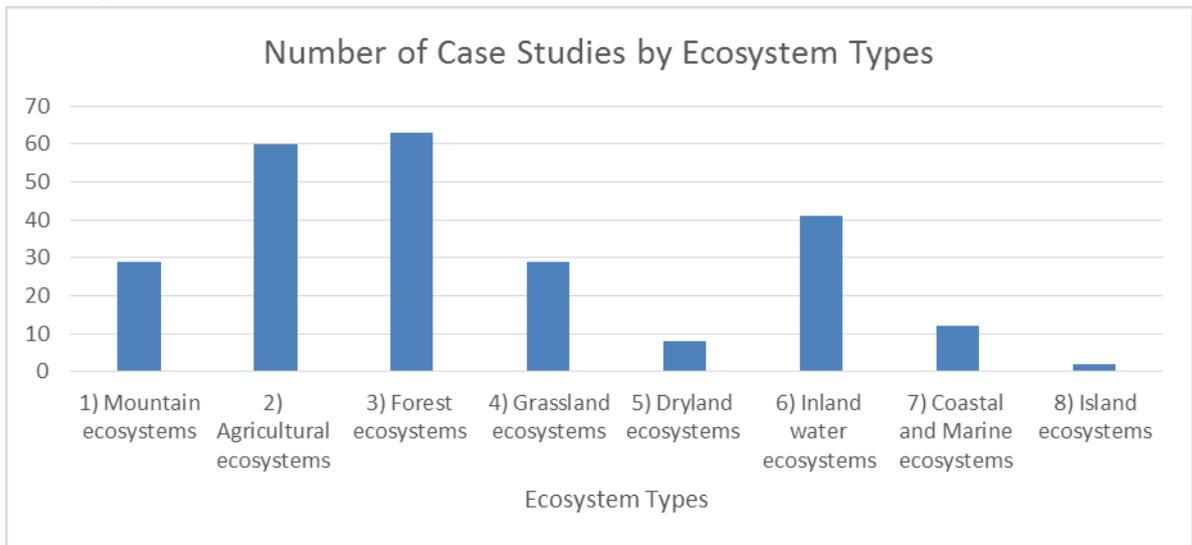


3.1.4 Ecosystem and socio-economic activity

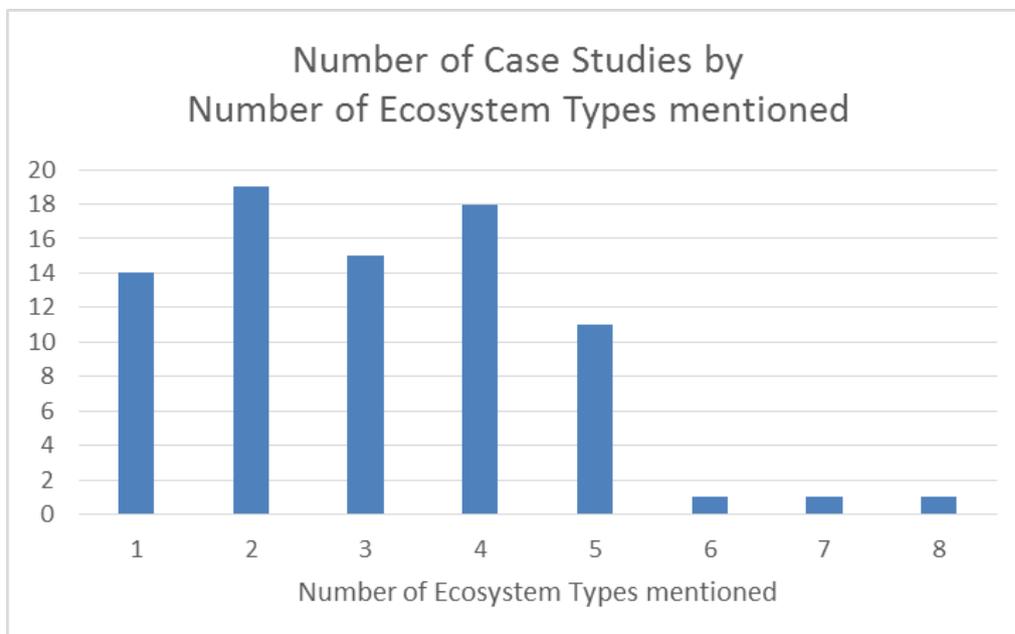
(1) Ecosystem

In addition to geographic and thematic distribution, the review also focused on identifying the ecosystem types encountered in the areas where the activities described in the case studies were implemented. The results below show that the majority of them were in agricultural and forest ecosystems, with a lower representation of aquatic ecosystems, in particular in coastal and marine areas. Island ecosystems, as well as

dryland ecosystems are also unique areas of high vulnerability, and were largely underrepresented in the cases reviewed.

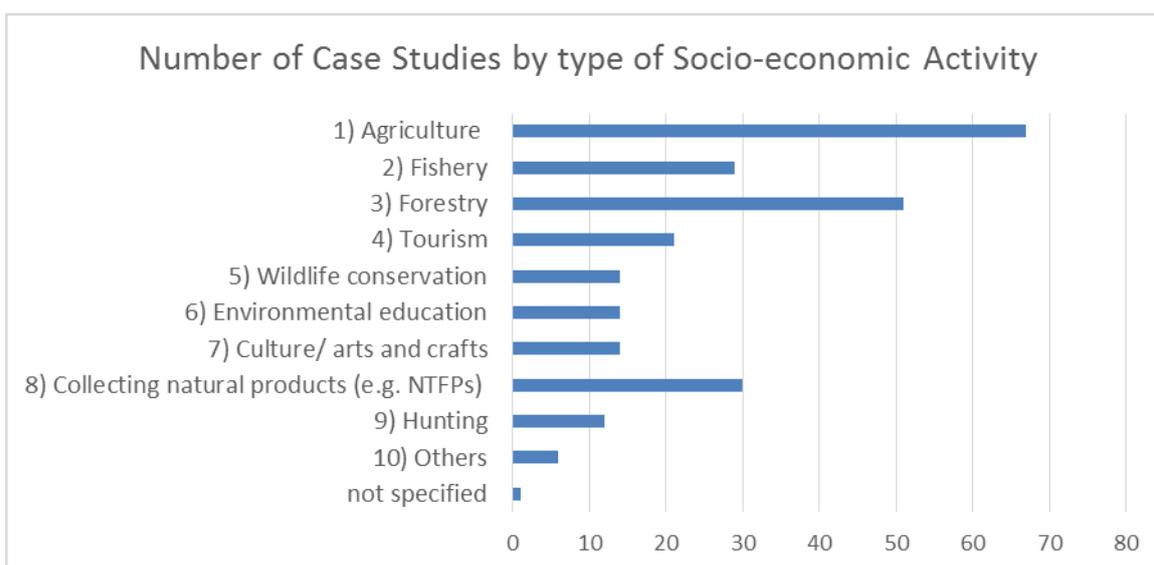


IPSI’s focus on SEPLS, which usually constitute mosaic landscapes of multiple ecosystem types, is found to be well represented when looking at the distribution of case studies by number of ecosystems mentioned per project. A large majority of the case studies touched upon multiple ecosystem types listed within the classification, with some going up to 6 types or more.

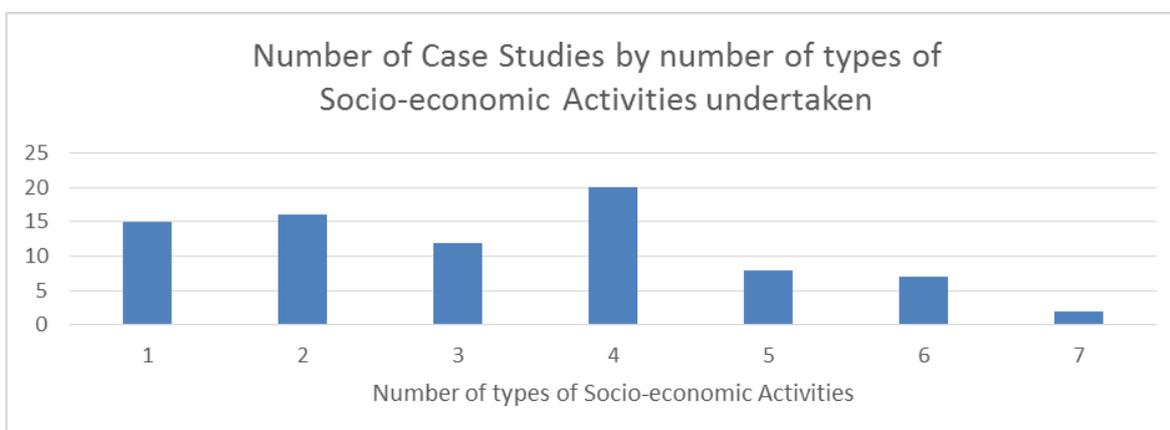


(2) Socio-economic activity

Similarly to the types of ecosystems touched upon in the case studies, types of socio-economic activities undertaken within the project sites were identified in the review. A limitation of this review is that only socio-economic activities described within the case studies could be identified, and thus we cannot account for activity types that exist on the ground but have not been mentioned in the reports. With this in mind, the majority of the cases presented agriculture and fisheries as the main sources of livelihood for stakeholders within the case study sites.



As case studies often present multiple socio-economic activities in each project site, the review also looked at how many types of activities were undertaken per case study. The results below show that the most common number was four types, with the majority being above 2, and ranging up to 7. As was the case with the representation of ecosystem types, this illustrates the multiple-use nature of SEPLS.

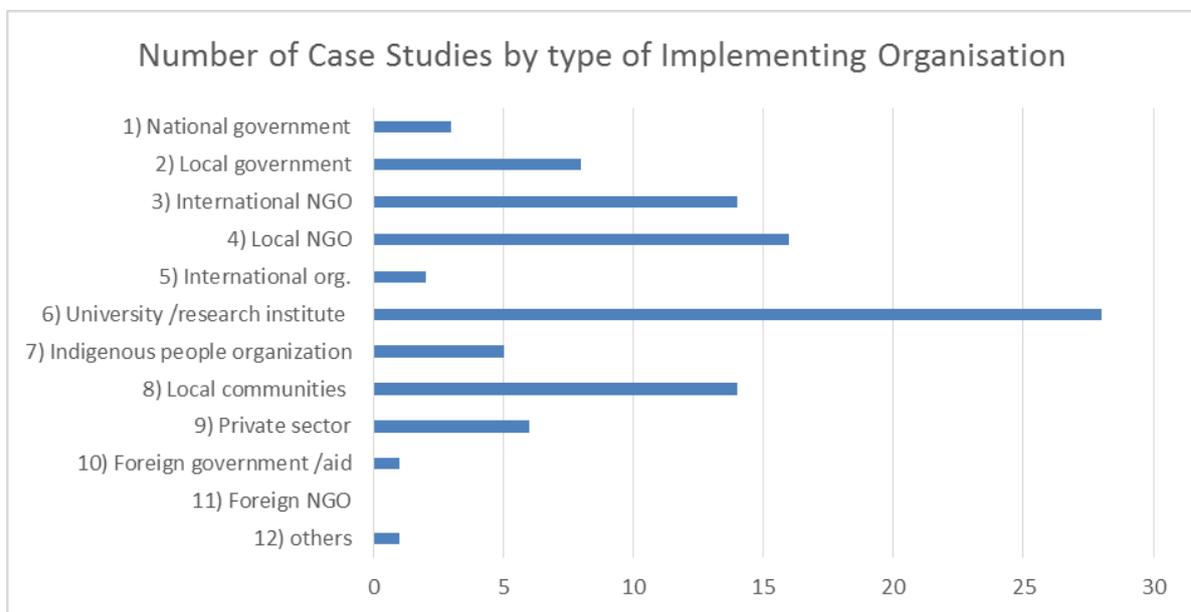


3.1.5 Responsible organizations and stakeholders

For the classification table, the organizations and stakeholders involved in the activities were classified into different categories depending on whether they were the main implementers of the case study, partners playing a secondary role, or providers of financial resources for the implementation of the activities. The types of stakeholders likely influenced by the case study activities were also examined. Results are presented below.

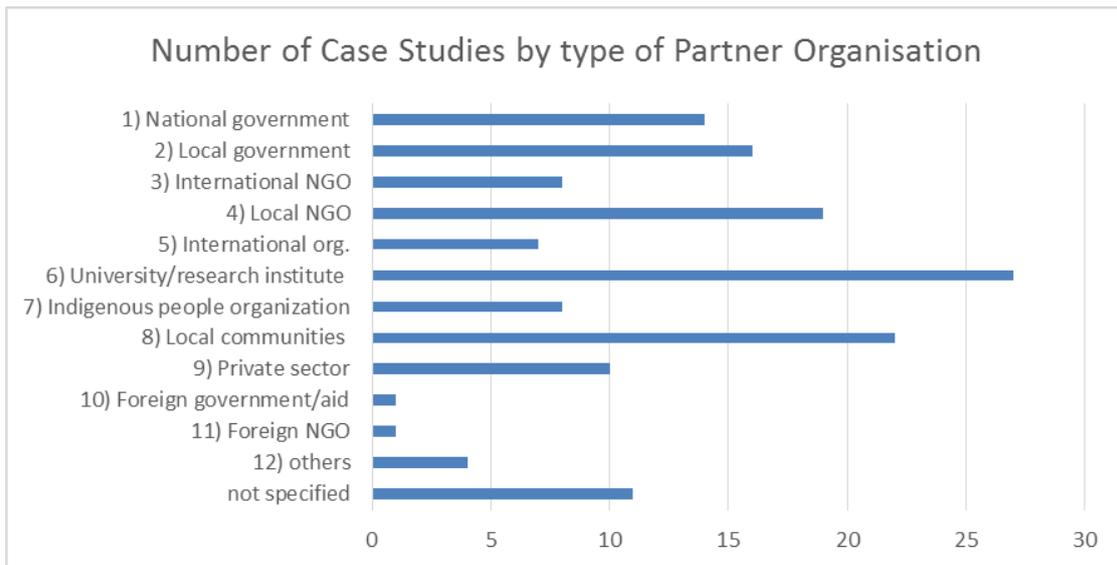
(1) Implementer

The implementing organizations of the case studies were mainly universities and research institutes, which are often engaged in field-based activities in collaboration with various other stakeholders on the ground. This bias towards universities and research institutes may also be due to the fact that these organizations tend to be the most experienced at producing research and activity reports, and thus have submitted the largest portion of the current set of IPSI case studies. There were no cases encountered of foreign NGOs directly playing the role of implementing organization within a different country, unless these were internationally-active NGOs (in which case they have been classified in the corresponding category).



