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# Research on Development and Implementation of National Biodiversity Strategy and Action Plans (NBSAPs) Toward Realization of Societies in Harmony with Nature

## REPORT

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# Foreword

Since the adoption of the Convention on Biological Diversity (CBD) in 1992, biodiversity conservation efforts through creating protected areas have seen steady progress, with a global coverage of protected areas increased by 2016 to around 14.7% of territorial land and inland water (UNEP-WCMC and IUCN, 2016). While these efforts continue to expand, there is still, unfortunately, significant ongoing loss of biodiversity. Thus there is increasing awareness and interest about the important role of sustainable management of non-protected areas in achieving global conservation goals, including the CBD's 2050 Vision of "Living in Harmony with Nature" and Aichi Biodiversity Targets. In light of mounting interest in biodiversity conservation of non-conventional protected areas, the 13<sup>th</sup> meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP 13) held in Cancun, Mexico accelerated discussions on mainstreaming biodiversity into all relevant sectors, including agriculture, forestry, fishery, and tourism. Based on these discussions, CBD COP 13 adopted the Cancun Declaration on Mainstreaming the Conservation and Sustainable Use of Biodiversity for Well-being.

Integrated approaches to management of production landscapes and seascapes have also been identified for their potential in mainstreaming biodiversity, and we promote the revitalization and sustainable management of production landscapes and seascapes through implementation of the Satoyama Initiative. In close collaboration with the CBD Secretariat, we have conducted a two-year research project from 2016 to 2018 to review and analyze existing National Biodiversity Strategies and Action Plans (NBSAPs), examining how integrated approaches in production landscapes and seascapes are incorporated into NBSAPs, and how countries implement NBSAPs, other relevant policies and projects by conducting literature review and analysis, and holding the international workshop. This research project, in collaboration with the International Partnerships for Satoyama Initiative (IPSI), aims to identify experiences and lessons learned and key messages to be shared with CBD parties to support future NBSAP revisions and policy development.

We are confident that the research results will be useful for CBD parties, particularly in compiling and evaluating progress at the national level toward achievement of the Aichi Targets, and in planning the post-2020 Global Diversity framework. In addition, the results also provide insight on how to integrate the Aichi Biodiversity Targets with achievement of Sustainable Development Goals (SDGs).

We would like to express our appreciation to the CBD Secretariat for their contribution to this research project, and to the Ministry of Environment of Japan for their support of this research project. Finally, we would like to express to the international workshop participants from seven governments—Cambodia, Colombia, Estonia, Ethiopia, Japan, Mexico, and South Africa—our appreciation for their generous contributions to the fruitful discussion and the useful information they provided on their good practices in implementing NBSAPs.

We hope that this report inspires your interest in integrated approaches to management of production landscapes and seascapes and encourages you to explore implementing these approaches under NBSAPs.



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# 1. Objectives of the Research

Human livelihoods and well-being depend greatly on the natural resources found in “production landscapes and seascapes”, which cover a large area of the world and are predominantly shaped by high levels of human intervention involving both productive and intangible, cultural, aesthetic, or educational activities. This intervention relies on the sustainable use, conservation and augmentation of biodiversity and all types of natural resources. In recognition of these linkages between human beings and nature, integrated approaches to the management of natural resources in production landscapes and seascapes, that include socio-economic aspects as well as biodiversity conservation, have gained attention for their contributions to sustainable human livelihoods and well-being.

In addition, there has been increasing focus in recent years on the mainstreaming of biodiversity into sectors including agriculture, forestry, fisheries and tourism. The high-level segment of the thirteenth meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP 13) held in Cancun, Mexico in December 2016, adopted the “Cancun Declaration on Mainstreaming the Conservation and Sustainable Use of Biodiversity for Well-Being”, which was welcomed in CBD COP Decision XIII/3. In the Cancun Declaration, CBD Parties committed to update and implement their National Biodiversity Strategies and Action Plans (NBSAPs) “to strengthen the mainstreaming of biological diversity.”

Integrated approaches to the management of production landscapes and seascapes, including socio-cultural aspects as well as biodiversity, are expected to contribute to mainstreaming of biodiversity into relevant production sectors, as well as to achieving relevant global and national biodiversity targets such as Aichi Biodiversity Targets (4, 6, 7, 11 and 14 among others). Concepts related to integrated landscape approaches include “cultural landscapes”, “Globally Important Agricultural Heritage Systems (GIAHS)” and “socio-ecological production landscapes and seascapes (SEPLS)” as developed under the Satoyama Initiative. Integrated landscape approaches, however, have not yet been widely incorporated into policies in many countries at this stage.

Since 2016, the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS) and the University of Tokyo Integrated Research System for Sustainability Science (UT-IR3S) in cooperation with the CBD Secretariat have been reviewing and analysing NBSAPs in this context, focusing in particular on integrated management approaches for landscapes and seascapes that sustain human production activities.

This research project (*Research on development and implementation of National Biodiversity Strategy and Action Plans (NBSAPs) toward realization of societies in harmony with nature*) was started with the review of related concepts of integrated approaches to the management of production landscapes (and seascapes), then analyzed NBSAPs, the principle instruments for national biodiversity policies, focusing on how concepts

and measures related to integrated approaches in production landscapes are incorporated and how they are to be implemented. Following which, based on the document analysis, an international workshop with several Parties was held, where their experiences on incorporating the concepts into NBSAPs and implementations were discussed and shared. By examining the current situation and causes behind, the study tried to provide useful knowledge for future NBSAP development and implementation.

## 2. Executive Summary

Integrated approaches in production landscapes and seascapes are expected to contribute to mainstreaming biodiversity and achieving relevant global and national biodiversity targets, such as Aichi Biodiversity Targets; however, at this stage, they have not yet been widely incorporated into national policies in many countries, in particular updated NBSAPs.

This research project first conducted a literature review of concepts relating to integrated approaches in production landscapes and seascapes, followed by a general review and an in-depth document analysis of NBSAPs, the principal policy instruments for national-level biodiversity policy, focusing on how concepts and measures concerning integrated approaches in production landscapes and seascapes are incorporated and implemented. The results of this study were discussed during an international workshop involving seven countries to further explore the challenges and practicalities concerning these concepts' incorporation into NBSAPs and implementation. The research objective was to provide useful knowledge and practical policy recommendations for future NBSAP development and implementation, based on consideration of the actual situation and challenges on the ground.

### (1) Summary of key findings

Through the literature review and NBSAP document analyses, we found that multiple concepts relate to integrated approaches to management of production landscapes and seascapes, such as cultural landscapes, GIAHS, the landscape approach, SEPLS, and related traditional management. About half of the NBSAPs reviewed referred to these concepts. Those that did often described such concepts in the “strategies,” “targets,” and “action plan” chapters of the NBSAP; the concepts co-occurred frequently with biodiversity mainstreaming and were well related to ecosystem services. The concepts were most closely related to Aichi Biodiversity Target 4, followed by Targets 14, 15, 11, 5, and 7. Some regional differences and divergence between the NBSAPs and the ground-level projects were also found.

Following the NBSAP document analysis, an international workshop was held in January 2018 at the United Nations University Headquarters in Tokyo, Japan, to learn more about countries' experiences incorporating integrated approaches in production landscapes and seascapes into NBSAPs, as well as their actual implementation of related measures. Via discussion of these experiences and lessons learned, the workshop generated useful findings and recommendations for future NBSAP development and implementation. The participants also expressed a number of expectations of international bodies, platforms, and networks, such as CBD or IPSI, to take advantage of their global convening authority over countries and agencies (see Table 1):

**Table 1. International and national cooperation in integration and implementation**

International level	National level
<p>Support for national-level implementation by international bodies:</p> <ul style="list-style-type: none"> <li>● Enabling common understanding</li> <li>● Customized know-how for implementation</li> <li>● Information-sharing mechanisms</li> <li>● Target setting</li> <li>● Facilitating trans-boundary approaches</li> </ul>	<p>Cooperation between different ministries, sectors, and cooperation between national, sub-national and local levels:</p> <ul style="list-style-type: none"> <li>● Concept integration</li> <li>● Institutional cooperation               <ul style="list-style-type: none"> <li>• Horizontal</li> <li>• Vertical</li> </ul> </li> <li>● Communication and education               <ul style="list-style-type: none"> <li>• Involving local communities</li> <li>• Science-policy interface</li> <li>• Environmental accounting</li> <li>• Assessment and evaluation</li> </ul> </li> <li>● Incentives for stakeholders               <ul style="list-style-type: none"> <li>• Governments</li> <li>• Local communities and practitioners</li> </ul> </li> </ul>

## (2) Conclusions and Way Forward

The literature review of related concepts and the analysis of NBSAPs provided a comprehensive understanding of the current state of incorporation and implementation of integrated approaches to management of landscapes and seascapes in the NBSAPs of most CBD parties. The subsequent workshop offered the opportunity for a number of CBD parties from different regions to exchange experiences and lessons learned regarding incorporation and implementation of integrated approaches to production landscapes and seascapes in NBSAPs, to assess their contributions toward achieving relevant Aichi Biodiversity Targets, and to discuss possible ways forward at different levels, in particular their needs for support. The workshop was intended to initiate a process of exchanging knowledge and experience in this way, and to serve as a basis for future cooperation to enhance capacity building and mutual learning.

Building on this research project, and in particular the needs for support identified through the workshop, UNU-IAS and UT-IR3S are developing plans to further support parties that have implemented or show interest in implementing integrated approaches in production landscapes and seascapes, including development of relevant supporting materials and tools. These efforts are expected to facilitate cooperation between governments and international bodies to promote common understanding of related concepts or approaches, technical know-how for implementation, information-sharing mechanisms, and contributions to development of effective and measurable global and national targets for the post-2020 period.

### 3. Review of Concepts

Multiple existing concepts focus on integrated approaches in production landscapes and seascapes, such as cultural landscapes, integrated landscape management, the landscape approach, and SEPLS. Another key term, “mainstreaming biodiversity in production sectors,” focuses on achieving similar goals through production activities. A conceptual literature review was conducted to examine how these concepts have been incorporated into and implemented under existing policies.

The conceptual review reported here is currently under consideration for publication in the Journal of Environmental Planning and Management as Quantitative analysis of National Biodiversity Strategy and Action Plans about the incorporation of integrated approaches in production landscapes (in review).

#### (1) Integrated approaches in production landscapes

The following findings were derived from review of research papers and policy documents concerning SEPLS and similar concepts.

The aforementioned concepts were found to be linked. SEPLS and cultural landscapes have many common characteristics, such as emphasis on dynamic mosaics, harmony between human society and nature, local knowledge, and culture (Plieninger and Bieling 2013, Plieninger et al. 2017, Tieskens et al. 2017), and they also refer to similar case studies, such as *dehesa* in Spain. Like SEPLS, many cultural landscapes contribute to farmland biodiversity (Farina 2000, Plieninger and Bieling 2013).

As noted by Takeuchi (2010) and Plieninger et al. (2017), SEPLS and GIAHS share a similar spirit; however, with GIAHS, it is necessary for the landscape to have a “global” significance, while SEPLS are valued for their local importance.