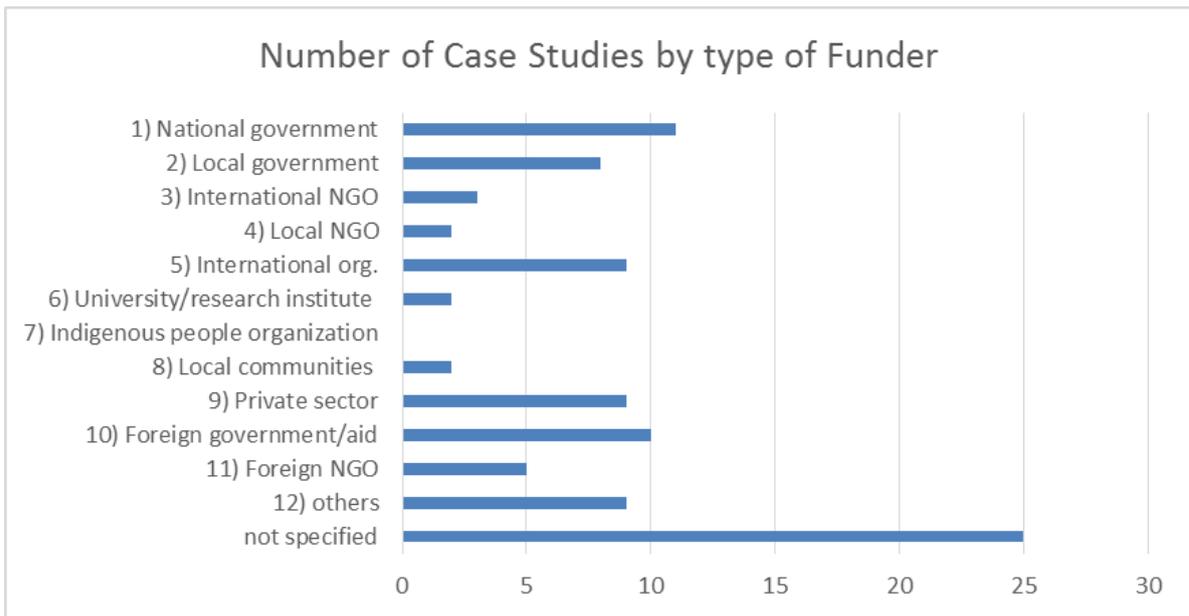
(2) Partner

The most common partner organizations were also universities and research institutes, closely followed by local communities and local NGOs. Of the reviewed case studies, many did not include specific information on project partners. The results also show that although governments were not highly represented in the previous graph of direct implementers of case studies, both national and local governments become more prevalent here as partner organizations.



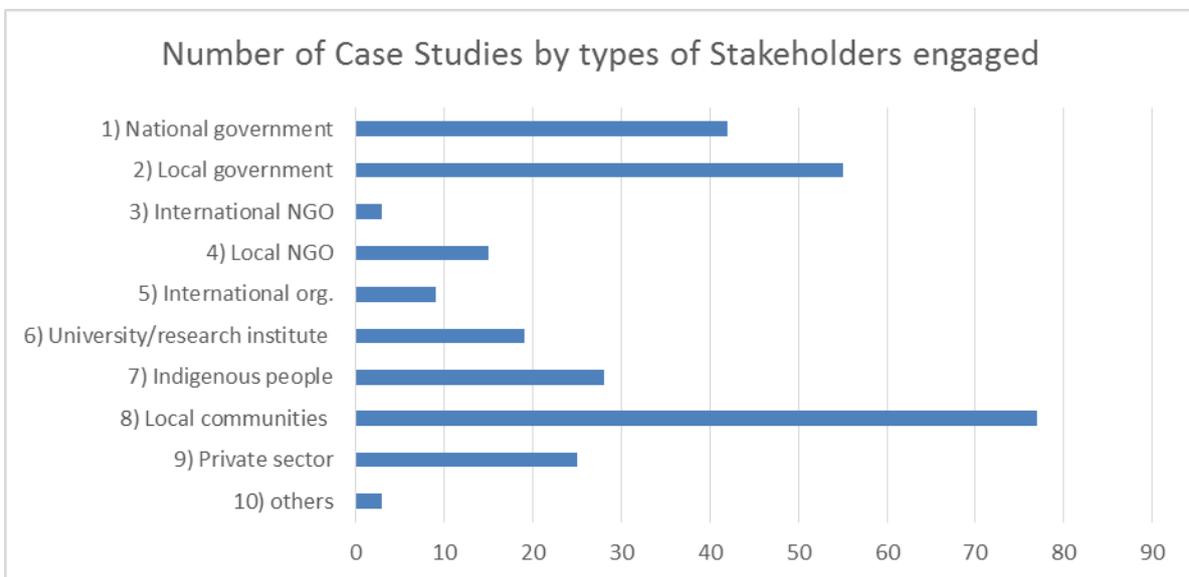
(3) Funder

Information on funding sources was limited in the case study reports. Of those that identified providers of financial support (in whole or in part), national government funding was the most common, followed by foreign government aid. Local communities, NGOs, and research institutes tended to be recipients undertaking activities on the ground based on external support rather than direct providers of financial resources.



(4) Stakeholders

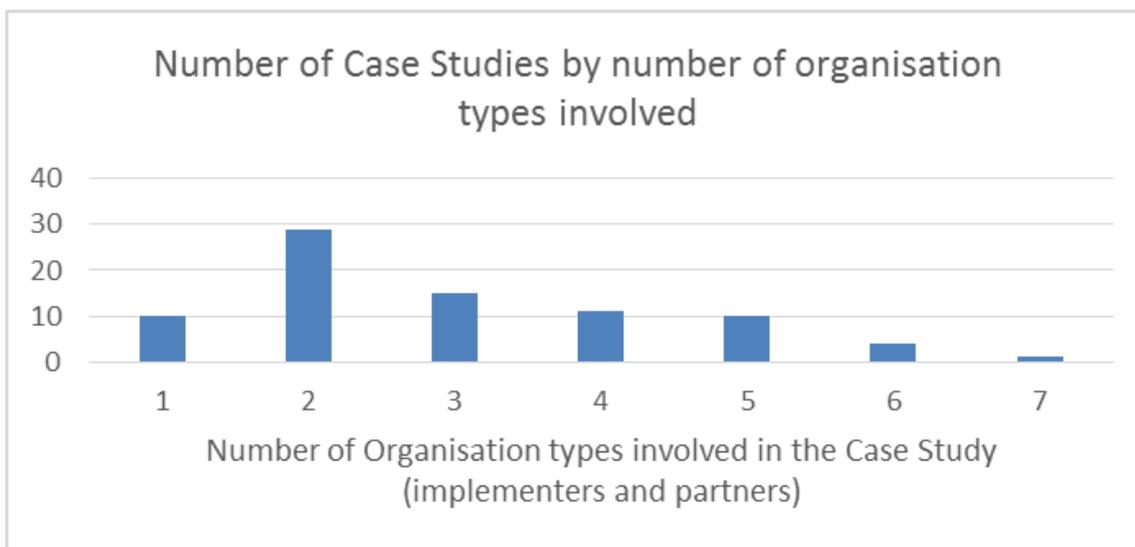
In terms of direct and indirect beneficiaries of activities described by the case studies, the most commonly-identified stakeholders were local communities as well as the local and national governments of the case study sites.



(5) Number of case studies by number of organization types engaged in the activities

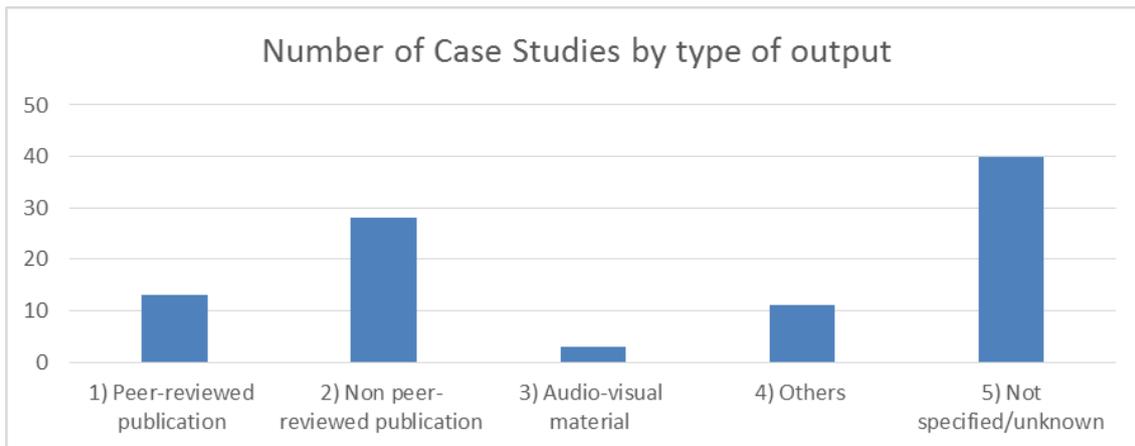
Looking at the number of implementing and partner organizations engaged per case study, the review determined that the majority of case studies were implemented through collaboration between more than two organization types, with 50% of the case

studies involving three or more organization types. This shows the diversity of stakeholders engaged in the activities described in IPSI case studies, and thus their potential to demonstrate good practices in promoting multi-stakeholder partnerships and participatory approaches in the sustainable use of SEPLS.



3.1.6 Output

The review also looked into the types of outputs that have been produced through the case studies, mainly focusing on peer-reviewed publications, non-peer-reviewed publications, and audio-visual materials. The majority of case studies do not specify outputs that have been produced as a result of their activities, and it is thus difficult to determine whether outputs are absent or merely not described. However, of those that mention specific products, the results show that non-peer-reviewed publications are more common than peer-reviewed publications, and that production of audio-visual materials is rare. The category of “other” outputs included a diverse range of products, namely agricultural produce, database and knowledge platforms, magazine articles, merchandise and tourism assets, policy documents, resource maps and action plans developed by participants of training events.

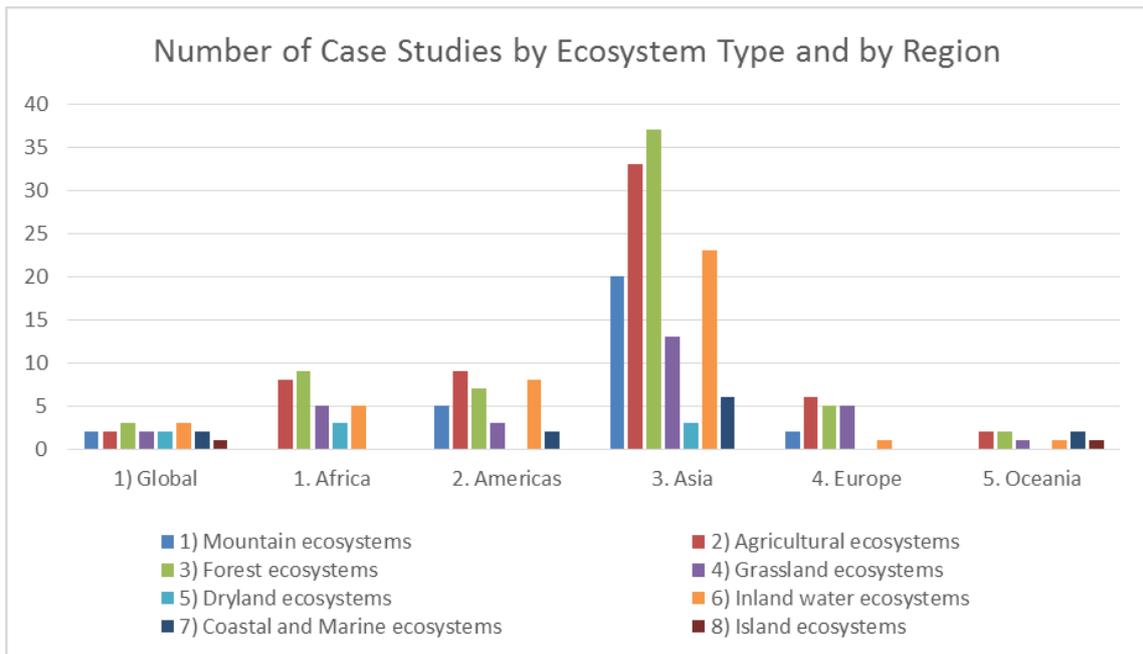


3.1.7 Cross-analysis

The review has also attempted to provide a cross-analysis of the characteristics identified among the case studies.

(1) Type of ecosystem targeted by region

By combining the regional distribution and the ecosystem types, the graph below shows the regional breakdown of ecosystems represented in the case studies. As presented in the previous sections, Asia counts the highest number of case studies, and represents a high proportion of forest, agricultural and inland water ecosystems. For case studies conducted in the Americas and in Europe, there is a higher proportion of agricultural ecosystems than forest ecosystems, unlike the overall balance, which is strongly influenced by the distribution of the Asian case studies. Dry-land ecosystems are absent in the case studies from the Americas, Europe and Oceania, and island ecosystems are only present in the case studies from Oceania.