Additionally, activities for sustainable management of SEPLS implemented by IPSI members recognize the importance of the landscape approach (Lopez-casero et al. 2016, UNDP 2016).

Many existing local terms relate to these landscapes/approaches, such as *satoyama* in Japan, *muyong* in the Philippines, *kebun* in Indonesia and Malaysia, *dehesa* in Spain, and *terroir* in France.

For practical purposes in this study, all the above concepts are referred to as “integrated approaches in production landscapes and seascapes.” However, the intention is not to propose a new concept to integrate all related concepts, but rather to determine how this group of concepts—expressed using different terms—is reflected in national policies around the world.

**Table 2. Concepts related to integrated approaches in production landscapes and seascapes**

Concept	Analysis
<b>Cultural landscape</b>	<p>The concept of cultural landscapes is complex and ambiguous owing to their long history (e.g., Vos and Meekes, 1999; Jones, 2003; Plieninger and Bieling, 2012).</p> <p>Some examples of definitions used for cultural landscapes:</p> <ul style="list-style-type: none"> <li>• Combined works of nature and of man (UNESCO 2017)</li> <li>• Geographical areas in which the relationships between human activity and the environment have created ecological, socioeconomic, and cultural patterns and feedback mechanisms that govern the presence, distribution, and abundance of species assemblages (Farina 2000)</li> </ul>
<b>Globally Important Agricultural Heritage System (GIAHS)</b>	<p>A programme created by FAO to recognize remarkable land use systems and landscapes which are rich in globally significant biological diversity evolving from the co-adaptation of a community with its environment and its needs and aspirations for sustainable development (FAO 2013).</p>
<b>Integrate landscape management</b>	<p>Used to signify almost the same thing as “integrated landscape approach” (Estrada-Carmona et al. 2014).</p> <p>“Landscape management” is defined as “action, from a perspective of sustainable development, to ensure the regular upkeep of a landscape, so as to guide and harmonise changes which are brought about by social, economic, and environmental processes” in Article 1e of the European Landscape Convention. Integrated landscape management focuses on merging the natural and cultural aspects of landscape management (Stenseke 2016).</p>
<b>Landscape approach</b>	<p>Derived from landscape-scale thinking in the context of biodiversity conservation; it is further developed by recognizing the need to address the priorities of people related to landscapes. There is no universal definition of “landscape approach”; it has been widely applied to various types of research and practices (Sayer et al. 2013).</p>
<b>Socio-ecological production landscapes and seascapes (SEPLS)</b>	<p>A term coined under the Satoyama Initiative for areas of dynamic mosaics of habitats and land and sea uses where the harmonious interaction between people and nature maintains biodiversity while providing humans with the goods and services needed for their livelihoods, survival and well-being in a sustainable manner. These are found in many places in the world under different names and are deeply linked to local culture and knowledge. Four main characteristics are identified: (1) harmonious interaction between people and nature maintaining biodiversity; (2) providing humans with goods and services in a sustainable manner; (3) deeply linked to local culture and knowledge; and (4) dynamic mosaics of habitats and land and sea uses (IPSI Secretariat 2015).</p>

## (2) Ecosystem approach

Integrated approaches in production landscapes are embraced in the ecosystem approach, which was adopted during the second CBD COP in 1995 as the primary framework for action under the Convention (Sayer et al. 2013). In dealing with more complex situations, the ecosystem approach integrates previous approaches (such as biosphere reserves, protected areas, and single-species conservation programs) that had hitherto been mainstream. The CBD requires that parties take into account the ecosystem approach and highlight the ecosystem services in their NBSAPs (CBD 2008).

Table 3. Definition of the ecosystem approach	
Concept	Definition
Ecosystem approach	A strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. (CBD 2000)

## (3) Biodiversity mainstreaming

Biodiversity mainstreaming is similar in concept to integrated approaches in production landscapes, but not always focused on landscapes and seascapes. Biodiversity mainstreaming is a key issue of CBD and well cited in NBSAPs.

The Cancun Declaration on Mainstreaming the Conservation and Sustainable Use Biodiversity for Well-being (CBD 2016) focused on the importance of mainstreaming conservation and sustainable use of biodiversity in the agriculture, forestry, fishery, and tourism sectors.

Table 4. Definition of biodiversity mainstreaming	
Concept	Definition
<b>Biodiversity mainstreaming</b>	Biodiversity mainstreaming is the process of embedding biodiversity considerations into policies, strategies and practices of key public and private actors that impact or rely on biodiversity, so that it is conserved and sustainably used, both locally and globally. (Huntley and Redford 2014)

<p><b>Mainstreaming</b></p>	<p>The Convention requires countries not just to prepare a national biodiversity strategy, but to ensure that this strategy contains elements that are incorporated into the planning and activities of all those sectors whose activities can have an impact (positive and negative) on biodiversity. This is what is meant by ‘mainstreaming’ – all relevant sectors of government, the private sector and civil society working together to implement the strategy. (SCBD 2011)</p> <p>CBD Article 6. General Measures for Conservation and Sustainable Use</p> <p>Each Contracting Party shall, in accordance with its particular conditions and capabilities:</p> <p>(b) Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.</p>
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#### (4) Summary of this chapter

Cultural landscapes, GIAHS, integrated landscape management, the landscape approach, and SEPLS were found to be linked, and for practical purposes in this study were assimilated into the concept of “integrated approaches in production landscapes.” These concepts are based on the ecosystem approach, “a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way” (CBD 2000). In addition, biodiversity mainstreaming is conceptually similar to integrated approaches in production landscapes, though it is not always focused on landscapes and seascapes.

## 4. General Review of NBSAPs

General review of NBSAPs was conducted to understand the overall trends in how concepts related to integrated approaches in production landscapes were incorporated into national policies, either fully or partially. This quantitative study focused on 133 NBSAPs, using text mining methods and statistical analysis.

The general review of NBSAPs reported here is currently under consideration for publication in the Journal of Environmental Planning and Management as Quantitative analysis of National Biodiversity Strategy and Action Plans about the incorporation of integrated approaches in production landscapes (in review).

### (1) Data set

The scope of this research included the latest NBSAPs written in English and shared on the CBD website by all countries by July 31, 2016 (total number: 133). Among these NBSAPs, 29 were from countries in Africa, 17 in the Americas, 44 in the Asia-Pacific region, and 42 in Europe and Central Asia, according to the regions defined by The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

### (2) Methods

For text mining and subsequent co-occurrence analysis, we used KH Coder 2.0 (<http://khc.sourceforge.net/en/>) (Higuchi 2016), a freeware program developed for quantitative content analyses including text mining (Higuchi 2016).

Our analysis was implemented in the following stages. First, the data were prepared and codes selected based on the conceptual review. Next, a text-mining analysis was conducted using the prepared data and codes. Finally, a statistical analysis was conducted of the differences, relationships, and co-occurrences among references and the appearance frequency related to the codes and groups; this was to determine the overall trends in global penetration of integrated approaches in production landscapes and the degree (partial or comprehensive) of their penetration.

Table 5. List of groups, codes and example keywords		
Group	Code	Keyword examples
A1	*GIAHS	Globally Important Agricultural Heritage Systems, GIAHS
	*SEPLS	SEPL, SEPLS, socio-ecological production landscape, social ecological production landscape
	*Cultural landscape	Cultural landscape, biocultural landscape, high-nature-value farmland
A2	*Traditional natural resource management	Dehesa, ahupua'a, satoyama, satoumi, muyong, community forestry, transhumance, agroforestry, home garden, fruit garden, etc.
A3	*Landscape approach	Landscape approach, integrated landscape management
B	*Dynamic mosaics of habitats and land and sea uses	Dynamic mosaic, mosaic land use, heterogeneous and landscape
	*Harmonious interaction between people and nature maintains biodiversity	Human influenced landscape, society in harmony with nature, etc.
	*Providing humans with goods and services in a sustainable matter	Sustainable natural resource use, etc.
	*Being deeply linked to local culture and knowledge	Local knowledge, local culture, traditional knowledge, etc.
C	*Ecosystem approach	Ecosystem approach
D	*Landscape	Landscape
	*Seascape	Seascape

### (3) Results

#### i. Text mining

The results of the text mining by KH Coder were as follows: the number of countries was 133, number of paragraphs 39,503, and the number of sentences 167,945. The number of sentences differed for each country: minimum 89, maximum 5,024, median 1,123, quartile range 660.5–1,704. The term that appeared most frequently was “biodiversity” (31,209 times), followed by “species” (23,801), “area” (21,604), and “conservation” (18,113). The code most frequently referenced was “being deeply linked to local culture and knowledge,” followed by “landscape”; the least-referenced code was “GIAHS.”

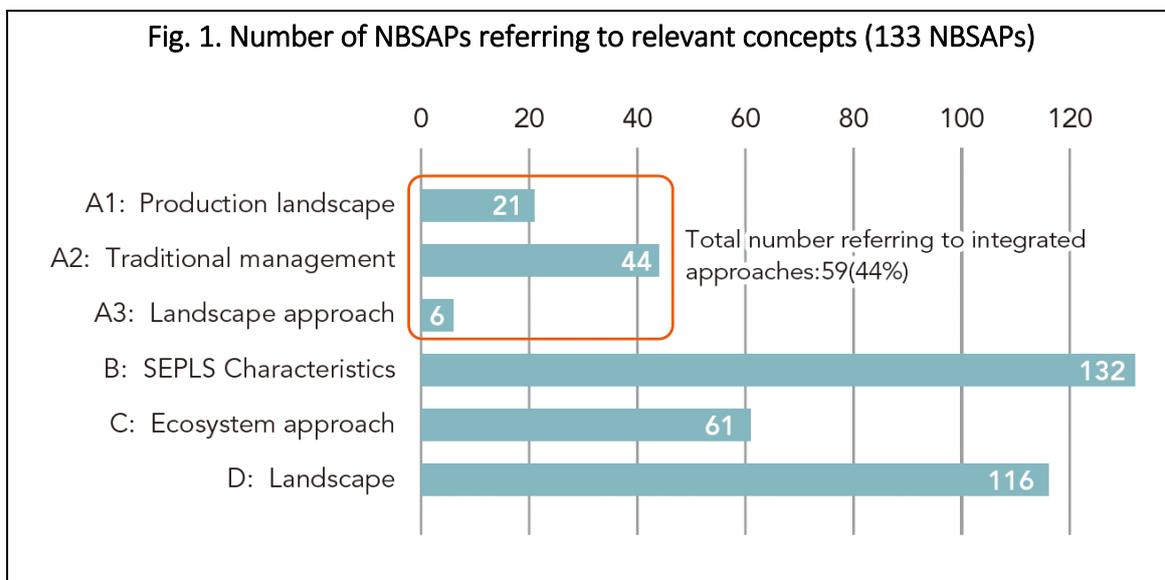
## ii. Statistical analysis

Regarding overall global trends in incorporation, it was found that about half of the NBSAPs referred to concepts concerning integrated approaches in production landscapes. More references to the concepts were observed with time, as strategies were updated. It was also found that Central and Western Europe preferentially used the term “landscape,” but not local terms related to traditional management. Regarding partial incorporation, some characteristics of SEPLS showed good penetration and connected well with one another, with the exception of the characteristic concerning dynamic mosaics of habitats and land and sea use.

## iii. Key findings

- a. **Integrated approaches in production landscapes (Group A) were referred to as full concepts in about half of NBSAPs.**

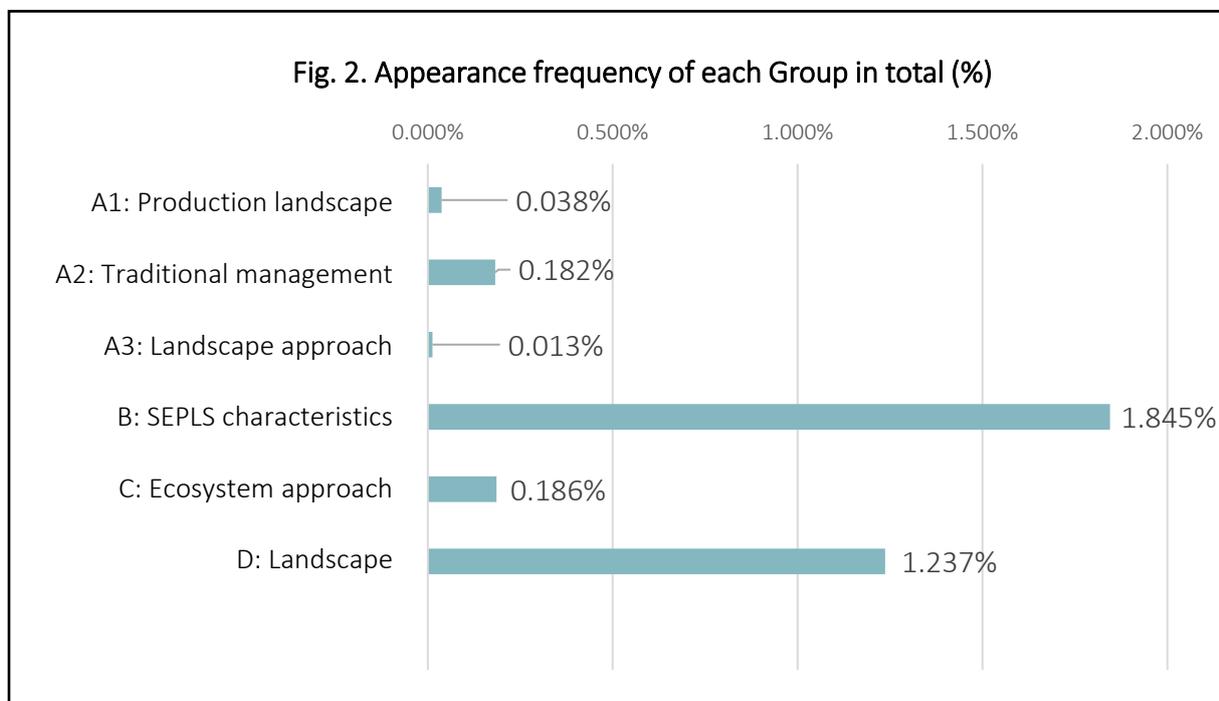
About half of NBSAPs (59 NBSAPs, 44%) referred to “integrated approaches in production landscapes” (Group A). This was almost the same proportion as the number of countries that referred to the “ecosystem approach” (Group C, 61, 46%), the inclusion of which was recommended in the NBSAP training modules (SCBD 2011). Almost all NBSAPs (132, 99%) referred to at least one of four SEPLS characteristics (Group B) (Figure 1).



Among the integrated approaches in production landscapes, GIAHS was referred to only in the Philippines and Japan, and SEPLS only in Japan and Cambodia (Table 6).

Table 6. Details of references to integrated approaches in production landscapes						
Groups	Codes	Africa	Americas	Asia-Pacific	Europe and Central Asia	Total
A1: Production Landscape	GIAHS	0	0	2	0	2
	SEPLS	0	0	2	0	2
	Cultural landscape	2	1	5	11	19
	Total	2	1	7	11	21
A2: Traditional management		17	4	20	3	44
A3: Landscape approach		0	2	0	4	6
Total, Group A		19	5	21	14	59
Total number of countries		29	17	44	42	133

b. Not all keywords were well referenced in NBSAPs, and some, even if referenced, were used only once or twice per NBSAP (Figure 2).



- c. **Europe and Central Asia differed significantly from other regions in its Code reference trends. Countries in this region preferentially use landscapes (Group D) but not traditional local terms (Group A2) (Table 6).**

This finding may be due to differences in approach: European countries focus on landscapes, whereas other regions focus on specific local sites expressed in local terms. However, the regions apart from Central and Western Europe showed no significant differences with other groups. In addition, we found no significant correlations between the average Satoyama Index of each country and the appearance frequency for each group and all the groups.

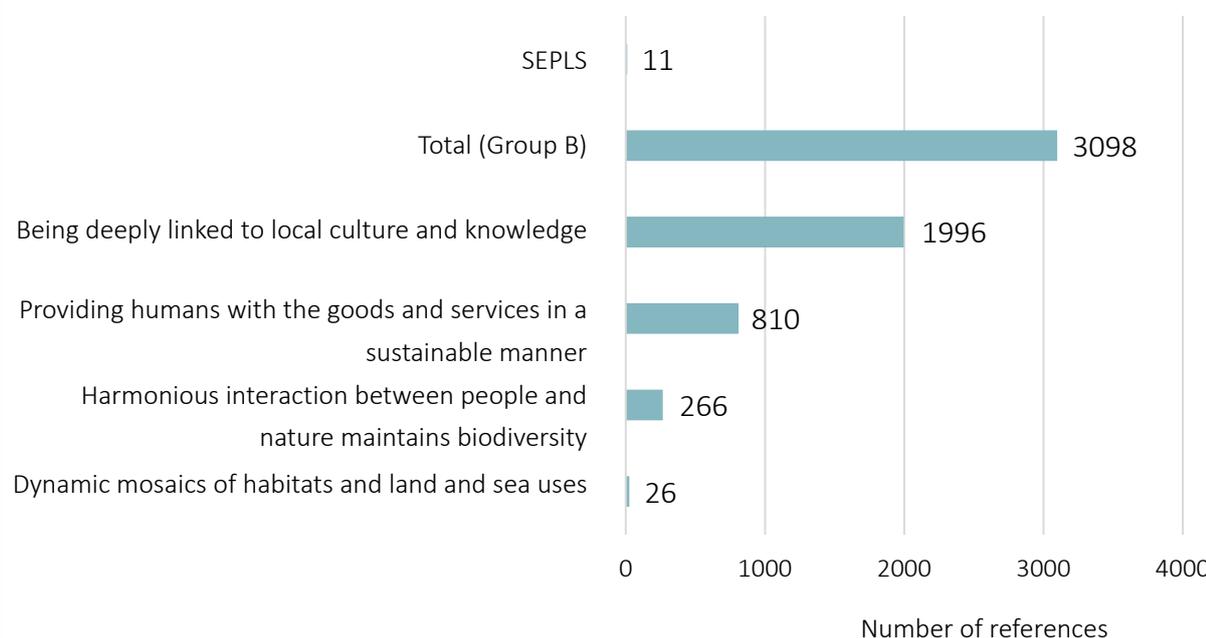
- d. **More references were made to production landscapes (Group A1) and the ecosystem approach (Group C) as NBSAPs were updated.**

NBSAPs embraced partial concepts of integrated approaches in production landscapes (Group A1), the ecosystem approach (Group C), and landscapes (Group D) in revisions. Only with landscapes (Group D) was there a significant difference in both publication year and number of versions. Groups A1 and C did not show significantly later publication years, but they did demonstrate a significant increase in the number of versions. This occurred due to differences in the first developed NBSAP and the timing of revisions in each different country. These results indicate that penetration of the concept of integrated approaches in production landscapes has increased globally to some extent.

- e. **Integrated approaches in production landscapes were partially well-penetrated. (Group B was referenced in almost all NBSAPs).**

At least one of the four characteristics of SEPLS (Group B) received reference in almost all NBSAPs. However, the code “dynamic mosaics of habitats and land and sea uses,” which represents a landscape characteristic of SEPLS, was rarely referenced. (Figure 3)

Fig.3 Number of references about four Codes of Group B in total



#### (4) Summary of this chapter

A general review of NBSAPs was conducted to understand the overall trends in how concepts concerning integrated approaches in production landscapes were incorporated into national policies, either fully or partially. This quantitative study focused on 133 NBSAPs using text mining methods and statistical analysis. The concept most referred to in NBSAPs was “being deeply linked to local culture and knowledge,” one of the four characteristics of SEPLS, followed by “landscape.” The concept referred to least was “GIAHS.”

Nearly half the NBSAPs were found to refer to concepts of integrated approaches in production landscapes, and this increased with time as the strategies were updated. There were significant regional differences between Europe and Central Asia and other regions. Three out of the four characteristics of SEPLS showed considerable incorporation into NBSAPs and were well connected with one another; however, an exception was the characteristic related to dynamic mosaics of habitats and land and sea uses.

In summary, the individual concepts are partially well-incorporated into NBSAPs, but not well incorporated as whole concepts. This study found an overall trend of incorporation into NBSAPs; however, a full understanding of how these concepts were described in NBSAPs was not grasped.

## 5. In-depth Study

Based on the results of the conceptual review and the general review of NBSAPs, an in-depth study was conducted involving 15 selected NBSAPs including concepts related to integrated approaches in production landscapes. This study focused on how such concepts were described, and on what concrete measures were suggested in each respective NBSAP. Review of the selected NBSAPs was followed by assessment of the latest National Reports of the respective countries and other related project websites to analyze their implementation status and activities on the ground.

### (1) Data set

Fifteen NBSAPs were selected from among the data of the general review of NBSAPs (133 NBSAPs) based on the general review results, an expert interview, regional balances, and related documents.