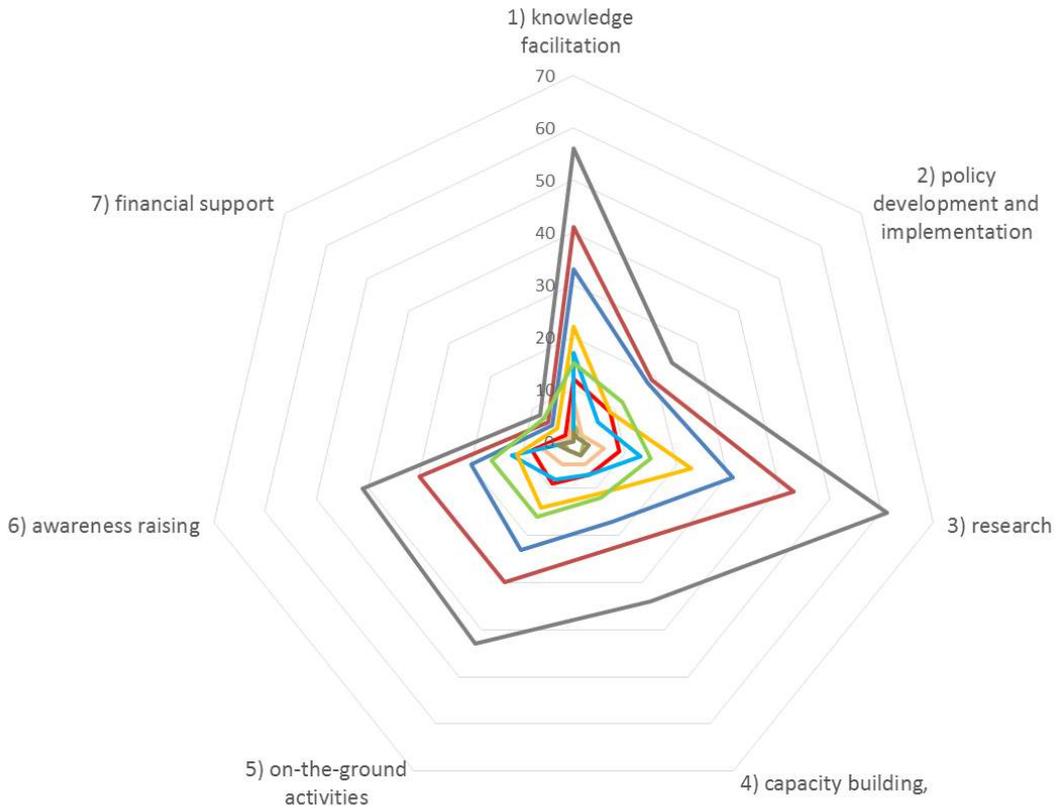


(2) Type of approach by type of stakeholders

As part of the cross-analysis, this review includes the combination of types of stakeholders engaged in the case studies with types of approach chosen for their implementation. The results in the following graph show the balance of approaches seen among the case studies according to the different types of stakeholders engaged. Here, as identified in the distribution of stakeholder types, local communities, local governments, and national governments have the highest number of case studies, and among them there is an overlapping bias towards 1) knowledge facilitation, 3) research, 5) on-the-ground activities, and 6) awareness-raising. A slightly different distribution can be seen when the private sector is included among the stakeholders, with less weight placed on knowledge facilitation and research, and a more even balance between the various approaches.

Types of Approaches chosen by Types of Stakeholders engaged (by number of Case Studies)

- 1) National government
- 2) Local government
- 3) International NGO
- 4) Local NGO
- 5) International org.
- 6) University/research institute
- 7) Indigenous people
- 8) Local communities
- 9) Private sector
- 10) others



3.2 Qualitative analysis

Most case studies include a concluding section on findings or lessons learned, which are grouped and summarized below according to the seven themes and more specific subthemes used in this review. The subthemes were developed during the process of grouping and summarizing. The lessons presented by the case studies are generally context-specific, i.e. depend on the local circumstances of the SEPLS and the local communities who live in it. An exception is the relatively few case studies that have a national or global focus. The lessons tend to relate to multiple themes, although they are not always mentioned under all the related themes but only under the most relevant ones.

3.2.1 Consolidating knowledge and promoting innovation

Under the theme of “consolidating knowledge and promoting innovation” the following subthemes were identified:

- Appreciation/sharing of traditional knowledge, values and practices
- Integration of traditional knowledge and modern scientific knowledge
- Learning, advocacy and replicability of experiences

Appreciation/sharing of traditional knowledge, values and practices (CS 34, 52, 60, 78, 79)

A number of case studies highlight the relevance of traditional knowledge, values and practices for the management of SEPLS, including the conservation and sustainable use of their biodiversity (CS 34, 52, 60, 78 and 79).

One case study pointed out that the **various beliefs, value systems, rules and regulations developed by each community contribute to the creation of strong links between humans and biodiversity** (CS 78). The study showed that customary use of the resources by both indigenous and local communities in Bangladesh’s protected Sundarban forests is fully compatible with conservation and sustainability. All the traditional resource users truly believe that the forest provides them with their livelihood.

Another case study (CS 60) on a Biosphere Reserve in Cuba emphasizes the importance of implementing initiatives that support the **documentation of on-farm diversity as a basis for the retrieval of traditional knowledge and its conservation in the future**. While traditional knowledge is transmitted through the generations, the case study points out that community registers of the local diversity do not exist in the Cuchillas del Toa Biophere Reserve, which constitutes a threat for its conservation.

A third case study of the Hmong and Karen Communities in Thailand includes as a key lesson that there should be **promotion and support of a participatory process to**

study indigenous knowledge, and a process by which tribal people can formulate their own way of life (CS 79).

A fourth case study from Davao in the Philippines (CS 34) argues that **customary knowledge is not static, but adaptive**. To ignite a renaissance in customary knowledge its perception needs to shift in a way that allows for embracing new ways of viewing and employing this knowledge and adapting it to new cultural pathways that are socially acceptable and economically viable. Similarly, for another case study (CS 52), the most significant impact came from **awareness-raising** in the process of research work that debunked misperceptions and clarified matters pertinent to traditional knowledge. The project was able to show, primarily to the pilot communities themselves, the **profound wisdom of the territorial and natural resource management of their forebears** in a time when younger generations are losing traditional knowledge and disparaging views against indigenous lifeways are causing some youth to feel shame or disinterest in learning their culture.

Integration of traditional knowledge and modern scientific knowledge (CS 9, 34, 40, 60)

A number of case studies conclude that in view of the challenges local people face in agriculture today, such as intensified cultivation, changing lifestyles and climate change, it is important to **complement traditional knowledge with modern science knowledge** (particularly CS 9 and 60).

One case study (CS 9) outlines how traditional knowledge constituted a perfect mechanism in the savanna of Kenya for the Maasai to coexist with wildlife and sustainably use resources. However, the influence of a market economy, changes in wildlife management, and drastic environmental changes have caused the traditional lifestyle of cattle breeding to become ill-suited for the present situation. Although the Maasai have also introduced modern irrigated agriculture, the case study finds that they require **new knowledge and techniques to maintain traditional cattle-breeding under unprecedented drought conditions**.

A global case study on the use of agrobiodiversity by indigenous and traditional agricultural communities argues that **innovation based on both traditional knowledge and new information is crucial in adapting to climate change, such as the use of traditional crop and livestock species through community seed banks and on-farm conservation combined with new varieties where necessary** (CS 40).

The above case study from Davao (CS 34) argues that it is necessary to **integrate traditional ecological knowledge and modern science to promote innovations**. The study finds that the Satoyama Initiative is useful to improve understanding and

appreciation of the need to adapt customary policies in ways that sustain core elements of culture yet adapt to pressures for change.

Similarly, according to a case study from Cuba (CS 60), most of the farmers in the target nature reserve are receptive to changes in their farms and tend to introduce new varieties and techniques to get higher yields and increase the capacity of farm protection and recovery against different harmful biotic and abiotic factors. The study finds that it is necessary to **create new spaces to exchange and share knowledge on new crop varieties and technologies** and to improve the marketing of agricultural products.

Learning, advocacy and replicability of experiences (CS 36, 52, 67, 68, 71) Many case studies deal with the issue of learning new experiences from the approaches introduced by the case study or the projects they describe. The main difference is whether they focus more on explaining the learning process as part of the case study (CS 67, 68) or advocate their lessons for others to learn (CS 52, 71) and possibly replicate (CS 36, 71).

A case study from Indonesia (CS 67) stresses that the immediate result of **participatory learning activities** was that farmers directly improved their revenue due to the transfer and sharing of knowledge, and that trust between facilitators and participants creates a positive atmosphere and facilitators therefore need to understand the local situation. Although the **processes of participatory learning tend to require significant resources and logistical support, they can be made cost- and time-effective** by encouraging participants to be more committed and contribute to the activities.

Another example from a Philippines case study (CS 68) focuses on the capacity of teachers of elementary school students, who participate in a programme to form “Earth Ambassadors” for biodiversity conservation in SEPLS. The university implementing the programme concluded that it is important to **organize training courses and workshops for teachers**, as they are neither experts in natural or environmental sciences. It also finds that adapting a partnership strategy with partner schools can help cement the relationship.

In terms of advocacy, a few projects point out the importance of **sharing project experiences through national and international policy advocacy**. In the case of one study from the Philippines (CS 52), the project experience has been presented in national fora with the aim to promote revitalization of indigenous peoples’ natural resource management systems. It has also been shared with community mappers in different countries to provide a broader perspective on traditional occupations and traditional knowledge on the development of nested ecosystems.

Similarly, a case study from Cambodia (CS 71) argues that **successfully achieving results on the ground can draw the attention of government to the project’s aims**. The government became interested in the project after Tmatboey – a village participating in the ecotourism initiative – won a prize from the United Nations

Development Programme (UNDP). It identified a further six sites to be developed for nature-based tourism.

The same case study (CS 71) developed a replicable model to achieve sustainability. **Three financial incentive schemes that provide benefits for rural communities and for the conservation of globally-threatened species have proved to be replicable** in new villages within the current work areas or new regions within Cambodia.

A case study from Japan on training for capacity development on biodiversity conservation (CS 36) found that **knowledge and experiences from one country can be introduced and applied to other countries but require modification and translation into the local context** due to differences in the nature environment and economic conditions.

3.2.2 Ensuring good governance and equity

Lessons learned on ensuring good governance and equity are grouped under the following subthemes:

- Interest representation and organizational responsibility: need for good governance and institution building
- Indigenous governance
- Community-based management of natural resources
- Decision making and implementation
- Partnership building and
- Integrated management.

Interest representation and organizational responsibility (CS 10, 13, 19, 27, 51, 52, 54, 67, 78)

A number of case studies provide useful lessons for ensuring or improving interest representation and organizational responsibility of stakeholders, including local communities. This includes activities to ensure interest representation through institution building.

The need for community involvement is pointed out in one case study (CS 10) in which it is found difficult to achieve a successful outcome for conservation in the Pacific islands because most of the territories consist of customary lands in which **protected areas cannot be set up without the residents' consent**.

The need for **cultivating lasting relationships with actors who engage locally and throughout the SEPLS** is identified in a case study from the Abrolhos region of Brazil (CS 19). Such stakeholders can include cultural organizations, such as artists'

associations, that are active in the SEPLS. Because of such long-term relationships, the implementing organization is seen as credible, legitimate, and trustworthy.

Competing demands for natural resources can increase the need for institutional coordination of different interests in natural resource management. This is the main finding of a case study from India (CS 54) to address increasing competition over water resources between urban use and agricultural irrigation. In the interest of water use for agriculture, investments in sewage treatment are recommended.

A case study from Cambodia (CS 27) identified some constraints and problems in the implementation of community forestry. While the support by the commune councils has contributed to accelerating community organization and involving community members, the study found that some councils face challenges from a large workload, shortage of finances and limited capacity. **It is important to ensure appropriate resources for councils, and at the same time, keep transparency and accountability** to prevent a misuse of the funds.

Another case study, from Viet Nam (CS 51), more explicitly points out that **local problems should be solved by local actors**. The study admits that this may imply a loss of control by the implementing NGO. In this case, the NGO can limit its role to reinforcing the dynamics that evolve spontaneously among stakeholders. Local ownership is the only way to guard the quality of a process because local actors know best how to deal with political and social dynamics in their own context. Moreover, local ownership is the only way to ensure local actors feel ownership over decisions and feel responsible after the project ends.

The above case study from Indonesia (CS 67) on options for farmers to improve livelihoods and milk production and quality concludes that **females' participation in participatory learning processes should be encouraged since their roles are essential** in the dairy farming activities and greater female participation would make impacts more visible.

The aforementioned case study from Bangladesh (CS 78) concludes that the **loss of biodiversity can be rooted in weak governance, including corruption and social inequity**. These problems can cause ecological degradation, as environmental groups have pointed out in the Sundarban forests during the past two decades; this has been recognized by the government and international bodies.

A case study on agriculture in Wayanad, in southern India (CS 13), found that **integrating existing active informal institutions into newly-crafted formal institutions is necessary to secure farming and traditional land-use systems**. An example is the People's Biodiversity Register (PBR) under the local self-governmental institutions (Panchayaths) to document and conserve biodiversity.

For a case study in the Philippines (CS 52), the **purpose of forming farmers' organizations was to spearhead planning, resource generation and the implementation of community development plans**. While full participation of local people still needs to be strengthened, the **group discussions and educational sessions in these organizations have allowed community members to recognize the validity and value of their traditional knowledge**.

Indigenous governance (CS 42, 79, 80)

The importance of strengthening indigenous governance in particular is a lesson included in a number of case studies.

A case from Benin (CS 42) found the main **challenge to the sustainable management of sacred forests is the weakening of traditional leadership and religious practices**. The recent degradation of sacred forests has had a negative impact on the conservation of biodiversity resources, particularly since there is little experience in community-managed forest and participatory processes.

The above case study of Hmong and Karen Communities in Thailand (CS 79) found that **indigenous community rights over resources and land should be respected at all levels and be given a formal status** in order to promote customary use of biological resources according to traditional norms and regulations.

A study on the Wapichan people in Guyana finds that the *kaduzu* local customs include a rich body of norms and beliefs that promote the sensible use of land and natural resources (CS 80). The study recommends that land and natural resource laws and policies should be updated for effective **recognition and protection of traditional tenure, governance and resource-use regime** of the Wapichan people and other indigenous peoples in Guyana.

Community-based management of natural resources (CS 14, 39, 47, 48, 56)

Community-based management of natural resources has also provided a rich set of experiences and lessons from around the world, particularly from community-based forest and lake management systems.

A case study from Mexico (CS 14) showed that **community-based forest management makes it possible not only to utilize forest resources in a sustainable way, but also to provide socio-economic benefits to the community**. Local governance structures have contributed to efficient decision-making on major issues related to natural resource management. This includes the definition of rules which governs access to forest resources, the planning and construction of road networks, the production of sawn timber and the obligation of community members to participate in forest conservation activities.

A case study from Nepal (CS 39) concludes that **community forestry is a viable resource-management approach for conserving and improving the condition of forest resources** if it is based on appropriate policy, policymaking processes and compliance mechanisms. Under community forestry, forest user groups can become effective and inclusive institutions and contribute to sustaining local democracy and delivering rural development services by creating income generating activities and establishing partnerships.

A case study from the Philippines analyses a considerably successful multi-sectoral, community-based approach for the sustainable management of Tadalac Lake (CS 47). The study shows that **community leaders can play an important role in community-based resource management** if they use their authority to address any overexploitation of natural resources. In this case they successfully convinced fish cage operators, who had overfished the lake, to leave.

Based on the experiences of a case study from China (CS 48), key points for supporting community-based natural resource management include: **identifying actions supporting community-based resource management, developing trust between outsiders and the community, changing the behavior and attitudes of local officials**, translating the conceptual strategy for intervention into an operational strategy, targeting model and orientation, and monitoring and evaluation of community actions.

A project promoting community forest restoration as part of the Integrated Management of Lake Chapala Basin in Mexico has shown many advantages (CS 56). **Community-based management allows rural people to take ownership of their development process to strengthen their organizational structures**, helps to establish a solid foundation for democratic processes facilitates informed decision making for management of forest ecosystems and creates linkages to solve conflicts and problems.

Decision making and implementation (CS 2, 50, 69, 73)

The importance of **participatory decision-making and implementation** in ensuring sustainable and multi-functional management of natural resources and ecosystem is another common lesson in a number of case studies.

Two case studies specifically consider gender in participative processes in the management and use of SEPLS. A study on the *ayllu* system of the Potato Park in Cusco, Peru, (CS 2) found that through participation in economic collectives, women contribute to family economies. **Moreover, the creation of inter-community groups has strengthened networks and generated synergies by bringing together all of the communities for decision-making.**

A case study on participatory learning and action for sustainable agriculture and natural resources management in Lao PDR (CS 69) argues that administrative organs should **provide a wide range of management options for decision-making by the villagers**, thus avoiding top-down approaches with only a single option available.

A case study from Peru highlights the importance of the **participation** of local User Committees of Natural Pastures (CUPN) members **in research and monitoring work, the interpretation of results and the implementation of actions** identified, jointly with protected area staff and scientists (CS 50). The development of leadership on these activities within local CUPNs and increased engagement of women and younger members of the communities are crucial for their longer-term success.

The two-year action research projects of a case study from Taiwan (CS 73) have successfully introduced the Satoyama Initiative's three-fold approach into formulation of the "Cihalaay Cultural Landscape Management Plan" through a multi-stakeholder participation process. The projects facilitated **dialogue between the local community and the governmental authorities and helped to transform the informal local code of conduct – or norms of behavior – into its formal management principles.**

Partnership building (CS 19, 23, 25, 26, 34, 62, 67, 70, 71)

There are many case studies that focus on coordination and cooperation beyond individual organizations. These can be institutionally weaker, more pragmatic forms of building networks or partnership among stakeholders, as discussed in this subsection, or lead to institutionalized approaches through integrated management of SEPLS, the subsequent subtheme.

One case study in Davao, Philippines (CS 34) targets both integrated management and effective partnerships, as it finds that "Integrated Water Resource Management" requires scaling up efforts to **consider all users for an equitable decision-making framework for allocation of water resources and land-use management** at the watershed or basin level.

Building strong partnerships is also identified as crucial in a case study conducted in the Abrolhos Region of Brazil (CS 19). The implementing organization noted that **influencing an economic development pathway requires political momentum, which can only be built with strong partners**, including local communities and governments.

A case study in Madagascar (CS 23) found that, although time-consuming and expensive, the effort put into developing **partnerships that share a common vision can yield benefits for the creation and management of a newly protected area** from a broad alliance of diverse stakeholders. In this case, partnership building between the

multiple actors could address initial tension between conservation and development interests.

A partnership of scientists and a variety of local and regional stakeholders was formed during the process in the Hokushinetsu region of Japan (CS 25). This process **influenced local, regional and global processes through the transmission of *satoyama* and *satoumi* values**, including in CBD related events. The partnership is currently working with local governments towards the planning of local biodiversity strategies in line with Japan's implementation of Local Biodiversity Strategy and Action Plans (LBSAPs).

Another case study that focuses on the revitalization of a region in Japan (CS 26) also found that **the attitudes and preparedness of local people towards working together with outsiders matter**. When a plan to regenerate 1.4 ha of cultivated land that had been abandoned was proposed in 2010, local people began to welcome the idea of having outsiders in their community.

A case study on community development that allows coexistence with the reintroduced Oriental White Stork in Toyooka City, Japan (CS 62), also finds that it is necessary for diverse stakeholders, such as farmers, local governments and even supermarkets selling sustainable products, to **work together to create a sustainable environment** for the storks.

A case study from Cambodia (CS 71) identifies lessons on how to engage the government as one important stakeholder. The **close liaison between government, an international NGO, and national civil society was particularly successful in meeting the complex requirements of the activities**. It also provided unique insights into the needs of the local people and examples of how to work with them to achieve important conservation goals.

Similarly, a case study from Indonesia (CS 67) on a project for farmers to improve milk production and quality stresses the **importance of sharing the project activities with other stakeholders** such as village staff, extension and cooperatives, as this would provide more support and contribute to the long-term sustainability of the activities.

One case study deals with a rare form of partnership through co-management of a socio-ecological production landscape (CS 70) between the two parts in the politically divided buffer zone area of Cyprus. This example can be useful for **trans-boundary cooperation on SEPLS management** in politically sensitive contexts. The Buffer Zone regime has 'forced' the development of co-management practices and institutions through bi-communal technical committees for environmental protection.

Integrated management (CS 17, 55, 57, 76)

The main form of integrated management that is addressed in the reviewed case studies is integrated water resource management, particularly lake management, and lessons learned focus on how to develop and/or enhance it.

A study from Malawi on the Tonga people (CS 17) illustrates the diversity of food obtained from both Lake Malawi and its surrounding land. It argues that this cannot be achieved without simultaneous management of the land and the lake. **The concept of well-being connects the land and the lake in the mind of villagers and provides them with incentives for integrated management** of the two.

Two case studies include lessons on integrated lake management but with a distinct focus. One case study discusses how to improve integrated lake management, whereas the other case study finds that its methodology can be applied in the management of other SEPLS.

Lake governance in Nepal is gradually evolving and has been observed as successful at the community level in many places, as a case study on Rupa Lake in Kaski District (CS 55) explains. Communities in the Rupa Lake basin have demonstrated a visible example that a Himalayan **lake environment can be restored if key governance components such as the six pillars envisioned by “Integrated Lake Basin Management” (ILBM) are promoted** and strengthened. Replication of such governance with necessary modification can help in restoring the basin environment of Himalayan lakes to contribute to livelihoods.

Another study on a series of cases worldwide (CS 57) finds that the methodology of ILBM can be applied to a wide range of environmental issues with governance improvement challenges. It argues that the **conceptual framework and strategic program of ILBM may serve as an efficient approach for managing various universal ecosystems and environmental resources for sustainable co-existence and mutual use**, through a gradual, continuous and holistic global improvement of their governance.

Integrated management is also required for mangrove restoration in combination with river-catchment management, as a case study on the Chone River Estuary in Ecuador finds (CS 76). The process of **ecological restoration of mangrove ecosystems requires a series of coordinated activities by different institutions to reduce the main causes of deterioration**, including developing strategies to effectively lower pollution levels and recuperate the productive capacity of the ecosystem and its ecological functions.

3.2.3 Securing livelihoods and enhancing well-being

Lessons learned under the third theme, “securing livelihoods and enhancing well-being” are classified under the following three main subthemes:

- Food security and poverty alleviation
- Local well-being
- Income or business opportunities

Food security and poverty alleviation (CS 42, 52, 53)

Three case studies address the interlinked issues of food security and poverty alleviation in their findings.

A case study from Benin (CS 42) finds that the increasing poverty and food insecurity in surrounding villages puts additional pressure on sacred forests' resources. To reduce poverty and food insecurity in the local population, **alternative income-generating activities need be developed, such as private plantations and promotion of non-timber forest products**, amongst others.

A case study from the Philippines (CS 52) stresses the need to promote development and innovations of traditional occupations for increased food security and poverty alleviation. These may include: food gathering, food processing, pottery, bamboo weaving, barter, salt making, stone-wall construction and broom making. It also points out the **need for sustainable food production systems by increasing the productivity of paddy fields and rotational agricultural areas as well as the production of cash crops** through revitalization and innovations on traditional knowledge.

A case study conducted in India (CS 53) finds that deforestation and loss of water bodies are two of the causal factors of child malnutrition and mortality in the project area. It shows that existing water bodies can be exploited to obtain **sustainable food security for the tribes, which contributes to eradicating child malnutrition** without any external support, and that **productive lakes can be the prime source of quality food and employment** with additional economic support for those presently burdened by stress and poverty.

Local well-being (CS 17, 71)

Lessons on promoting local well-being and sustainable livelihoods are also highly related as part of the socio-economic dimension of SEPLS, but the number of case studies addressing these is limited

A study from Malawi (CS 17) on the livelihood of the Tonga people demonstrates that the **diversity of terrestrial and aquatic biota is not only vital to the local livelihood, but central to the concept of well-being itself**. The Tonga people express various norms and values with reference to their staple foods, which they obtain both from the lake and the surrounding land. This cannot be achieved, however, without simultaneous management of the land and the lake, as was outlined under the integrated management concept above.

A case study from Cambodia (CS 71) considers the **provision of financial rewards for biodiversity conservation to local people is a successful strategy for both biodiversity conservation and contributing to local well-being**. Three direct payment initiatives under the project have ensured conservation of threatened species and benefitted rural communities.

Income or business opportunities (CS 6, 8, 12, 28, 37, 69)

The creation of opportunities for local community members to engage in activities to generate additional or alternative income or to set up a business is a shared focus of lessons identified by a number of case studies.

A case study from Japan (CS 6) illustrates how **high value-added farm and livestock products can lead to new industries in rural areas**. As a direct contribution to the region, the studied local company provided employment to approximately ten local people.

A case study from Germany (CS 8) finds that many people's **high level of environmental conscience** in the State of Bavaria **enables the direct payment of high prices toward farm businesses** that support rural landscape and biodiversity. This attitude could stem from the traditional perspective that the people who live on the land "must protect their own land".

Another case study from Japan (CS 12) finds that **initiatives owned by small communities** in Ishikawa Prefecture **can attract attention and business success when done collectively**. A research program has been established on the surrounding *satoyama* landscapes, tourism has sharply increased, and local products are growing in popularity.

A case study from Rasuwa District in Nepal (CS 37) on the cultivation and domestication of medicinal plants by farmers on their private land includes a number of lessons. While some relate to the sustainable use of biodiversity as outlined later, others stress the socio-economic benefits for the farmers. The project established a direct link between the producers and big traders, and reduced the profit margin taken by middlemen in the collection and sale of medicinal plants. As a result, **cultivation of medicinal plants on farmland is found significantly more profitable to farmers compared with conventional crop cultivation**.

Similarly, a case study on productive bamboo landscapes of Western Zhejiang in China (CS 28) shows that the development of successful silvicultural practices and **bamboo growing** for traditional and modern uses **has had the triple benefit of raising farmer incomes, sequestering carbon and avoiding deforestation**.

A case study from Laos (CS 69) identifies options to **secure stable and sustainable sources of income that are not susceptible to climate or market prices by diversifying the kinds of cash crops, including fruits**. The villagers need to receive technical guidance from administrative organs on the cultivation of cash crops that they have not grown before and learn cultivation skills for value-added cash crops suitable for the climate and soil of the locality. Building knowledge of how to feed cattle on silage is also required to stabilize the source of income.

3.2.4 Conserving landscape/seascape diversity and ecosystems

The lessons learned on conserving landscape/seascape diversity and ecosystems are classified using the following subthemes:

- Biodiversity conservation
- Landscape conservation and revitalization
- Nature restoration

Biodiversity conservation (CS 16, 19, 43, 71 77)

The lessons learned by a number of significant of case studies focus on biodiversity conservation. Lessons on biodiversity conservation offered three major messages; the importance of scientific research, the provision of financial and other benefits and the need to address the underlying causes of biodiversity loss.

Two case studies underline the *importance of scientific research* for biodiversity conservation in their findings. A case study from Queensland, Australia (CS 16) finds that it can be critical for local implementers or stakeholders, such as the Community for Coastal and Cassowary Conservation in this case, to perform **scientific environmental evaluations to clarify the impact of nature-friendly agricultural practices on the biodiversity** of a region. A case study from Abrolhos in Brazil (CS 19) also stressed that ecological research successfully **generated scientific information and made it accessible to various audiences in the region**. Keeping a scientific foundation upon which to design and adapt programs is essential for maintaining credibility among partners, as well as for informing decisions.

Three case studies present lessons on the importance of engaging local people in the conservation of a SEPLS through the *provision of financial and other benefits*.

The above case study from Cambodia (CS 71) points out that **combining strategies to improve the economic well-being of local communities with biodiversity conservation strategies can make conservation more effective**. A key lesson of the study was that the financial rewards for those involved were linked directly to the conservation outcome, not through an indirect pathway; if the outcome (reduced

hunting of endangered species, reduced habitat clearance, etc.) was not achieved, then no payments were made.