#### **Selected NBSAPs (15):**

Cambodia (2016, v2), Colombia (2012, v2), Dominica (2014, v2), Estonia (2014, v2), Ethiopia (2016, v2), Fiji (1995, v1), Ghana (2002, v1), Greece (2014, v1), Japan (2013, v5), Jordan (2015, v2), Namibia (2015, v2), Nepal (2014, v2), South Africa (2016, v2), Switzerland (2012, v2), United Kingdom (2011, v3)

#### **National Reports (14)\*:**

Cambodia (2014, v5), Dominica (2014, v5), Estonia (2014, v5), Ethiopia (2014, v5), Fiji (2014, v5), Ghana (2015, v5), Greece (2016, v5), Japan (2014, v5), Jordan (2014, v5), Namibia (2014, v5), Nepal (2014, v2), South Africa (2014, v5), Switzerland (2014, v5), United Kingdom (2014, v5)

*\*The National Report of Colombia was not provided in English, so it could not be analyzed.*

#### **Other Related Project Websites:**

REDD+ (Forest Carbon Partnership Facility)

<https://www.forestcarbonpartnership.org/redd-countries-1>

GEF projects

<https://www.thegef.org/projects>

UNDP in [country name]

<http://www.undp.org/content/undp/en/home.html>

FAO country profiles: [country name]

<http://www.fao.org/countryprofiles/en/>

COMDEKS

<https://comdeksproject.com/country-programmes/>

## (2) Methods

The analysis was implemented in the following stages. First, concepts were selected based on general review of NBSAPs (Table 7), and questions were set for each resource (NBSAPs/National Reports/other related project websites). The documents and websites were screened one by one, identifying descriptions including the selected concepts and examining them using the set questions. Finally, statistical analysis was conducted to examine the differences, relationships, and co-occurrences among descriptions; this was done to understand how integrated approaches in production landscapes and seascapes were described, what concrete measures were suggested in NBSAPs, and how such measures were implemented on the ground.

Table 7. Groups and examples of keywords for each concept		
Group	Concept (equivalent to code from NBSAP general review)	Examples of Keywords (same as in NBSAP general review)
A1	<b>GIAHS</b>	Globally Important Agricultural Heritage Systems, GIAHS
	<b>SEPLS</b>	SEPL, SEPLS, socio-ecological production landscape, social ecological production landscape
	<b>Cultural landscape</b>	Cultural landscape, biocultural landscape, high-nature-value farmland
A2	<b>Traditional natural resource management</b>	Dehesa, ahupua'a, satoyama, satoumi, muyong, community forestry, transhumance, agroforestry, home garden, fruit garden, etc.
A3	<b>Landscape approach</b>	Landscape approach, integrated landscape management
BM	<b>Biodiversity mainstreaming</b>	Biodiversity mainstreaming, sustainable management/agriculture/production/forestry/fishery/aquaculture, PES, REDD+, etc.

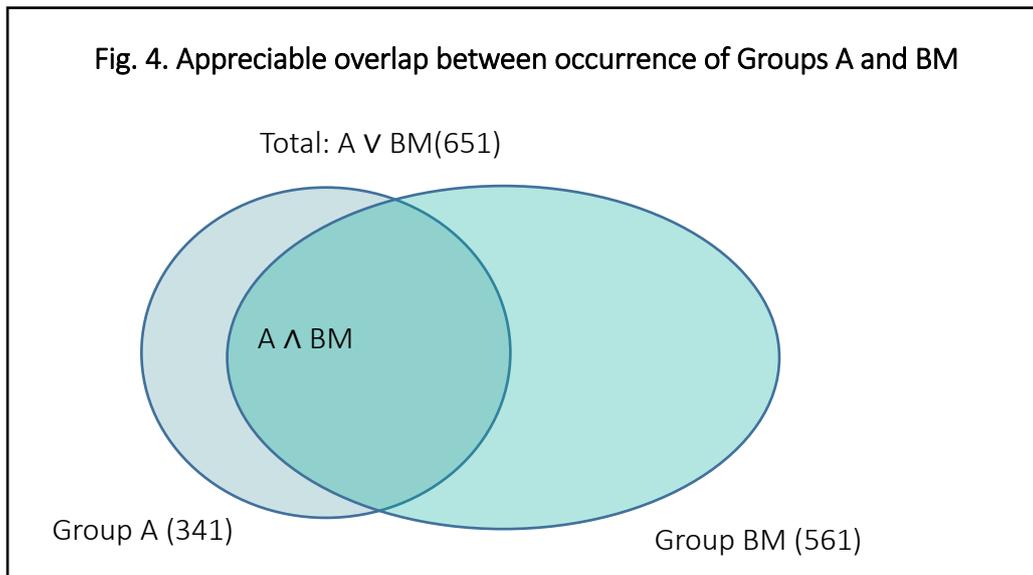
## (3) Results

A total of 114 related projects were found the survey of websites, of which GEF and FAO projects comprised 72%. GEF and FAO played important roles in implementation of the related projects. The projects' objectives were consistent with the descriptions in the NBSAPs; however, only eight projects in three countries were referred to in the respective country's NBSAP. This finding indicates divergence between NBSAPs and ground-level projects. The key findings are as follows:

i. Key findings

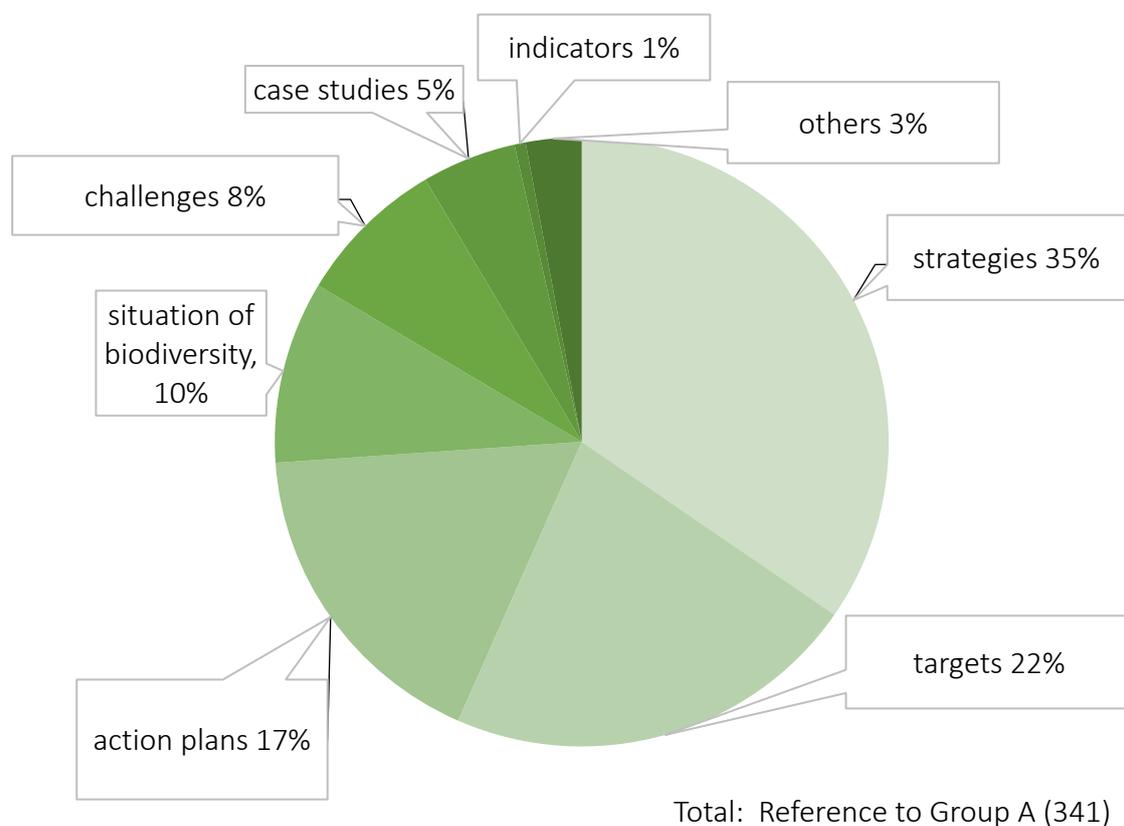
a. NBSAPs

Descriptions of integrated approaches in production landscapes and seascapes (Group A) comprised 1-4% of each NBSAP and co-occurred well with biodiversity mainstreaming (Group BM). The number of descriptions concerning biodiversity mainstreaming was higher than that concerning integrated approaches in production landscapes and seascapes (Figure 4).



Integrated approaches in production landscapes and seascapes were mostly described in the “strategies” chapter of NBSAPs, followed by the “targets,” “action plans,” and “situation of biodiversity” chapters (Figure 5).

Fig. 5. Number of descriptions referencing Group A in each chapter of NBSAPs



Descriptions of integrated approaches in production landscapes referenced the importance of biodiversity and ecosystem services more than biodiversity mainstreaming (Table 8).

Table 8. References to the importance of biodiversity or ecosystem services in NBSAPs

Importance of biodiversity and ecosystem services	Number of descriptions related to Group A (341)
Importance of biodiversity	22
Ecosystem services (provisioning)	14
Ecosystem services (supporting)	7
Ecosystem services (regulating)	7
Ecosystem services (cultural)	6

The majority of descriptions did not clearly refer to the status of biodiversity, but many referred to measures to improve its status (Table 9).

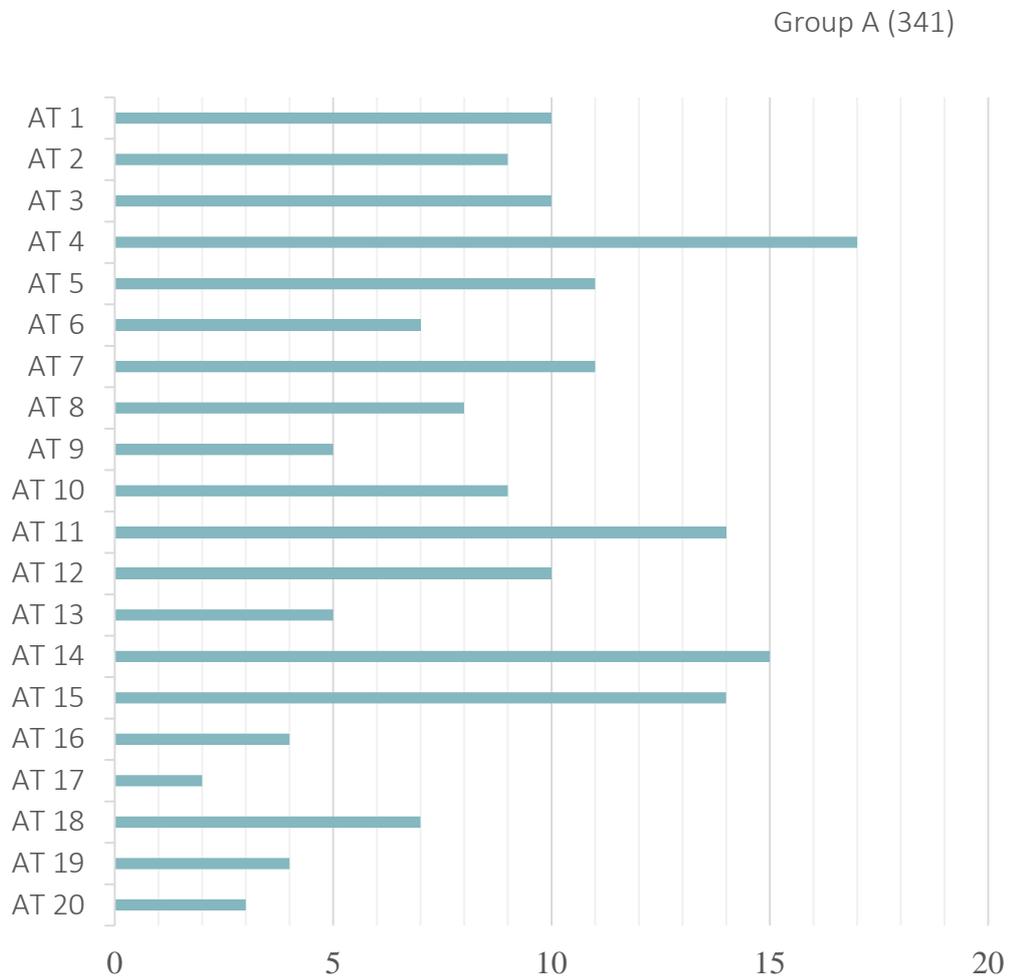
Table 9. Status of management, biodiversity, and ecosystem services in NBSAPs		
Status	Related to Group A (341)	
	Number of descriptions	Percentage
Degraded	34	10%
Good	10	3%
Critical	10	3%
Other	202	59%
None	85	25%
Total	341	100%

To express the feasibility of the action plan, more countries specified the responsible organization rather than the specified indicators or budget (Table 10).