A study from Ghana (CS 77) on a project to conserve biodiversity in cocoa-growing landscapes shows that **biodiversity data collection and farm mapping can benefit farmers**. Engaging farmers in biodiversity data collection and mapping activities helped them consider biodiversity and improve the management of their farms. Farmers were reportedly happy to see what their farms looked like on the computer after being mapped.

A study from Wayanad District, India (CS 43) shows that **traditional land use is a sustainable pathway for the protection of genetic diversity of crop plants and the diversity of food plants available from the wild**. Reduction of chemical-fertilizer use through traditional cultivation practices and use of alternate methods result in a minimization of pollution and thereby contribute to the overall health and well-being of the dependent communities. The study stresses the importance of promoting ecologically sound agricultural practices that ensure both crop productivity and biodiversity conservation.

Landscape conservation and revitalization (CS 7, 15, 18, 20, 23, 34, 44, 73)

Recognition of the *values of landscapes and the need to conserve or revitalize them* is common to the lessons learned in several case studies.

A case study from Argentina (CS 7) finds that in order to **preserve the picturesque presence of *chacras* landscapes, it is necessary for farmers to remain and continue to managing and cultivating their land**. The most significant challenge is achieving a steady distribution of agricultural products from the *chacras* and the income they generate. In addition, it is important for landowners and other stakeholders to recognize the value of *chacras* in terms of their aesthetic contribution to the unique landscape of the country.

A case study from Japan (CS 15) which deals with a rare example of the management of publicly-owned land by local residents highlights the **importance of reintroducing human interventions for landscape-management purposes and the conservation of the natural environment as well as the historical and cultural heritage**. This project stresses the need to make local farmers more proud of their own occupation, which contributes to the conservation of the landscape and its natural environment.

The importance of recognizing landscape values is also one of the lessons of a case study from Galicia, Spain (CS 18). The loss of function and the present lack of recognition regarding the value of the *agras* landscape constitute serious threats to its conservation. The persistence of this **traditional landscape** in parts of Galicia provides

an opportunity to identify, conserve and value the traditional agrarian landscape elements.

One case study from Cambodia (CS 20) focuses on addressing threats and barriers to landscape conservation. It finds that by far the greatest threat to the area comes from impending land concessions that currently overlap vast sections of the Western Siem Pang protected area. The planned **large-scale forestry conversion for teak, sugar plantations and other uses is expected to cause irreparable landscape changes, destroy resident biodiversity and impact the lifestyle** of local communities.

Three case studies have in common that they include specific lessons on *linking economic and ecological values* for landscape conservation and revitalization.

The above case study from Madagascar (CS 23) on creating a new conservation area shows that the **provision of incentives to local people for conservation is a key factor in successful landscape conservation.** Incentives could be provided through conservation agreements, grants linked to natural resource stewardship, or nature-based enterprises such as ecotourism.

The above case study from Davao, Philippines (CS 34) sees that **adopting an agro-ecological landscape approach is a key for change.** Land classification used in this approach accurately reflects the local mosaic of the actual land uses and land cover for different production systems. The approach is based on two production systems (traditional and banana), which can serve best both the needs of landscape conservation and the socio-economic needs of communities of Davao.

A case study from Germany (CS 44) also finds that **linking agricultural use and economic incentives to nature conservation is critically important to maintain meadows**, which have been lost both by intensified and extended land-uses. While green belts around villages suffer from increasing urbanization, many orchards have been abandoned due to a lack of profitability and have been converted into forests.

Another two case studies draw lessons from the *creation of a new type of protected area.*

The above case study from Madagascar (CS 23) shows that the creation of a protected landscape-level conservation area, such as the Ankeniheny-Zahamena Corridor, requires an alliance of diverse stakeholders, who share a common vision for its establishment and management. It is crucial to **first demonstrate that securing ecosystem services benefits local people in specific places and then to scale-up those successes for broad-level impact.**

The above case study from Taiwan (CS 73) on the formulation of the Cihalaay Cultural Landscape Management Plan shows that the **combination of a multi-stakeholder participation process and the landscape approach in light of the Satoyama**

Initiative concept can help to create a new style of protected areas (IUCN protected area category V) in Taiwan's national protected area system. The Satoyama Initiative concept can be applied not only outside but also within protected areas.

Nature restoration (CS 35, 38, 56, 62, 66, 76)

A range of case studies focus on the restoration of nature in SEPLS, including their biodiversity.

Three cases studies provide lessons on the reintroduction of specific species. One case study from the Chone River estuary in Ecuador (CS 76) presents the lessons of a project for the reintroduction and monitoring the mouthless crab. It points to the **need for ecosystem restoration and recognition of ancestral knowledge and skills, which are equally important for the recovery** of the mouthless crab. It also stresses the need for generation of income, achieved through the sustainable management of the mouthless crab and improving the living conditions of families who harvest crabs.

Very similarly, two case studies from Japan, had a similar focus on the reintroduction of the Oriental White Stork by restoring habitat features and contributing to community development. One of them (CS 35) shows that the reintroduction of storks in Japan requires **both the necessary funding and a multidisciplinary approach** involving a team of persons drawn from a variety of backgrounds. These may include people from governmental natural resource management agencies, NGOs, funding bodies, universities, veterinary institutions, zoos, private animal breeders, and/or botanic gardens. The other case study (CS 62) focuses more on community development to live in harmony with the storks. It finds that the **optimum environment for storks can also be a good environment for human beings**. By adopting environmentally-friendly farming methods and providing information about these to consumers, the farmers' income can increase, which demonstrates the potential positive linkage between conservation and economic growth.

A case study from China (CS 38) points out that the **restoration of degraded ecosystems**, such as the severely desertified grasslands in central Hunshandak Sandland, and **the protection of their biodiversity may require alternative approaches to raise the standard of living while reducing human disturbances**. Such approaches include developing animal production and processing activities as well as ecotourism and other industries.

Community forest restoration, as in the case of Integrated Management of Lake Chapala Basin in Mexico (CS 56), can have many advantages. It contributes to social integration through group activities and allows for the development of projects to improve social, environmental and productive activities. The study provides lessons on an integrated approach **to improving forest ecosystems through soil conservation work, tree**

planting, pest control, fire prevention efforts, and payment for environmental services for involved communities. Very similarly, a case study from Cambodia to restore SEPLS (CS 66) provides lessons on reforestation in degraded forest landscapes, where the lack of forest resources seriously affected local livelihoods. By **sharing tree seeds, villagers can increase diversity in their village through reforestation and growing trees in home gardens.**

3.2.5 Promoting sustainable use of biodiversity

The promotion of sustainable use of biodiversity is a fifth theme of lessons learned under the case studies. The lessons are grouped under the following subthemes:

- Sustainable resource use
- Addressing overuse of wild flora and fauna
- Cyclic use of natural resources

Sustainable resource use (CS 5, 11)

A case study from in Cambodia (CS 5) finds that **for the sustainable use and the management of natural resources, it is important that local people pay attention to sustaining the variety of plants** in woodlands around dwellings. Various activities, such as organic farming, commercial duck farming and composting have not only promoted the sustainable use and the management of natural resources, but also made Wat Chas village a model case of sustainable agriculture in the country.

A case study from Louisiana, USA, (CS 11) shows that **large-scale sustainable farming is also possible and gaining a foothold** through decisions to plant crops other than corn. Sustainable farming can reduce the significant burden of cornfields upon the soil or eliminate the use of pesticides and other agrochemicals. Another finding is that the practice of hunting as one way of utilizing natural wildlife is on the decline, while new forms of utilization, e.g. bird watching, are on the rise.

Addressing overuse of wild flora and fauna (CS 37, 47, 58)

The case study from Rasuwa district in Nepal (CS 37) provides lessons on the domestication and promotion of medicinal and aromatic plant (MAP) species. Some of the plant species, such as *Swertia chirayita*, are almost at the verge of extinction due to their high market value and unsustainable harvesting in natural habitats. The domestication of these species by this project **enhanced the natural resource base in the forest by helping to reduce haphazard collection and bring a balance to natural ecosystems.**

The case study of Tadalac Lake in the Philippines (CS 47) finds that after the massive fish kill in 1999 as a result of aquaculture, the **introduction of community-based**

management in partnership with local authorities has led to a sustainable use of the lake's biodiversity. The lake is now a clean water body where locals and visitors enjoy its aesthetic beauty. Fish cage operators were convinced to leave the lake and an alternative site was offered for aquaculture.

A case study on land use change in Uganda's dry-lands (CS 58) suggests that plant species in this area are being lost as they are highly valued for various socioeconomic uses. Tree harvesting for wood, firewood, and charcoal were valued highly, and thus resulted in loss of species. For example, *Vitellaria paradoxa* had the highest value, which led to a decreasing population. There are **various options to control overuse, such as tourism or fruit crop development, but these options should be developed and applied by local communities.**

Cyclic use of natural resources (CS 2, 6, 46, 66, 69)

A case study from Lao PDR (CS 69) includes lessons on cyclic use of natural resources, including cattle excreta. In order to utilize the outcomes of the project in terms of the cyclic use of natural resources, the first consideration should be given to how to develop the "Natural Vegetative Strips" method of contour cropping, which controls topsoil erosion and is the starting point of the cyclic flow. **Establishing the cyclical use of natural resources requires a systematic and appropriate management framework unique to the local context.**

A case study from Kampong Cham in Cambodia (CS 66) finds that the **effective utilization of natural resources should be promoted, especially focusing on the cyclic use of farm residues.**

The above case study from Peru (CS 2) also illustrates how resources are reused and recycled in the Potato Park through practices of organic fertilization. Organic fertilizer is obtained from family livestock or from livestock belonging to other families of the community, or from the forest. This is incorporated in **potato cultivation**, but also **the cultivation of oca and papalisa**, as well as grains, planted in the same space in the next agricultural cycles, **benefit from the residual effect of this initial fertilization.**

Satochi-satoyama (socio-ecological production landscapes) and their ecosystems in a case study from Japan (CS 46) also promote a management system compatible with cyclic use of natural resources as well as the environmental capacity and resilience. The study concludes that it is **necessary to preserve traditional technologies for sustainable resource use and developing new technologies to promote cyclic use.**

Another case study from Japan (CS 6) points out that it has achieved **cyclical use of natural resources, with ecosystem function and human activity in harmony through material flow within the range of an environmental capacity and natural**

resilience. Material flow systems have been established in the area and different land uses are connected by the activities of biogas power generation, forest dairy farming, and low-input farming.

3.2.6 Empowering stakeholders

The lessons learned on approaches and methods to empower stakeholders through community mobilization and capacity building are classified using the following subthemes:

- Community mobilization
- Financial capacity building
- Institutional capacity building
- Human capacity building

Community mobilization (CS 51, 71)

Two case studies include lessons on community mobilization. The above case study from Viet Nam (CS 51) stresses that it was not the implementing NGO that directly organized community mobilization. Instead, **healers, key farmers and the commune's party secretary took the initiative to mobilize the local community when they felt it was the right time.** Eventually, the healers themselves spoke out about the wish to establish a community-based regeneration model and requested the NGO for assistance.

The case study from Cambodia (CS 71) mentioned earlier also draws lessons on motivating communities and encouraging positive behavior toward conservation. It found that **constant contact with the communities is vital and should be a part of all community-based natural resource management projects.** To achieve this, advisors and social mobilizers were employed and spent long periods of time on the ground with the local communities. This frequency of contact helped build high levels of trust, capacity and motivation, which in turn facilitated the change in people's mindsets and behaviors and brought about the success of the three financial incentive schemes.

Financial capacity building (CS 23)

The case study on a biodiversity corridor in Madagascar (CS 23) includes lessons on all three types of capacity building – institutional, human, and, explicitly, financial capacity. This case study is based on the recognition that long-term financial sustainability is a key element to success. This includes **building the long-term financial capacity of local people through income-generating activities under conservation agreements** or by **supporting nature-based enterprises** such as ecotourism.

Institutional capacity building (CS 39, 45)

The earlier-mentioned case study on community forestry in Nepal (CS 39) includes important lessons learned on institutional capacity building. The formation of community forest user groups and their engagement in forest management has created highly **effective and inclusive institutions by utilizing available resources for both subsistence and commercial purposes**. Many of these groups have become viable institutions for sustaining local democracy and delivering rural development services by creating income-generating activities, and establishing partnerships with many NGOs and private sector service providers.

A global study covering a series of projects in tropical timber-producing countries (CS 45) presents lessons on how **building up the capacity of local communities and their enterprises to plan, utilize, monitor and control their forest resources is therefore critical to reduce illegal logging and associated trade**. The Community Forest Management and Enterprises (CFME) Thematic Programme, introduced in 2009, aims to specifically build the capacity of indigenous peoples and forest communities to manage their forests and develop community forest enterprises on a sustainable basis.

Human capacity building (CS 25, 33, 77)

A case study from Cuba (CS 33) shows that **combining research with an active environmental education program targeting local farmers can slowly change attitudes**. Rice growers previously used to kill birds believing that they were eating their crops. The project demonstrated that rice cultivation is compatible with avian conservation. Through effective communication of this improved understanding of ecological relationships, rice growers and the wider community now recognize the benefits birds bring to their crops.

A study from Ghana (CS 77) presents lessons from a project for biodiversity data collection and farm mapping in the Kakum Conservation Area. The project took farmers through the various stages of cocoa production and also built their **facilitating skills to enable delivering training to other farmers in the area**. It is expected that each of these farmers will train three more farmers per year. Through this cascading model, it is expected that all farmers will be trained after some time in the project area.

A case study from Japan (CS 25) shares lessons from a university that has implemented a large number of projects towards maintaining and revitalizing or restoring SEPLS in Kanazawa Prefecture, with over fifty independent programs to build capacity in the Noto Peninsula alone. One of the most important lessons learned through this process has been that **capacity building has to occur both at the personal and institutional levels, not only at the field level but also within the university campus**, i.e. the organization itself.