Table 10. Feasibility check by presence of indicators, etc.	
Feasibility	Number of descriptions related to Group A (341)
Responsible organization	84
Indicator and responsible organization	31
Indicator	18
Indicator and budget	8
Target, indicator, and responsible organization	6
Budget and responsible organization	6
Responsible organization and target	9
Indicator, budget, and responsible organization	4
Budget	1

The most relevant Aichi Biodiversity Target was Target 4, followed by Targets 14, 15, 11, 5, and 7. In comparison to biodiversity mainstreaming, integrated approaches in production landscapes were well connected to Aichi Biodiversity Targets 11 and 12, and less connected to Target 6 (Figure 6).

**Fig. 6. Number of descriptions related to Group A that were found to be related to Aichi Biodiversity Targets in NBSAPs**



### **b. National Reports**

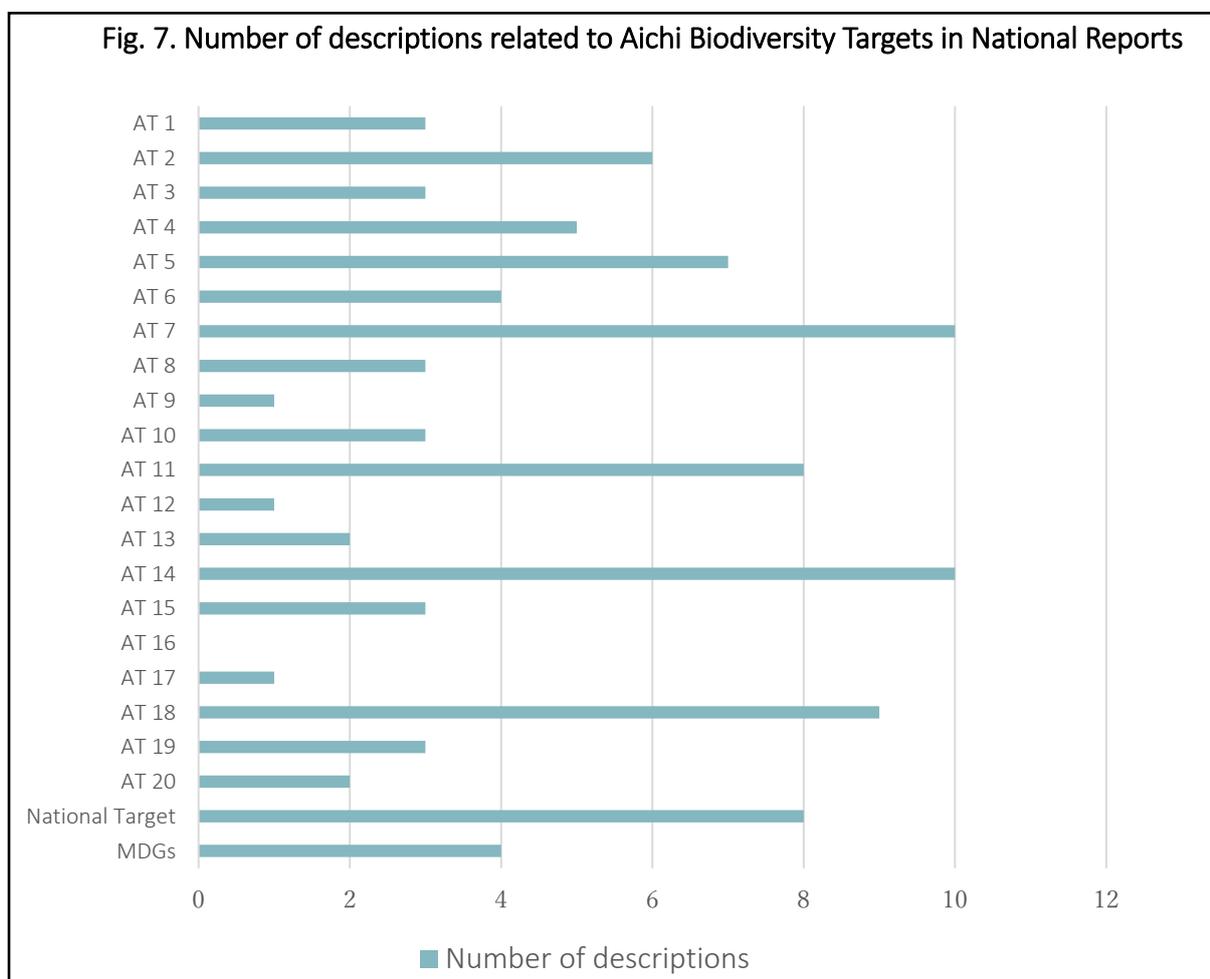
The overall findings from the study of National Reports supported the results of the study of NBSAPs.

Trends differing from those found in NBSAPs were as follows: the ratio of biodiversity mainstreaming was higher, the number of references to the importance of biodiversity and ecosystem services was lower, and the ratio of “projects” was higher.

Expressions of implementation status varied from country to country. However, the overall trend was for expressing degree of progress using positive terms: “good,” “implemented,” or “progress.”

Table 11. Top 5 terms frequently appearing in descriptions		
Descriptions related to Group A (155)		
Rank	Extracted term	Number of extractions
1	Good	14
2	Implement	14
3	Establish	6
4	Area	5
5	Progress	5

The most connected Aichi Biodiversity Target was Target 7 (as compared to Target 4 in NBSAPs) (Figure 7).

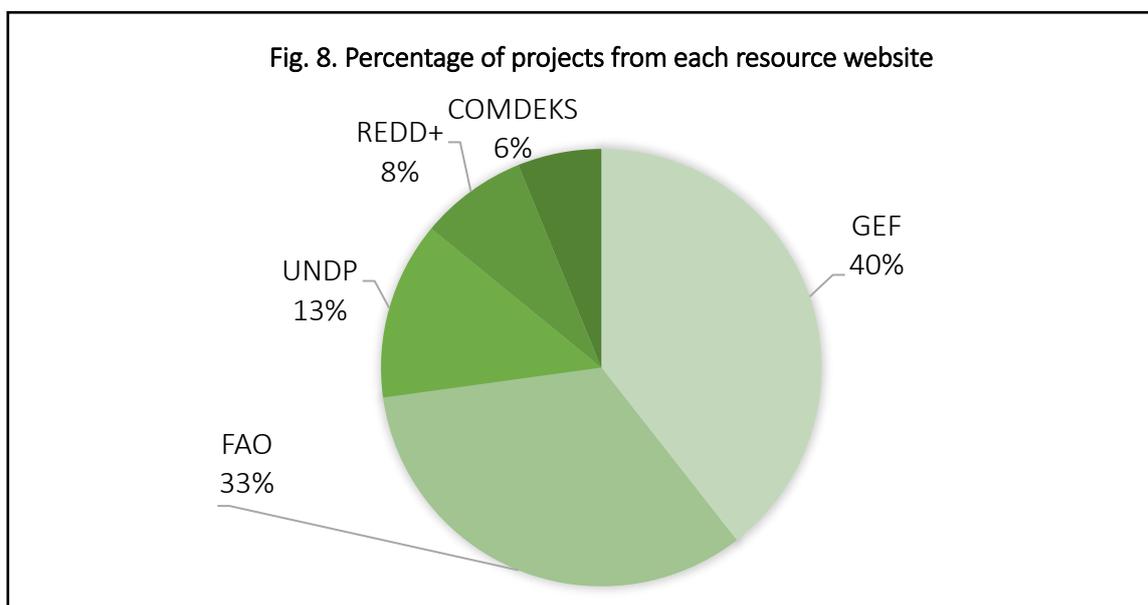


Implementation measures in National Reports for integrated approaches in production landscapes and biodiversity mainstreaming tended to differ, despite the similarity of descriptions of such implementation measures in NBSAPs.

### c. Other related projects

A total of 114 projects related to integrated approaches in production landscapes and seascapes and biodiversity mainstreaming were selected, implemented in ten countries (the remaining five countries, including developed countries, had no related projects).

GEF and FAO projects covered 72% of the total projects. These played important roles in implementation of related projects. However, implementation agencies were more diverse, and included the government organizations (Figure 8).



The objectives of the selected projects were consistent with the descriptions in the NBSAPs reviewed in this research; however only eight projects in three countries were referenced in the respective countries' NBSAP. This finding indicates divergence between NBSAPs and ground-level projects.

The eight referenced projects are described below. Four were from Cambodia, three from Nepal, and one from Dominica.

1. *Establishment of a National Forest Monitoring System for Reducing Emissions from Deforestation and Degradation-plus (REDD+) readiness in Cambodia:* REDD+ was listed as a specific action of the NBSAP and "REDD+ projects" was an indicator for Aichi Biodiversity Target 15 (Cambodia).
2. *Cambodia UN-REDD National Programme:* REDD+ was listed as a specific action of the NBSAP and "REDD+ projects" was an indicator for Aichi Biodiversity Target 15 (Cambodia).
3. *Forest Carbon Partnership Facility REDD+ Readiness Project:* REDD+ was listed as a specific action of the

NBSAP and “REDD+ projects” was an indicator for Aichi Biodiversity Target 15 (Cambodia).

4. *Establishing Conservation Areas Landscape Management (CALM) in the Northern Plains*: This project was listed as a specific action (8.10) (“Compile information on the integration of PAs in national sustainable development goals from relevant initiatives such as the landscape integration project called ‘CALM,’” 95) (Cambodia).
5. *Sustainable Land Management in the Commonwealth of Dominica*: This was described as a synergistic action of the NBSAP (Dominica).
6. *Landscape Level Biodiversity Conservation in Nepal’s Western Terai Complex*: This was listed as one of 13 priority projects of the Implementation Plan (Nepal).
7. *GEF Small Grants Programme (SGP)*: This was described as a project that “made an important contribution to building national capacity for an ecosystem approach to conservation and sustainable use of wetlands” (Nepal).
8. *Conservation and Sustainable Use of Wetlands in Nepal (CSUWN)*: This was described as a project that “made an important contribution to building national capacity for an ecosystem approach to conservation and sustainable use of wetlands” (Nepal).