3.2.7 Addressing emerging issues

The lessons learned on emerging issues are particularly related to climate change mitigation and adaptation, but also waste management and reduction of chemical fertilizer use.

Climate change adaptation (CS 22, 40, 43, 49, 63)

The above study from Wayanad district in Kerala, India, (CS 43) includes an additional finding on climate change mitigation. It shows that **enhancing on-farm diversity is important for reducing greenhouse gas emissions from agricultural landscapes**. Such practices not only increase habitat value by maintaining ecosystem heterogeneity, but also restore wild vegetation, which contributes to **carbon sequestration**.

The case study from Uganda (CS 63) points to a need to **involve farmers in developing and implementing climate change mitigation and adaptation strategies** through concrete activities. The study finds that rather than pursuing blanket reduction targets for greenhouse gas emissions in agriculture, it is necessary to commit to climate change mitigation through improved and sustainable agricultural productivity across multiple factors including water use, carbon efficiency, improved nutrient use efficiency, and land-use intensity.

A case study from Namibia (CS 22) presents lessons that contribute to developing a model for Community-Based Adaptation. As an adaptation measure, **“conservation agriculture” (or “conservation tillage”) is ideal for countries that experience unpredictable rainfall events and patterns, as well as arid areas** with light, alkaline soils such as those of northern Namibia. It combines minimal soil disturbance through ripping and furrowing soils, crop residue retention and incorporation and crop rotation. This approach and associated technology may also work well in similar areas. A vital factor in successfully adapting to climate change is a reliable, community-based support system.

A global case study on the use of agrobiodiversity by indigenous and traditional agricultural communities (CS 40) finds that work is urgently needed to **understand the link between community empowerment and adaptation to climate change in its social, cultural and political dimensions**. There is also a need to **develop indicators of adaptation, adaptability and resilience** that help identify what contribution agrobiodiversity can make and where it is likely to be most useful.

Another global case study (CS 49) finds that **indigenous and traditional agricultural communities need to cope with climate change in different ways**, at different levels. Under the Indigenous People’s Biocultural Climate Change Assessment Initiative, each indigenous biocultural territory undertakes a local assessment to develop a development plan that focuses on building resilience to climate change and ensuring well-being.

Other emerging subthemes: waste management and reduction of chemical fertilizer use (CS 43, 75, 77)

Other emerging subthemes include organic waste management and the reduction of chemical fertilizers.

A case study on the India Organic Waste Management Programme (CS 75) includes a number of lessons. One particular lesson is that **waste from households, communities and institutions can be effectively treated, reduced, reused and recycled for human and environmental benefits**. Waste treatment plants provide alternative livelihoods and lead to poverty reduction. The plants contribute to improving the health conditions of the communities, especially of women, by reducing waste-related pollution and indoor smoke from burning fuel wood.

Two other case studies that present lessons on the reduction of chemical fertilizers are the study from Wayanad district in Kerala, India (CS 43) and the case study from Ghana (CS 77). The former shows that the **use of chemical fertilizer can be reduced through traditional cultivation practices and use of alternate methods like integrated pest management**. This results in a minimization of pollution and thereby contributes to the overall health and well-being of the dependent communities. The case study from Ghana shows that when farmers know the correct size of their farms through mapping, they can save funds that would have been used to purchase chemicals. A printed copy of their **farm map helps farmers to take decisions on the application of agrochemicals and fertilizers and planting of shade trees, which contributes to biodiversity conservation**.

4. Concluding observations

The following concluding observations from the case study review are presented in two sections. First, a synthesis of the various key lessons learned from the diverse range of case studies is provided. Second, some general conclusions from the review are made in order to suggest possible options for improving the collection of case studies.

4.1 Synthesis of key lessons learned

The case studies provide many key lessons under the seven different thematic areas. While the lessons above are context specific, the following synthesis aims to extract the essence of the lessons more generally, so that they can be useful for case study developers and implementers to consider in their own context.

With respect to ***Theme 1: “Consolidating knowledge and promoting innovation”***, important lessons from the review of the case study lessons include:

- Various beliefs, value systems, rules and regulations developed by local communities in SEPLS can contribute to the creation of strong links and positive interaction between humans and biodiversity.
- The documentation of biodiversity on farmland can serve as a basis for the retrieval of traditional knowledge and its conservation in the future.
- Customary knowledge is not static, but adaptive.

However, the case studies also identified a need for action to improve specific aspects of knowledge management and promotion, at least in the local context they focused on:

- There is a need to promote and support a participatory process to study indigenous knowledge, and a process by which tribal people can formulate their own way of life.
- It is important to raise the awareness of younger generations of indigenous people regarding the wisdom of the territorial and natural resource management of the forebears in a time when many are losing traditional knowledge and disparaging views against indigenous lifeways exist.

A number of case studies conclude that in view of the challenges local people face in SEPLS today, such as intensified cultivation, changing lifestyles and climate change, it is important to complement *traditional knowledge* with *modern science knowledge*:

- Integrating traditional ecological knowledge and modern science can promote innovation. However, in view of challenges from climate change and other threats, new knowledge and techniques to maintain traditional practices need to be developed.

- Innovation based on both traditional knowledge and new information is crucial in adapting to climate change, such as the use of traditional crop and livestock species with new materials.
- It is necessary to create new spaces to exchange and share knowledge on new crop varieties and technologies and to improve the marketing of agricultural products.

Many case studies deal with the issue of learning new experiences from the approaches that they or the project they describe have introduced:

- Processes of participatory learning tend to require significant resources and logistical support, but they can be made cost- and time-effective.
- It is important to organize training courses and workshops for teachers under environmental education programs when they are experts of neither natural nor environmental sciences.
- National and international policy advocacy can benefit from sharing the project experiences presented in the case studies.
- Knowledge and experiences from one country can be introduced and applied in other countries but require modification and translation into the local context due to differences in the natural environment and economic conditions.

The case studies provided the largest number of key messages with regards to “***Theme 2: Ensuring good governance and equity.***”

A number of case studies provide useful lessons for ensuring or improving *interest representation* and *organizational responsibility* of stakeholders, including local communities, particularly through institution building. More specifically, the case studies contain the following findings:

- When establishing protected areas, it is advisable to seek a broad consent among residents.
- There is a need to cultivate lasting relationships not only with local, but also with regional actors to be seen as credible, legitimate and trustworthy.
- Competing demands for natural resources can increase the need for institutional coordination of different interests in natural resource management.
- It is important to ensure appropriate resources for local councils managing natural resources such as forests and at the same time, keep transparency and accountability to prevent misuse of funds.
- Local problems should be solved by local actors. Local ownership is the only way to ensure local actors feel ownership over decisions and feel responsible after the project ends.
- Female participation in participatory learning processes should be encouraged, since women’s roles are essential in certain farming activities.
- Integrating existing informal institutions into newly crafted formal institutions is necessary to secure farming and traditional land use systems.

- Forming farmers' organizations can spearhead planning, resource generation and the implementation of community development plans.

The importance of strengthening *indigenous governance* in particular is a lesson included in a number of case studies:

- Indigenous communities' rights over resources and land should be respected at all levels and be given formal status in order to promote customary use of biological resources according to traditional norms and regulations.
- Land and natural resource laws and policies may need to be updated for effective recognition and protection of traditional tenure, governance and resource use regime of indigenous peoples.
- The weakening of traditional leadership and religious practices constitutes a challenge to the sustainable management of sacred or religious forests.

Community-based management of natural resources has also provided a rich set of experiences and lessons from around the world, particularly from community-based forest and lake management systems:

- For community-based natural resource management, it is important to develop trust between the community and authorities outside the community, to consider the behavior and attitudes of local officials, and to translate the conceptual strategy for intervention into an operational strategy.
- Community-based management allows local people to take ownership of their development process to strengthen their organizational structures, thus establishing a solid foundation for democratic processes.
- Community leaders can play an important role in community-based resource management if they use their authority to address any overexploitation of natural resources.
- Introduction of community-based natural resources management provides the opportunity to utilize natural resources, such as forests in a sustainable way, with socio-economic benefits to the community. This requires ensuring inclusiveness to participate in the community-based management institutions, the allocation of appropriate resources to these institutions, and at the same time, transparency and accountability to prevent misuse of funds.
- Community based management is thus a viable resource management approach for conserving and improving the condition of natural resources, which can also contribute to sustaining local democracy and deliver rural-development services by creating income-generating activities and establishing partnerships.

The importance of *participatory decision-making and implementation* in ensuring sustainable and multi-functional management of natural resources and ecosystems is another common lesson in a number of case studies:

- Dialogue between the local community and the governmental authorities can help to transform the informal local code of conduct – or norms of behavior – into formal management principles.
- By producing a wide range of management options for decision-making by the villagers, public administration can avoid top-down approaches with only a single option available.
- The creation of intercommunity groups can strengthen networks and generate synergies by bringing together all of the communities in a SEPLS for decision-making.
- Participation of local community members in research and monitoring work, the interpretation of results and the implementation of actions can be crucial for their longer-term success.

There are many case studies that provide lessons on coordination and cooperation beyond individual organizations by building *partnerships* among stakeholders or through *integrated management* of SEPLS:

- It is important to develop partnerships that share a common vision, since it can yield benefits for the creation and management of a newly protected area from a broad alliance of diverse stakeholders.
- The close liaison between government, an international NGO, and national civil society can be particularly successful in meeting complex requirements of activities.
- Collaboration with strong partners, including local communities and governments can build the political momentum to influence an economic development pathway.
- Local, regional and global processes, such as the development of local biodiversity strategies and action plans (LBSAPs) can benefit from the transmission of SEPLS values.
- It may be important to share project activities with other stakeholders such as village staff, extension and cooperatives, as this can provide more support and contribute to the long-term sustainability of activities.
- In many instances it is crucial for diverse stakeholders, such as farmers, local governments and the private sector, to work together to create a sustainable environment in habitats for endangered or reintroduced species.
- Partnership through co-management of SEPLS across boundaries can be useful in politically sensitive contexts.
- The process of restoration of ecosystems may require coordinated activities by different institutions to reduce the main causes of degradation, including developing strategies to effectively lower pollution levels and recuperate the productive capacity of the ecosystem and its ecological functions.
- Integrated Water Resource Management requires scaling-up efforts to consider all users for an equitable decision-making framework for allocation of water resources and land-use management at the watershed or basin level.

- The concept of well-being can connect a landscape and a lake in the mind of villagers and provide them with incentives for integrated management of both.
- The conceptual framework and strategic program of ILBM may serve as an efficient approach for managing various ecosystems and environmental resources for sustainable co-existence and mutual use through the gradual, continuous, holistic and global improvement of their governance.

The reviewed case studies provided lessons related to ***Theme 3: “Securing livelihoods and enhancing well-being”***, covering issues such as food security and poverty alleviation, and presenting options for income generation and business opportunities.

A few case studies provide key lessons on the issues of *food security and/or poverty alleviation* in their findings:

- Productive lakes can become the primary source of quality food and employment with additional economic support for those living under poverty burdens.
- Revitalization of traditional knowledge and innovations can increase the production of cash crops and the productivity of paddy fields and rotational agricultural areas.

Lessons learned on promoting *local well-being and sustainable livelihoods* are also highly related to the socio-economic dimension of SEPLS, but the number of case studies addressing these is limited:

- The diversity of terrestrial and aquatic biota is not only vital to local livelihoods, but central to the concept of well-being itself.
- The provision of financial rewards for biodiversity conservation to local people can be a successful strategy for both biodiversity conservation and contributing to local well-being.
- Financial incentive schemes that provide benefits for rural communities and for the conservation of globally threatened species have the potential to be replicated if they are adapted to local contexts and conditions.

The creation of opportunities for local community members to engage in activities to generate *additional or alternative income* or to *set up a business* is shared by a number of case studies.

- Alternative income-generating activities to intensive forest use can include private plantations and promotion of non-timber forest products.
- High value-added farm and livestock products can lead to new industries in rural areas.
- Depending on the local circumstances, the cultivation of medicinal plants on farmland can be significantly more profitable compared with conventional crop cultivation.
- Bamboo growing for traditional and modern uses can have the triple benefits of raising farmer incomes, sequestering carbon and avoiding deforestation.

- Diversifying cash crops can secure stable and sustainable source of income that is not susceptible to climate or market prices.
- A high level of environmental conscience enables the direct payment of high prices toward farm businesses that support rural landscape and biodiversity.
- Initiatives owned by small communities can attract attention and business success when done collectively.

There are many lessons learned on ***Theme 4: “Conserving landscape/seascape diversity and ecosystems”***.

A number of significant case study lessons are related to *biodiversity conservation* as one important aspect of ecosystem conservation:

- Performing scientific environmental research can clarify the impact of nature-friendly agricultural practices on the biodiversity of a region.
- Combining strategies to improve the economic well-being of local communities with biodiversity conservation strategies can make conservation more effective. It may be useful to link financial rewards for those involved directly to the conservation outcome.
- Biodiversity data collection and farm mapping can benefit farmers, as these methods can assist farmers in farm management.
- Traditional land use is a sustainable pathway for the protection of genetic diversity of crop plants and the diversity of food plants available from the wild.

Recognition of the *values of landscapes* and the need for their *conservation* or *revitalization* is common to the lessons learned by several case studies:

- The persistence of traditional landscapes can provide an opportunity to identify, conserve and value traditional agrarian landscape elements.
- To preserve the presence of picturesque landscapes, it is important for farmers to recognize their aesthetic value and to continue to manage and cultivate their land.
- It may be important to reintroduce human interventions for landscape management purposes and the conservation of the natural environment as well as the historical and cultural heritage.
- Large-scale forestry conversions for teak, sugar plantations and other uses is expected to cause irreparable landscape changes, destroy resident biodiversity and impact the lifestyle of local communities.
- The provision of incentives to local people for conservation, through conservation agreements, grants linked to natural resource stewardship, or nature-based enterprises such as ecotourism, can be a key factor in successful landscape conservation.
- Linking agricultural use and economic incentives to nature conservation contributes to maintain traditional landscapes such as meadows.