#### (4) Summary of this chapter

Based on the results of the conceptual review and the general review of NBSAPs, an in-depth study was conducted of 15 selected NBSAPs that included concepts related to integrated approaches in production landscapes. This in-depth study focused on how such concepts were described and what concrete measures were suggested in the respective NBSAPs. The review was followed by assessment of each respective country’s latest National Report and other related project websites to analyze the implementation status of measures and activities on the ground.

The results of this study showed that concepts related to integrated approaches in production landscapes were well described in the “strategies,” “targets,” and “action plan” chapters of NBSAPs, co-occurring with biodiversity mainstreaming and related to ecosystem services. The concepts were most closely related to Aichi Biodiversity Target 4, followed by Targets 14, 15, 11, 5, and 7. The National Reports supported the descriptions found in the NBSAPs and reported their implementation status to the CBD. These helped in understanding the basic status of integrated approaches in production landscapes in NBSAPs. However, some regional differences and divergence between national policies and on-the-ground projects were found. In addition, information on incorporation processes and practical implementation status was not available. Thus, the study’s findings indicate a need for further surveys to understand what happens prior to and after development or revision of NBSAPs.

## 6. International Workshop on “Mainstreaming Biodiversity in Production Landscapes: Integrated Approaches in Design and Implementation of National Biodiversity Strategies and Action Plans (NBSAPs)”

Following the general review and in-depth study of NBSAPs, the *International Workshop on Mainstreaming Biodiversity in Production Landscapes: Integrated Approaches in Design and Implementation of National Biodiversity Strategies and Action Plans (NBSAPs)* was held on 16 and 17 January 2018 at the United Nations University Headquarters in Tokyo, Japan, to learn more about countries’ experiences in incorporating integrated approaches in production landscapes and seascapes into NBSAPs and the actual implementation of related measures. Through discussion of these experiences with incorporation and implementation and lessons learned, the workshop aimed to provide useful findings and recommendations for future NBSAP development and implementation.

Two policy experts were invited from each of seven national governments (Cambodia, Colombia, Estonia, Ethiopia, Japan, Mexico and South Africa), who were selected based on previous analysis results and geographic balance. Each country made presentations on their policies and projects related to integrated approaches in production landscapes and seascapes as described in their NBSAPs and/or other relevant strategies and policies. Participants also discussed success factors and issues related to incorporation and implementation of these approaches and their contributions to the achievement of relevant Aichi Biodiversity Targets.

This section summarizes the workshop presentations. All the presentation and meeting materials can be downloaded from the International Partnership for the Satoyama Initiative (IPSI) website at following link or QR code:



<http://satoyama-initiative.org/16-17-january-2018-workshop-on-incorporation-of-integrated-landscape-management-approaches-in-nbsaps/>

The workshop programme and participants list are provided as Annexes A and B to this report

### (1) Introductory presentations

After the self-introduction, the overview of the whole research and the back ground and objectives of the workshop was presented by UT-IR3S and the CBD support activities of NBSAP revision was presented by the CBD Secretariat Related activities under Satoyama Initiative was presented by UNU-IAS. These introductory presentations provided an outline for the contents of the discussion during the workshop.

The key points of the introductory presentations were as follows.

### **UT-IR3S: Background studies and analysis**

The whole research project consists of the review of concepts, general review of NBSAPs general review of NBSAPs, in-depth study and this international workshop. The previous studies showed that the concepts of integrated approaches in production landscapes were incorporated into the NBSAPs (e.g. the concept were referred to in about half of the NBSAPs and well described in the strategies chapters), however could not comprehend the detailed incorporation processes. To promote the incorporation of the concepts into the NBSAPs in the next revision (after 2020) and support the practical activities enhancing the concepts, the international workshop aimed to study the good practices of each country in terms of the concept incorporation processes and implementation. Then examined the effective measures of concept incorporation and implementation and followed by discussion about the contribution to achieving the Aichi Biodiversity Targets.

### **SCBD: Status of updated NBSAPs and initial assessments**

As of the middle of January 2018, a total of 151 countries had completed and submitted their updated NBSAPs, as requested in CBD COP 10 Decision X/2. Following reviews of these updated NBSAPs, SCBD noted a number of improvements in the updated NBSAPs in terms of participatory processes, issues covered and level of political support for NBSAPs among others, although so far only 50 countries have adopted NBSAPs as policy instruments. Meanwhile, the ambition level of national targets is not commensurate with global biodiversity targets. It was also noted that more national targets were developed or adopted for some Aichi Targets than others. The number of updated NBSAPs including communication strategies, capacity development plans, resource mobilization strategies and monitoring and reviewing mechanisms is relatively small, though many countries had indicated their intentions to work on these strategies and mechanisms. SCBD also mentioned some challenges encountered in updating NBSAPs—including inadequate review of the implementation of earlier NBSAPs due to lack of monitoring and the difficulty of communication and getting political and public support for NBSAPs—and guidance provided by COP 12 and COP 13 for updating NBSAPs, as well as guidance from COP 13 for mainstreaming biodiversity into relevant sectors.

### **UNU-IAS: Satoyama Initiative**

The Satoyama Initiative is a global effort to promote integrated landscape approaches in SEPLS with the vision of “societies in harmony with nature”, and has been recognized by the CBD since COP 10 in 2010. UNU-IAS serves as the secretariat of the International Partnership for the Satoyama Initiative (IPSI), which comprises 220 organizations around the world including national governments, local governments, international organizations, academic organizations, and others working towards implementing the Satoyama Initiative. IPSI promotes communication and networking to foster collaboration among members, knowledge sharing, collection and analysis of case studies, and various activities and capacity building.



## (2) Presentations by countries

Each country's presentation focused on four points:

- Process of incorporation of relevant policies and projects into the NBSAP, including success factors and challenges;
- Implementation status, challenges and future considerations of the policies and projects;
- Contributions to achievement of relevant national biodiversity targets and Aichi Biodiversity Targets;
- Future steps, including further policy development and review of implementation of existing policies, including lessons learned.

### **Cambodia**

Cambodia updated its NBSAP in 2016, which consists of 24 themes including 498 activities in line with national targets as well as with relevant Aichi Biodiversity Targets. Cambodia broadly mainstreamed integrated approaches in production landscapes, and the NBSAP included multiple themes related to these concepts (Theme 1: Protected Area (PA) System, Theme 9: Sustainable Forestry, Theme 19: Community Participation and Theme 23: Landscape and Seascape Management and Coordination). These themes contribute to Aichi Biodiversity Targets 4, 5, 7, 11, 14 and 17. The National Council for Sustainable Development coordinates the comprehensive implementation of the NBSAP including these themes. Challenges in the implementation of these themes include limitations of specific policies on biodiversity management, lack of resources (human, capacity, financial) and limited cooperation among relevant sectors and stakeholders. Capacity building for implementing institutions is identified a matter of priority.

## **Colombia**

Colombia developed its National Policy for the Integral Management of Biodiversity and Ecosystem Services (PNGIBSE) in 2012, instead of an NBSAP. Protection and sustainable use of mangrove ecosystems is one of the prioritized programmes in this policy document, and it is supported by the Biodiversity Finance Initiative (BIOFIN). The mangrove programme consists of nine sub-programmes: zoning, planning, protected areas, research, participation and capacity building, restoration, legal and normative aspects, information systems, and institutional strengthening. Colombia focused on Aichi Biodiversity Target 11 as the most relevant target for this programme. The most important challenges the programme faces are: (a) specifying a vision for sustainable development in the framework of construction and implementation of projects, works or activities for conservation and appropriate use of mangrove ecosystems; (b) effective implementation of economic and financial instruments for the conservation of mangrove ecosystems; (c) institutional strengthening of regional environmental agencies; and (d) continuity of productive projects with local communities that use the mangrove ecosystems in accordance with conservation. Prioritized future activities include strengthening the involvement of society, recognizing socio-ecological value and developing better human resources.

## **Estonia**

Estonia updated its NBSAP in 2012. Maintenance and restoration of 45,000 hectares of semi-natural grasslands, which have extremely high biodiversity and belong to the Estonian traditional cultural landscape, is one of the major targets in the NBSAP. Activities for semi-natural grasslands started with developing a country-wide GIS database of grasslands in 1999. Then, the Estonian government designated protection for the valuable grasslands and decided to provide subsidies for maintenance and restoration of valuable grassland. Using EU funds for subsidies (replacing the previously used national funding), started in 2007, legal regulations were put in place, training and public awareness-raising were continued. Thanks to these processes, the NBSAP including these activities was formulated in 2012 after a two-year coordination process. By incorporating their programme into the NBSAP, Estonia was able to set an Action Plan for grasslands up to 2020 for implementing the NBSAP. Maintenance and restoration of grasslands contributes to multiple Aichi Biodiversity Targets, including 1, 3, 4, 5, 7, 8, 11, 12, 14, 15, 17, 19, and especially 5, 12 and 15. Although the action plan is seeing steady progress, there is a need for more progress in some habitats, a higher interest in the agricultural sector and training for local farmers.

## **Ethiopia**

Ethiopia updated its NBSAP in 2016 based on the review of the existing NBSAP and other national-level priorities. Ethiopia is an economically emerging country with high population growth and high agricultural pressure on the land, although it possesses valuable and various landscapes in terms of biodiversity and ecosystem services. Ethiopia had limited programs related to integrated approaches in production

landscapes before the current NBSAP (such as REDD+); however, after the updated NBSAP, multiple programmes were implemented (e.g. the Conservation and Sustainable Use of Natural Resources project, the Mainstreaming Incentives for Biodiversity Conservation in CRGE project, Sustainable Land Management, the Bonga Biosphere Reserve Project, etc.), which were set to achieve the national targets and contribute to multiple Aichi Biodiversity Targets, including 1, 2, 3, 4, 5, 6, 7, 9, 10, 13, and 14. These projects are currently underway, and they face certain challenges in implementation, for example, conflicting interests among sectors, low capacity among key implementers, policy-makers and decision-makers occupied with short-term poverty reduction rather than long-term conservation, financial constraints, and lack of technological availability and affordability. Ethiopia established the National Biodiversity Council at the national level, and a new agency – the National Planning Commission – has been mandated to oversee all the planning processes, reporting, monitoring and evaluation of the development agenda in the country. This Commission has made it easy to follow-up on activities, gather data, and collect feedback from all the relevant ministries for implementing the NBSAP.

## Japan

Japan updated its NBSAP in 2012. The degradation of *satoyama* (a local term for “Socio-ecological Production Landscapes”) is one of four identified crises of biodiversity in Japan, as reduced or discontinued human activities no longer maintain the biodiversity only found in *satoyama*. In the NBSAP, various related policies, which were already being implemented, were showcased by multiple related ministries. The Ministry of the Environment launched the “Connecting and Supporting Forests, the Countryside, Rivers and the Sea” Project and selected 10 pilot sites for encouraging efforts to realize ecologically and economically sustainable communities and community-based natural resources management, which contributes to achieving national targets related to Aichi Biodiversity Targets 7 and 14. The NBSAP compiled various policies, while it is still difficult to integrate them in implementation. However, in Japan, biodiversity has already been mainstreamed into other sectors, including by the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Land, Infrastructure, Transport and Tourism, as some of them have strong interest in biodiversity, and have their own biodiversity strategies or policies for their respective missions.