- When creating a new type of protected area, it is advisable to first demonstrate that securing ecosystem services benefits local people in specific places and then to scale-up those successes for broad-level impact.
- The combination of a multi-stakeholder participatory process and the landscape approach in light of the Satoyama Initiative concept can help create new kinds of protected areas.

Several case studies draw important lessons on the *restoration of nature* in SEPLS, including their biodiversity:

- Ecosystem restoration and recognition of ancestral knowledge and skills are equally important for the recovery of endangered species.
- The reintroduction of species may require both the necessary funding and a multidisciplinary approach involving a team of persons drawn from a variety of backgrounds.
- The restoration of degraded ecosystems and the protection of their biodiversity may require alternative approaches to raise the standard of living while reducing human disturbances.
- An integrated approach can improve forest ecosystems through soil conservation work, tree planting, pest control, fire prevention efforts, and payment for environmental services for involved communities.
- By sharing tree seeds amongst themselves, villagers can increase diversity in their village through reforestation and growing trees in home gardens.

The case studies provided key lessons related to ***Theme 5: “The promotion of sustainable use of biodiversity”***, including activities to ensure sustainable resource use, address overuse of wild flora and fauna and introduce cyclic use of natural resources:

- For the sustainable use and management of natural resources, it is important that local people pay attention to sustain the variety of plants in woodlands around the dwellings.
- Sustainable farming may also be possible at a large scale if measures are undertaken to reduce the impacts of monoculture and use of pesticides and other agrochemicals.
- The domestication of medicinal plant species can enhance the natural-resource base in the forest as it helps to reduce overexploitation and balance natural ecosystems.
- The introduction of community-based management in partnership with local authorities can lead to a sustainable use of a SEPLS’s biodiversity.
- There are various options to control overuse, such as tourism or fruit crop development, but these options should be developed and applied by local communities.
- Establishing the cyclical use of natural resources requires a systematic and appropriate management framework unique to the local context.

- Effective utilization of natural resources should be promoted, especially focusing on the cyclic use of farm residues.
- It is necessary to preserve traditional technologies for sustainable resource use and develop new technologies to promote cyclic use of natural resources.
- Cyclic use needs to be in line with ecosystem functions and human activity in harmony through material flow within the range of an environmental capacity and natural resilience.

The lessons learned on approaches and methods under **Theme 6: “Empowering stakeholders”** focus on *community mobilization* and *financial, institutional and human capacity building*:

- Healers, key farmers and local authorities can take the initiative and play an important role in mobilizing the community
- Constant contact with the communities is vital and should be a part of all community-based natural resource management projects.
- Long-term financial sustainability builds on the long-term financial capacity of local people such as through income-generating activities under conservation agreements or by supporting nature-based enterprises such as ecotourism.
- The formation of community forest user groups and their engagement in forest management can create highly effective and inclusive institutions by utilizing available resources for both subsistence and commercial purposes.
- Building up the capacity of local communities and their enterprises to plan, utilize, monitor and control their forest resources is critical to reducing illegal logging and associated trade.
- Combining research with an active environmental education program targeting local farmers can slowly change their attitudes.
- Capacity building has to occur both at the personal and institutional levels, not only at the field level but also within a university campus, i.e. in the organization itself.

The lessons learned on **Theme 7: “Addressing emerging issues”** are particularly related to *climate change mitigation and adaptation*, but also refer to *waste management and reduction of chemical fertilizer use*.

- Maintaining and increasing agrobiodiversity is important for reducing greenhouse gas emissions.
- There is a need to involve farmers in developing and implementing climate change mitigation and adaptation strategies through concrete activities.
- As an adaptation measure, “conservation agriculture” (or “conservation tillage”) is ideal for countries that experience unpredictable rainfall events and patterns, as well as arid areas with light, alkaline soils.
- It is important to understand the link between community empowerment and adaptation to climate change in its social, cultural and political dimensions. There is also a need to develop indicators of adaptation, adaptability and resilience that help

identify what contribution agrobiodiversity can make and where it is likely to be most useful.

- Indigenous and traditional agricultural communities need to cope with climate change in different ways, and at different levels.
- Organic waste from households, communities and institutions can be effectively treated, reduced, reused and recycled for human and environmental benefits.
- The use of chemical fertilizer can be reduced through traditional cultivation practices and use of alternate methods like integrated pest management. A printed copy of a map of their farm helps farmers make decisions on the application of agrochemicals and fertilizers and planting of shade trees, which contributes to biodiversity conservation.

4.2 General suggestions for improving the framework for collecting IPSI case studies

The review of the general characteristics of the IPSI case studies, based on the categories listed in the classification table as well as lessons extracted and organized by themes, has shown that the activities of IPSI members are truly diverse and touch upon a broad range of issues facing SEPLS. This indicates that there is a high potential for the collective body of knowledge possessed by the IPSI members at different levels and for different purposes to be useful for potential readers and other organizations working on SEPLS in comparable contexts. To further promote the dissemination of the knowledge generated and lessons learned by the case studies, the following points should be addressed:

- The present report reviewed 80 case studies that had been submitted by 64 organizations (53 IPSI members and 11 non-members) to the IPSI Secretariat by February 2015. Considering the number of IPSI members (167 organizations), measures should be adopted to increase the number of submissions.
- Among the implementing organizations of the IPSI case studies, which most often are the authors' organizations, a bias was observed towards universities and research institutes engaged in field-based activities. This may be attributed to the fact that these types of organizations have more expertise in producing research and activity reports, and thus have submitted the largest portion of the current set of IPSI case studies. In order to accumulate a body of knowledge within IPSI that is representative of the wide range of members, measures need to be explored to encourage the sharing of knowledge and expertise present among other types of members.
- The review also found that the current case study guidelines could be revised in a way that they encourage and facilitate the submission of wider range of case studies and higher number of organizations. While the revised case study guidelines would

need to accommodate diversity in terms of scope, components and format, some consistency should be kept for readability and for extracting useful knowledge and information in a more efficient manner. In addition, further enrichment of information and analysis would be desirable in order to provide knowledge and lessons that can be useful for potential readers and other organizations working at the local level.

- In particular, a request for IPSI case studies to outline the lessons learned through the implementation of their activities would allow for these lessons to be used in the future by potential readers as a reference in conducting their own activities.
- Other types of information that could be recorded within IPSI case studies include project funders and partners as a useful information source for IPSI member organizations in identifying future donors and match-making opportunities.
- In addition to the revision of the case study guidelines, consideration should also be given to establishing a framework to compile more thematically focused, informative and relevant knowledge in a systematic manner. One way of doing this would be to regularly produce a publication of higher-quality papers on a specific thematic issue.

Annex 1. List of Case Studies

No	Case Study Title	Organization	URL (http://satoyama-initiative.org/...)
1	Creation and Management of Diverse Secondary Forest in Central Sulawesi, Indonesia	Ministry of the Environment, Japan; Japan Wildlife Research Center	/en/creation-and-management-of-diverse-secondary-forest-in-central-sulawesi/
2	The Ayllu System of the Potato Park, Cusco, Peru	UNU-IAS	/en/the-ayllu-system-of-the-potato-park/
3	Use and Management of “Muyong” in Ifugao Province, Northern Luzon Island in the Philippines	Ministry of the Environment, Japan; Japan Wildlife Research Center	/en/use-and-management-of-muyong-in-ifugao-province-northern-luzon-island/
4	Community Forestry in Thailand	Ministry of the Environment, Japan; Japan Wildlife Research Center	/en/community-forestry-in-thailand/
5	Land Use and Natural Resource Utilization and Management in Kampong Cham, Cambodia	UNU-IAS	/en/land-use-and-natural-resource-utilization-and-management-in-kampong-cham-cambodia/
6	Production of new industries of agricultural mountain village in Kyotango City, Kyoto, Japan	Ministry of the Environment, Japan; PREC Institute Inc.	/en/production-of-new-industries-of-agricultural-mountain-village-in-kyotango/
7	Land Use and Biodiversity Patterns on Chacras in Northeast Argentina	Ministry of the Environment, Japan; Japan Wildlife Research Center	/en/land-use-and-biodiversity-patterns-on-chacras-in-northeast-argentina/
8	Landscape Management in Germany	Ministry of the Environment, Japan; Japan Wildlife Research Center	/en/landscape-management-in-germany/
9	The Maasai’s shifting modes of subsistence	Ministry of the Environment, Japan; Japan Wildlife Research Center	/en/the-maaisis-shifting-modes-of-subsistence/
10	Living by Utilizing Various Modified Natural Resources in the Solomon Islands	Ministry of the Environment, Japan; Japan Wildlife Research Center	/en/living-by-utilizing-various-modified-natural-resources-in-the-solomon-islands/
11	The sustainable use and biodiversity of paddies fields of Louisiana	Ministry of the Environment, Japan; Japan Wildlife Research Center	/en/the-sustainable-use-and-biodiversity-of-paddies-fields-of-louisiana/
12	Town revitalization making the most of natural landscape and traditions of Kanakura Wajima City, Ishikawa Prefecture, Japan	Ministry of the Environment, Japan; PREC Institute Inc.	/en/town-revitalization-making-the-most-of-natural-landscape-and-traditions-of-kanakura/

13	Homegardens: sustainable land use systems in Wayanad, Kerala, India	Dr Santhoshkumar	/en/homegardens-sustainable-land-use-systems-in-wayanad-kerala-india/
14	Forest management through community-based forest enterprises in Ixtlan de Juarez, Oaxaca, Mexico	UNU-IAS	/en/forest_management_through_community-based_forest_enterprises_in_ixtlan_de_juarez/
15	Conservation and management of agricultural land by traditional methods in Machida City, Tokyo, Japan	Ministry of the Environment, Japan; PREC Institute Inc.	/en/conservation_and_management_of_agricultural_land_by_traditional_methods_in_machida/
16	Nature-Friendly Agriculture in the State of Queensland, Australia	Ministry of the Environment, Japan; Japan Wildlife Research Center	/en/nature-friendly_agriculture_in_the_state_of_queensland/
17	Small Scale Catchment Management in Malawi	UNU-IAS	/en/small-scale-catchment-management-in-malawi/
18	The Agras field system as a cultural landscape in Galicia (Spain)	Univeristy of VIGO (UVIGO; Universidad de Vigo and Universidad de Santiago de Compostela)	/en/the-agras-field-system-as-a-cultural-landscape-in-galicia-spain/
19	Abrolhos seascape, a field demonstration model	Conservation International	/en/abrolhos-seascape-a-field-demonstration-model-conservation-international-brazil/
20	Natural Resource Management in the Critical Habitat of Western Siem Pang	BirdLife International	/en/natural-resource-management-in-the-critical-habitat-of-western-siem-pang-birdlife-international/
21	Promoting co-management of socio-ecological landscapes in flood dependent agroforestry, pastoral and fishery systems of eastwards flowing rivers of Eastern Africa through scientific research and indigenous knowledge	Kenya Wetlands Biodiversity Research Team (KENWEB)	/en/promoting-co-management-of-socio-ecological-landscapes-in-flood-dependent-agroforestry-pastoral-and-fishery-systems-of-eastwards-flowing-rivers-of-eastern-africa-through-scientific-research-and-indig/
22	Community-based adapation in Namibia – a tool to enhance conservation tillage practices	United Nations Development Programme (UNDP)	/en/community-based-adapatation-in-namibia-a-tool-to-enhance-conservation-tillage-practices-undp/
23	Ankeniheny-Zahamena Corridor, a field demonstration model	Conservation International	/en/ankeniheny-zahamena-corridor-a-field-demonstration-model-conservation-international-madagascar/
24	Conserving biodiversity by utilizing wood thinned from forests as biomass fuel for power generation (Sustainable Utilization of Biological Resources)	Nobeoka City, Asahi Kasei Corporation	/en/conserving-biodiversity-by-utilizing-wood-thinned-from-forests-as-biomass-fuel-for-power-generation/
25	Mainstreaming satoyama in research, education and regional collaboration towards the revitalization of Noto Peninsula	Kanazawa University	/en/mainstreaming-satoyama-in-research-education-and-regional-collaboration-towards-the-revitalization-of-noto-peninsula/

26	Facilitating stakeholders and community involvement in a Satoyama landscape	Nomi Satoyama Conservation Society (NSCS)	/en/facilitating-stakeholders-and-community-involvement-in-a-satoyama-landscape/
27	Role and involvement of the commune council in community forestry activities in Domnak Neak Tathmor Puan	Ministry of Environment, Cambodia, Community Forestry Research Project (CFRP), CBNRM Initiative, WWF	/en/role-and-involvement-of-the-commune-council-in-community-forestry-activities-in-domnak-neak-tathmor-puan/
28	Productive bamboo landscapes of Western Zhejiang	International Network for Bamboo and Rattan (INBAR)	/en/productive-bamboo-landscapes-of-western-zhejiang/
29	Integrating scientific and traditional knowledge for co-management of socio-ecological landscapes for the well-being of communities in the flood-dependent lower floodplain agroforestry, pastoral and fishery systems of the eastwards flowing rivers of Eastern Africa	Kenya Wetlands Biodiversity Research team (KENWEB)	/en/integrating-scientific-and-traditional-knowledge-for-co-management-of-socio-ecological-landscapes-for-the-well-being-of-communities-in-the-flood-dependent-lower-floodplain-agroforestry-pastoral-and-f/
30	Monitoring the Biodiversity of Tsunami Affected Areas in Tohoku	Earthwatch-Institute, Japan	/en/monitoring-the-biodiversity-of-tsunami-affected-areas-in-tohoku/
31	Passerano Marmorito's bio-cultural landscape	International Agency for the Protection of Biocultural Landscapes and for a New Rurality (AGER)	/en/passerano-marmoritos-bio-cultural-landscape/
32	Working for the Living in Harmony with Nature, Aichi's Efforts toward Ecosystem Networking	Aichi Prefectural Government	/en/working-for-the-living-in-harmony-with-nature-aichis-efforts-toward-ecosystem-networking/
33	Waterbird conservation promotes important energy flow between rice paddies and nearby Important Bird Areas in Cuba	Birdlife International	/en/waterbird-conservation-promotes-important-energy-flow-between-rice-paddies-and-nearby-important-bird-areas-in-cuba/
34	A review of policy actions for more resilient land management in the upper watersheds of Davao	Hydrology for the Environment, Life and Policy(HELP) Davao Network	/en/a-review-of-policy-actions-for-more-resilient-land-management-in-the-upper-watersheds-of-davao/
35	Reintroduction Project of the Oriental White Stork for Coexistence with Humans in Satoyama areas, Hyogo, Japan	Hyogo Prefectural Government	/en/reintroduction-project-of-the-oriental-white-stork-for-coexistence-with-humans-in-satoyama-areas-hyogo-japan/
36	Training for Capacity Development on Biodiversity conservation and rural development	Japan International Cooperation Agency (JICA)	/en/training-for-capacity-development-on-biodiversity-conservation-and-rural-development/
37	Biodiversity Conservation through Domestication of High Value Medicinal and Aromatic Plants in Mountain Ecological Landscapes of Nepal	Kathmandu Forestry College	/en/biodiversity-conservation-through-domestication-of-high-value-medicinal-and-aromatic-plants-in-mountain-ecological-landscapes-of-nepal/

38	Identification of potential benefits of urbanization for degraded grasslands in central Hunshandak Sandland, China	Minzu University	/en/identification-of-potential-benefits-of-urbanization-for-degraded-grasslands-in-central-hunshandak-sandland-china/
39	Community Forestry in Nepal	Ministry of Forests and Soil Conservation, Nepal	/en/community-forestry-in-nepal-shankar-adhikari-forest-officer-district-forest-office-lalitpur-nepal/
40	The use of Agrobiodiversity by indigenous and traditional agricultural communities in: Adapting to climate change	Platform for Agrobiodiversity Research	/en/the-use-of-agrobiodiversity-by-indigenous-and-traditional-agricultural-communities-in-adapting-to-climate-change/
41	Local livelihood in the Lower Songkhram Basin, Thailand	Ministry of Natural and Resources and Environment, Thailand	/en/local-livelihood-in-the-lower-songkhram-basin-thailand/
42	Benin's experience in the management of sacred forests for biodiversity conservation	ONG Cercle pour la Sauvegarde des Ressources Naturelles (Ce.Sa.Re.N ONG)	/en/benins-experience-in-the-management-of-sacred-forests-for-biodiversity-conservation/
43	On-Farm Conservation of Plant Genetic Resources: A Case Study from Wayanad District of Kerala, India	M S Swaminathan Research Foundation	/en/on-farm-conservation-of-plant-genetic-resources-a-case-study-from-wayanad-district-of-kerala-india/
44	The scattered fruit tree meadows of the swabian alb	Ecosystem Services Research Group, Berlin-Brandenburg Academy of Sciences and Humanities (BBAW)	/en/the-scattered-fruit-tree-meadows-of-the-swabian-alb/
45	Tropical forests for local people	International Tropical Timber Organization (ITTO)	/en/tropical-forests-for-local-people/
46	National Action Plan for the Conservation and Sustainable Use of Socio-ecological Production Landscapes (Satochi-satoyama)	Ministry of the Environment, Japan	/en/national-action-plan-for-the-conservation-and-sustainable-use-of-socio-ecological-production-landscapes-satochi-satoyama/
47	Multi-Stakeholders' Efforts for the Sustainable Management of Tadalac Lake, the Philippines	International Lake Environment Committee Foundation (ILEC)	/en/multi-stakeholders-efforts-for-the-sustainable-management-of-tadalac-lake-the-philippines-2/
48	Integrating community development with the management of grasslands and wetlands at Ke'erqin nature reserve	Renmin University of China	/en/integrating-community-development-with-the-management-of-grasslands-and-wetlands-at-keerqin-nature-reserve/
49	Building and Supporting Resilient Biocultural Territories in the Face of Climate Change	Indigenous People's Biocultural Climate Change Assessment Initiative (IPCCA)	/en/building-and-supporting-resilient-biocultural-territories-in-the-face-of-climate-change/
50	Utilization of natural pastures in Huascarán National Park by local Andean 'pasture users' and 'campesino communities'	Huascarán National Park, National Service of Protected Natural Areas (SERNANP)	/en/utilization-of-natural-pastures-in-the-huascarán-national-park-by-users-and-rural-communities/

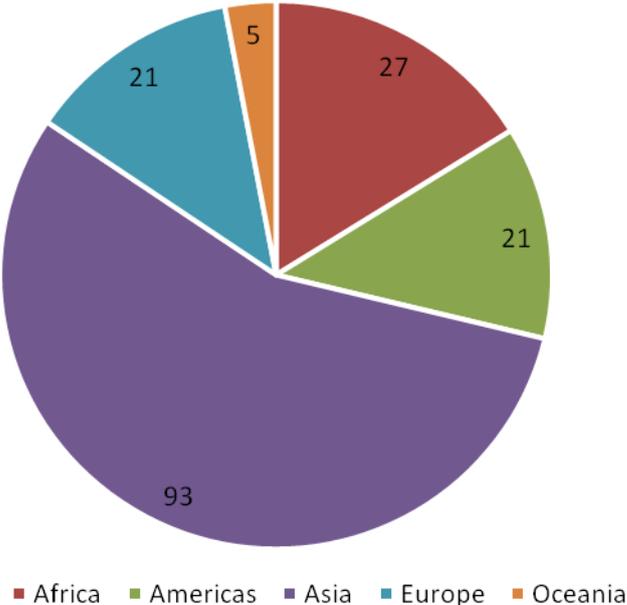
51	Planting seeds for rooted change, towards community rights in flourishing forests	Culture Identity and Resources Use Management (CIRUM)	/en/planting-seeds-for-rooted-change-towards-community-rights-in-flourishing-forests/
52	Role of Traditional Knowledge in Strengthening Socio-ecological Production Landscapes	Indigenous Peoples' International Centre for Policy Research and Education (TEBTEBBA; Montanosa Research, Development Center- Tebtebba Foundation)	/en/role-of-traditional-knowledge-in-strengthening-socio-ecological-production-landscapes/
53	Integrated Lake Basin Management (ILBM), Impacts on Biodiversity and Child Malnutrition: A Case Study of Tribal Belt in Western Part of India	International Lake Environment Committee Foundation (ILEC)	/en/integrated-lake-basin-management-ilbm-impacts-on-biodiversity-and-child-malnutrition-a-case-study-of-tribal-belt-in-western-part-of-india/
54	Ujjani Reservoir: People's Initiative for Protection of Water Quality	International Lake Environment Committee Foundation (ILEC) and Shrishti Eco-Research Institute	/en/ujjani-reservoir-peoples-initiative-for-protection-of-water-quality/
55	Governance at Community Level for Conserving Himalayan Lake Rupa in Kaski District of Nepal	International Lake Environment Committee Foundation (ILEC)	/en/governance-at-community-level-for-conserving-himalayan-lake-rupa-in-kaski-district-of-nepal/
56	Community Forest Restoration for the Integrated Management of Lake Chapala Basin	International Lake Environment Committee Foundation (ILEC), and Corazon de la Tierra A.C. (Heart of the Earth), Mexico	/en/community-forest-restoration-for-the-integrated-management-of-lake-chapala-basin/
57	Assessment of Lentic-Lotic Basin Biodiversity Improvement through a Cyclic Platform Process of Management	International Lake Environment Committee Foundation (ILEC)	/en/assessment-of-lentic-lotic-basin-biodiversity-improvement-through-a-cyclic-platform-process-of-management/
58	Land use change in Uganda's drylands, impacts, and opportunities for enhancing livelihood sustainability	Nature and Livelihoods	/en/land-use-change-in-ugandas-drylands-impacts-and-opportunities-for-enhancing-livelihood-sustainability/
59	Landscape conservation in the Black Forest, Germany	German Association for Landcare / Landcare Association Central Black Forest	/en/landscape-conservation-in-the-black-forest-germany/
60	Socio-ecological production landscapes in Cuchillas del Toa Biosphere Reserve	Bioersity International, Institute of Fundamental Researches on Tropical Agriculture (INIFAT)	/en/socio-ecological-production-landscapes-in-cuchillas-del-toa-biosphere-reserve/
61	Observation of functioning of Kanchenjunga Conservation Area (KCA): the region's first community owned conservation area	Wildlife Watch Group (WWG)	/en/observation-of-functioning-of-kanchenjunga-conservation-area-kca-the-regions-first-community-owned-conservation-area/

62	Community Development to Live in Harmony with the Oriental White Stork in Toyooka City, Hyogo, Japan	Toyooka City, Japan	/en/toyooka-city/
63	Restoration of Community Deforested Forests for Mitigation of Negative Effects of Climate Change Mpigi-Uganda	Civil Society Organizations' Network for sustainable agriculture and Environment in East Africa (CISONET)	/en/restoration-of-community-deforested-forests-for-mitigation-of-negative-effects-of-climate-change-mpigi-uganda/
64	A story about biodiversity "Cheburashka walking in the woods"	Cheburashka Project (Frontier Works. Inc and other affiliated companies)	/en/a-story-about-biodiversity-cheburashka-walking-in-the-woods/
65	Outline of Wakasa Town's (Fukui Prefecture) Activities Relating to Socio-Ecological Production Landscapes (SEPLS)	Wakasa City	/en/outline-of-wakasa-towns-fukui-prefecture-activities/
66	Restoration Satoyama Landscapes in Three Regions of Cambodia: Activities and Lessons Learned	Institute of Environment Rehabilitation and Conservation (ERECON),	/en/restoration-satoyama-landscapes-in-three-regions-of-cambodia-activities-and-lessons-learned/
67	Diversifying forage composition to provide options for farmers to improve milk production and quality and livelihood	Integrated Organic Farming Systems Research Centre (IORC)	/en/diversifying-forage-composition-to-improve-milk-production-and-quality-through-participatory-learning/
68	Empowering Young Successors in the Management of Biodiversity and Traditional Landscapes	University of the Philippines Open University (UPOU)	
69	Participatory, Learning and Action (PLA) Project for Sustainable Agriculture and Natural Resources Management in Lao PDR"	Overseas Environmental Cooperation Center (OECC)	/en/participatory-learning-and-action-pla-project-for-sustainable-agriculture-and-natural-resources-management-in-lao-pdr/
70	The Cyprus Buffer Zone as a Socio-Ecological Landscape	University of Cyprus	/en/the-cyprus-buffer-zone-as-a-socio-ecological-landscape/
71	Conserving a Suite of Cambodia's Highly Threatened Bird Species	Critical Ecosystem Partnership Fund (CEPF) & Wildlife Conservation Society (WCS)	/en/conserving-a-suite-of-cambodias-highly-threatened-bird-species/
72	A grassroots programme to support a traditional Eastern European community managing traditional High Nature Value landscapes in the Carpathians	Pogany-Havas Association	/en/a-grassroots-programme-to-support-a-traditional-eastern-european-community-managing-traditional-high-nature-value-landscapes-in-the-carpathians/
73	Collaborative Planning and Management of Socio-Ecological Production Landscapes: a Rice Paddy Cultural Landscape Conservation in an Indigenous Community, Taiwan	National Dong-Hwa University	/en/collaborative-planning-and-management-of-socio-ecological-production-landscapes-a-rice-paddy-cultural-landscape-conservation-in-an-indigenous-community-taiwan/

74	Sustainable Agro and Community forestry in localities around Ayubia National Park, Western Himalayas, Khyber Pakhtunkhwa (KPK Province), Pakistan	Centre for Integrated Mountain Research (CIMR), Punjab University, Lahore-Pakistan	/en/sustainable-agro-and-community-forestry-in-localities-around-ayubia-national-park-western-himalayas-khyber-pakhtunkhwa-kpk-province-pakistan/
75	India Organic Waste Management Programme (IOWMP)	IORA Ecological Solutions	/en/india-organic-waste-management-programme-iowmp/
76	Recovery of Mouthless Crab (<i>Cardisoma crassum</i>) Populations in Mangrove Forests of the Chone River Estuary (Ecuador)	Foundation for Research and Social Development	/en/recovery-of-mouthless-crab-cardisoma-crassum-populations-in-mangrove-forests-of-the-chone-river-estuary-ecuador/
77	Mainstreaming Biodiversity into the Cocoa Growing Landscape in the Kakum Conservation Area in Ghana	Conservation Alliance	/en/mainstreaming-biodiversity-into-the-cocoa-growing-landscape-in-the-kakum-conservation-area-in-ghana/
78	Resuscitating the Sundarbans: Customary Use of Biodiversity & Traditional Cultural Practices in Bangladesh	Unnayan Onneshan 2) Bangladesh Environmental Lawyers Association (BELA) Forest People Programme Nijera kori	/en/resuscitating-the-sundarbans-customary-use-of-biodiversity-traditional-cultural-practices-in-bangladesh/
79	Indigenous Knowledge, Customary Use of natural Resources and Sustainable Biodiversity Management: Case Study of Hmong and Karen Communities in Thailand	Inter-Mountain Peoples' Education and Culture in Thailand Association (IMPECT) Forest Peoples Programme	/en/indigenous-knowledge-customary-use-of-natural-resources-and-sustainable-biodiversity-management-case-study-of-hmong-and-karen-communities-in-thailand/
80	Wa Wiizi – Wa Kaduzu: Our Territory – Our Custom	South Central People's Development Organisation Forest Peoples Programme	/en/wa-wiizi-wa-kaduzu-our-territory-our-custom/

Annex 2. Regional Distribution of IPSI member organizations' headquarters

Regional distribution of IPSI member organization
(place of headquarters office)



Annex 3. Aichi Biodiversity Targets

Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society	
1	By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.
2	By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.
3	By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.
4	By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use	
5	By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.
6	By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.
7	By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.
8	By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.
9	By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

10	By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity	
11	By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.
12	By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.
13	By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services	
14	By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.
15	By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.
16	By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building	
17	By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

18	By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.
19	By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.
20	By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.