## **Mexico**

Mexico developed its NBSAP in 2016, the Mexican Biodiversity Strategy (ENBioMex) and Action Plan 2016-2030. The Mesoamerican Biological Corridor (MBC), a regional initiative since 2002, which now extends from Southern Mexico to Colombia, is a regional project and one of the landscape-level key actions in the NBSAP. At CBD COP 13 held in Cancun, Mexico in 2014, Mexico launched the NBSAP, which includes the concept of biodiversity mainstreaming. It also developed the National Vision for Integrated Landscape Management and Connectivity in relation to the MBC. This project was designed as a first step toward preparing a national strategy on the subject. A new GEF-funded Sustainable Productive Landscapes Project has also been initiated in 2018 to provide capacity building for local governments, support mainstreaming of biodiversity, harmonize landscape policies and programmes at the local level and help coordinate with federal-level institutions. All of these projects contribute to achieving multiple Aichi Biodiversity Targets and many of the SDGs. Mexico aligned its national targets with the Aichi Biodiversity Targets and the SDGs, which could help in facilitating cooperation from other sectors.

## **South Africa**

South Africa updated its NBSAP in 2015 based on a national assessment of biodiversity and ecosystem services. In relation to integrated approaches in production landscapes, three case studies were considered. One of them was the Biodiversity Stewardship Programme (BSP), which secures land in biodiversity priority areas by entering into agreements with private and communal landowners. BSP was considered one of the outcomes and activities of the NBSAP, and it contributed to achieving multiple Aichi Biodiversity Targets, including 1, 3, 4, 5, 7, 9, 11, 14 and 15. BSP was calculated to be more cost-effective than other protected area approaches but challenges include ensuring sufficient funding and human capacity for its provincial programmes, increased support to landowners, political will and high-level interventions. Including the three case studies presented, the National Biodiversity Research and Evidence Strategy strongly supported science- and evidence-based decision and policy making and developing guidelines or tools for policymakers.

## **(3) Group Discussions**

The workshop included three discussion sessions. The participants were divided into small groups in view of their specialties, countries, region and gender balance. Each group discussed the key questions of each discussion theme. After the group discussion, the presenter from each group presented the key points of the group discussion.

## Discussion A: Success factors and challenges for incorporation of integrated approaches in production landscapes into NBSAPs

### Key Questions:

- *What are the success factors for incorporation of integrated approaches in production landscapes into NBSAPs and implementation in your country? (Success factors)*
- *What are the challenges in incorporation of integrated approaches in production landscapes into NBSAPs and implementation in your country? (Challenges)*
- *What lessons did you learn from your country's and other countries' work in this regard? (Lessons learned)*

### Key findings from discussions:

Following key factors of incorporating into NBSAPs and their implementations were identified. When the countries can deal with these key factors successfully, these will be the success points and when fail or continue working and find difficulty, these will be the challenges.

#### a. Integration of cross-cutting issue among different institution

The linkage or the integration of the institutions are needed in both vertical and horizontal direction. Effective institution or common goals can be set, conduct capacity building for stakeholders depending on each country's circumstances.

#### [Horizontal cooperation]

- Diverse and exhaustive consultation
- Set up the cross-sectoral meetings for integration
- Set the National institution for implementation
- Use upper and common targets
- Use strong political will

#### [Vertical cooperation]

- Enhancing local governance capacity

## **b. Communication and education of society including local communities**

Communication at multiple level and education for all stakeholders are also key in promoting integration. Tailoring messages to different audiences are important points to consider. Especially, involving younger generation is important for sustainability. Science policy interface is important for stakeholders' persuasion.

- The sophisticated sections dealing with agriculture with poor communities living in the land are in charge of communication and education for them (South Africa)
- Science policy interface
- Common language

## **c. Incentives are again at multiple levels for different sets of stakeholders**

Involving the stakeholders and change their behaviour, incentives for them are needed, such as stable livelihood development for local stakeholders (e.g. subsidies, PES system, market certification systems, sense of identity) or incentives for the governments (e.g. legacy, consensus based on scientific data, top down role sharing).

### **[Incentives for the government]**

- Hosting big international conference can help host countries to take good initiatives.

### **[Incentives for local stakeholders]**

- Market certification systems

## Discussion B: Contributions to Aichi Biodiversity Targets

### Key Questions:

#### *Group 1. Assessment and evaluation of the policies/projects*

- *How can assessment and evaluation of the policies/projects' contributions to relevant Aichi Target(s) be done?*
- *Do you have any ideas for better evaluation measures or indicators related to integrated approaches in production landscapes?*

#### *Group 2. Contribution to multiple Aichi Biodiversity Targets*

- *Which Aichi Biodiversity Targets does your country's case study policies/projects contribute to?*
- *Do you have any ideas for setting better global targets related to integrated approaches in production landscapes, including better reflection of the cross-cutting nature?*

### Key findings from discussions:

Across the groups, following areas were discussed. Some key findings in each areas and relevant experiences were identified.

#### **a. Multiple Aichi Biodiversity Targets**

Integrated approaches in production landscapes are related to multiple production activities (agriculture, forestry and fisheries), tourism and local culture, communities and natural resource management. Thus, this approach is related to multiple sectors and contributes to multiple Aichi Biodiversity Targets.

From the countries presentations about integrated approaches in production landscapes, Aichi Biodiversity Targets 4, 5, 7 and 14 are the most relevant to the concept. However, only Target 11 includes the concept of "landscape approach".

#### **b. Assessment and evaluation procedure**

Assessment and evaluation is needed for proving effectiveness of policy implementation and their contribution to the targets.

### **c. Synchronizing among different policy-level goals**

It is important to bring in all different levels of implementing stakeholders together, so that the reporting frameworks, which include assessment and evaluation of the policies or projects, will represent what is happening on the ground. However, it is difficult to synchronize among different policy-level goals (national-international, local-national or local-international). There is a lot happening on the ground but necessarily related to international goals, and scale difference is important.

It is much more difficult to communicate what these goals mean in terms of local priority. There is also the need to contextualize on what is happening in a broad policy setting, to contextualize it to individual country level and the local level realities. It is almost easier to take the local and see how it applies to the global. Take an existing project, targets and see how they align with national or global targets. Followings are the experiences about synchronizing among different policy-level goals.

### **d. Using technology on data capturing**

Information is crucial for assessment and evaluation. There are more technological advancements on GIS, mapping, other cost-effective measures and experts. To use them to capture progress of implementing policy, a less subjective way of capturing progress is needed. There are many databases about the different initiative, find a way of creating a grid and bringing it all together is effective for evaluation.

### **e. Better global target setting**

Integrated approaches in production landscapes contribute to multiple Aichi Biodiversity Targets (especially Targets 4, 5, 7 and 14). However, there are no specific targets to landscape approach except for Target 11 mentioned to landscape a little. When we think about post Aichi Biodiversity Targets, there are some space for suggesting better global target for promoting integrated approaches in production landscapes. Some key findings for setting better global targets are followings:

- SMART: specific, measurable, assignable, realistic and time-related.
- Participatory across different departments, private sectors and local societies.
- Start with a baseline, and define what the baseline.
- Right time-scale targets
- Target 11 could be more specific about the landscape approach and this might help promoting integrated approaches in production landscapes.

### Key Questions:

- What are the opportunities and challenges in developing and implementing policies *related to integrated approaches in production landscapes at the national level?* (*Opportunities and challenges*)
- *What can you do, or what is needed for further incorporation of these approaches into relevant national policies and NBSAPs?* (*Future incorporation*)
- *Do you have any expectations about this matter from the CBD, or related international organizations and networks such as IPSI?* (*Expectations*)

### Key findings from discussions:

Across the groups, following areas were discussed. Some key findings in each areas and relevant experiences were identified.

#### a. Institutions and mechanisms

- Bridging institutions (organizations, regulations, working groups or stakeholders with different positions)
- Institutions involve to a great extent synchronization among different sectors, priorities, cross-sectoral coordination
- Inclusive approach that no one is left behind in the SDG goals
- Local community perspective; value articulation
- Enhancing local governance capacity (sub-national, national, and regional)

#### b. Science and policy interfaces

- Science and policy interfaces as a mechanism in order to build evidence, to inform policymakers to make better decisions and implementations.

#### c. Incentives for ownerships of different set of stakeholders

- All different kinds of incentives in ensuring motivation for different stakeholders to buy into the idea (linking with various value for different stakeholders)
- Focus on what opportunities the target production landscapes provides to each stakeholder. Maintaining these opportunities are directly connected to the incentives of their participation.

#### d. Appraisal mechanism for agreement in and among ministries

- Common understanding about integrated approaches in production landscape
- Environmental accounting
- Inner appraisal mechanism; cost the value of all of the biodiversity and all the various policies which are undertaken to promote biodiversity

#### e. Expectations to international bodies

- Promoting research related to integrated approaches in production landscapes, especially linking to science-policy interface
- Providing platform to engage policymakers, to disseminate the research results
- Creating and providing tailor-made guides for the country on how to integrate the concept including some minimum standard in applying this in the production landscape
- Customized capacity building for various stakeholders (local communities, policymakers, and other kinds of decision makers) to implement integrated approaches in production landscapes at national level
- Clearing house mechanism, which provides matching service for users and providers who can provide specific technical support and capacity building about revitalising particular landscape policy
- Platforms, such as IPSI, side events of CBD or Friends of Biodiversity, to act as forums for information sharing and networking, sharing of learning experiences, strategizing among like-minded counterparts/agencies. It could be countries, agencies or entities which want to work together to promote
- Facilitating trans-boundary approach for larger scale integration. Monitor and provide evidence that the integrated approaches in production landscapes are really working
- Providing toolkits and evidence to do the monitoring, systemize the best practices including information, examples and capacity building and sharing experiences
- Synergy among the Rio Conventions for the landscape management



## (4) Plenary Discussions

At the end of the workshop, plenary discussion session was held to summarize the countries presentations and three discussion sessions. The following key findings of the workshop were presented, discussed and agreed among all participants.

### Where do we stand? (Opportunities and challenges)

#### 1) Institutions

- In multiple level (from local to international)
- The linkage or the integration of the institutions can be both vertical and horizontal
- How to make institutional mandates to be more coherent or to plural approaches
- To get implementation going, we can make extra effort to link our goal to broader goal, other institution's goal, or other stakeholder groups' goal
- Capacity Building

#### 2) Communication & Education

- In multiple level
- Even for the same message, we have to have clear image who (child, youth, policy makers, scientists) we want to communicate with and what kind of messages we want to give
- Science policy interface is important

#### 3) Incentives

- Incentives for different sectors (e.g. market-based, PES, subsidies, identities, policy, amongst others)

### What needs to be done?

(Separate findings for national-level implementation and post-2020 framework integration)

#### 1) Synchronizing national to international goal (also local, national)

- What are the components
- What is evaluated (policy coherence)
- Needs to contextualization
- Value articulation
- Priorities (many stakeholders) don't leave anyone
- Various institutions (organizations, regulations) are present but not functioning well. We can build on these cross-sectoral coordination

## 2) Target setting

- How should it look
- Simple measurable (SMART)
- Assessment must be more comprehensive
- Participatory of different administration in multiple level
- Setting baseline

## 3) What might work

- How data can be captured
- Make use of technology – technology transfer facilitation
- Set regulation in different level
- Bridging institution between different sectors/divisions/agencies
- Science and policy interface for building evidence and informing policy for decision-making
- Incentives (different kinds for different stakeholders)
- toolkits for monitoring and guidance for mainstreaming and implementation customized for local usage, including how to compare internationally
- Cost and value of biodiversity and an integrated approach
- Good crises can be good opportunity!

## Who needs to be engaged? And how?

Expectations from international bodies (CBD, IPSI ...etc.)

- Research information for global policy platform
- Customized capacity building (local/policy maker/matching)
- Information sharing platform (specific technological/ecological support)
- Monitoring and assessment
- How to engage all stakeholders

## 7. Conclusion

An overview of the current status of incorporation and implementation of integrated approaches in production landscapes into NBSAPs has been provided by the findings of this research.

In addition to literature and document reviews, an international workshop involving policymakers from seven governments, which was held to gain further insight and to discuss the incorporation processes and practical implementation status of integrated approaches in production landscapes in NBSAPs, proved useful in deepening contextual understanding and practical implications. The workshop elaborated on issues and identified good practices and challenges concerning incorporation and implementation of integrated approaches in production landscapes, as well as their contribution to Aichi Biodiversity Targets.

The key findings of the research are summarized as follows:

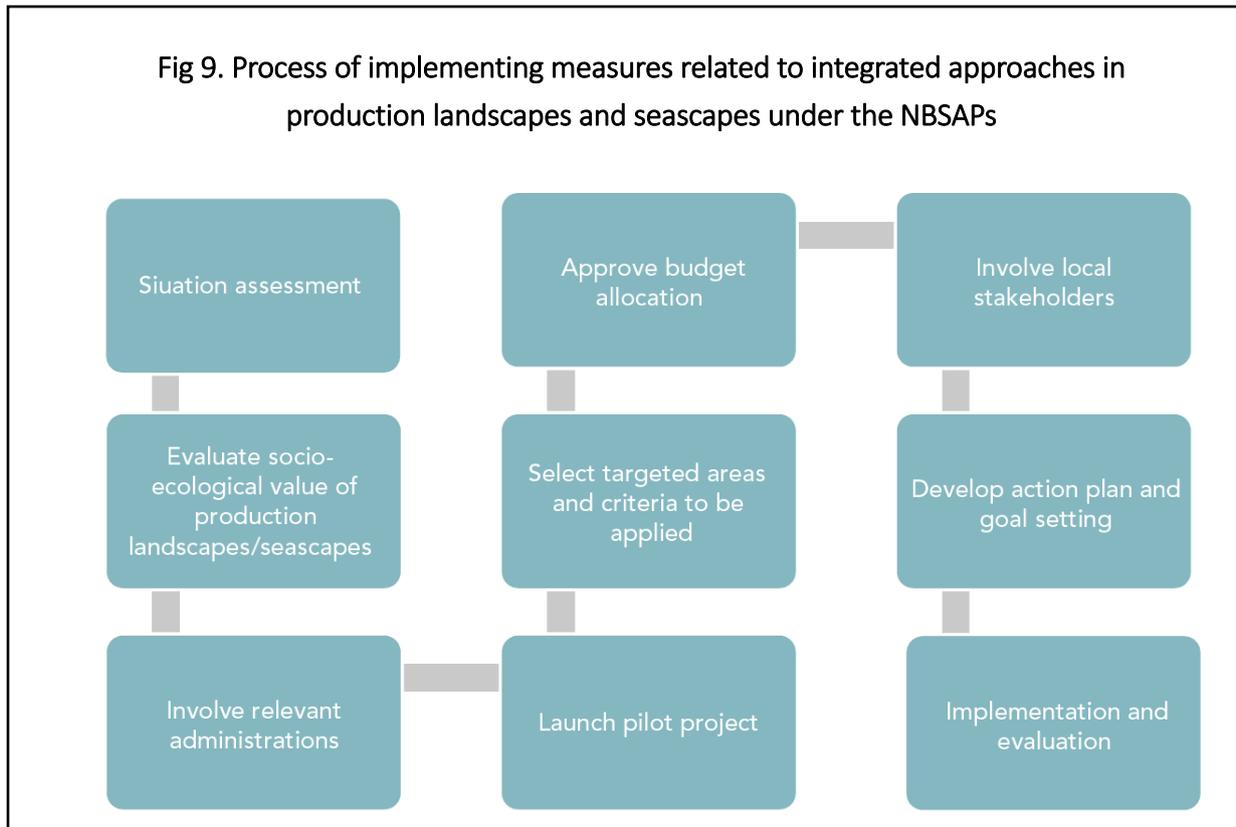
### **(1) Overview of current incorporation of concepts into NBSAPs**

Multiple concepts relate to integrated approaches in production landscapes (e.g., cultural landscapes, GIAHS, SEPLS, the landscape approach, and related traditional management), and such concepts were referenced in about half of NBSAPs. These concepts were well described in the “strategies,” “targets,” and “action plan” chapters, co-occurred with biodiversity mainstreaming, and were well related with ecosystem services. The concepts were most closely related to Aichi Biodiversity Target 4, followed by Targets 14, 15, 11, 5, and 7. There are some regional differences, and some divergence between NBSAPs and ground-level projects.

### **(2) Process of implementing measures for integrated approaches in production landscapes and seascapes and incorporating them into NBSAPs**

The implementing processes of integrated approaches in production landscapes and seascapes measures and incorporation into NBSAPs, though different amongst the participating parties can be classified into two cases: 1) parties, which already have existing policy measures related to the concept will incorporate them into the NBSAP so as to further enhance the implementation of these measures; 2) parties, which although do not have policy measures related to the concept, first mainstreamed the concept into the NBSAP to give mandate and encourage the implementation of measures relating to the concepts. While the process of implementation the measures under the NBSAPs in each country varies, in general it is well-thought-out process involving the following stages (see Figure 9):

**Fig 9. Process of implementing measures related to integrated approaches in production landscapes and seascapes under the NBSAPs**



**(3) Lessons learnt on incorporating and implementing integrated approaches in production landscapes and seascapes in NBSAPs**

Close coordination among different ministries and sectors, and cooperation between different levels – national, subnational and local – are pivotal to the success of incorporating and implementing integrated approaches in production landscapes and seascapes in NBSAPs. For developing the cooperation, multi-institutional cooperation, both vertical and horizontal, communication and education at multiple levels, and different incentives for different kinds of stakeholders are needed. However, there could be challenges such as explaining the complex concept, adjusting to the needs of multiple stakeholders that have their own mandates and incentives. Nonetheless, some advanced approaches were identified among the participant countries as explained above (see 3. Group Discussions) and the key points as summarized in Table 11 below, and these can be showcased as good practices to facilitate other countries’ work towards incorporation. Also, international bodies will be able to support countries by providing a common concept of understanding, customized know-how for implementation, or information-sharing mechanisms (see also Table 1 on Page 4).

#### **(4) Connecting integrated approaches in production landscapes and seascapes to global targets**

It is agreed that integrated approaches in production landscapes and seascapes contribute to multiple Aichi Biodiversity Targets, including Targets 4, 5, 7 and 14, but only Target 11 is specifically related to landscape approaches, and only implies them to a small degree. There are also no specific assessment and evaluation of these approaches currently. Thus there is a need for more specific and evaluable global targets in future to encourage and enhance the implementation of integrated approaches in production landscapes and seascapes.

#### **(5) Enhancing information exchange and capacity building for NBSAP implementation**

For the first time at the workshop, parties got together to share their views on the implementation of NBSAPs focusing on integrated approaches in production landscapes and seascapes and their own contributions toward achieving relevant Aichi Biodiversity Targets. Through this exercise, participating parties collectively identified good practices and challenges in incorporating integrated approaches in landscape management into NBSAPs and the implementation of the NBSAPs, so that these findings could serve as references for other parties. This is expected to be the beginning of a process for SCBD and member parties to exchange learning and experience, as well as serving as a platform for future cooperation to enhance capacity building and mutual learning.

Further details of key findings and good practices shared by the participants of the international workshop through presentations and discussion can be found in *Annex C*.

## 8. The Way Forward

This research provided a number of CBD parties from different regions an opportunity to exchange experiences and lessons learned in incorporation of integrated approaches in production landscapes and seascapes into NBSAPs and their implementation as well as basic information of those status, and to assess their contributions toward achieving relevant Aichi Biodiversity Targets, as well as to discuss possible ways forward at different levels, in particular needs for support. Clearly expressing the importance of focusing on integrated approaches to achieve benefits for nature and societal well-being, workshop participants identified many good practices as well as recommendations, with the hope that that they will be of some help to other parties. This research was intended to be the beginning of a process to exchange knowledge and experience in this regard, as well as to serve as a basis for future cooperation to enhance capacity building and mutual learning. This research report and the workshop report, will be disseminated to the public as hard copy and on-line, including availability to relevant CBD meetings and events.

Building on this research project, in particular needs for support identified through the workshop, UNU-IAS and UT-IR3S are developing plans to further support parties that are implementing or show interest in implementing integrated approaches in production landscapes and seascapes, including through developing relevant supporting materials and tools. These efforts are expected to assist in cooperation between governments and international bodies to promote common understanding of related concepts or approaches, technical know-how for implementation, information-sharing mechanisms, and contributions to the development of effective and measurable global and national targets for the post-2020 period.

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## Annex A: Workshop Programme

### Tuesday 16 January 2018 (Day 1)

09:00-09:30	Registration
<b>Opening Session</b>	
09:30-09:35	Opening remarks
09:35-11:05	Self-introductions Introductory presentations (UT-IR3S, SCBD, UNU-IAS)
11:05-11:15	Group Photo
11:15-11:30	Break
<b>Presentation Session 1</b>	
11:30-12:30	Country presentations (20 min presentation + 10min Q&A* 2 countries) 1. Cambodia 2. Colombia
12:30-13:30	Lunch
<b>Presentation Session 2</b>	
13:30-15:00	Country presentations (20 min presentation + 10min Q&A* 3 countries) 3. Estonia 4. Ethiopia 5. Japan
15:00-15:15	Break
<b>Discussion Session A: Success factors and challenges for incorporation of integrated approaches in production landscapes into NBSAPs</b>	
15:15-17:20	Introduction to Discussion Theme A Discussion of Theme A (participants will be divided into two groups) Break (16:15-16:30) Presentation & discussion Wrap-up
17:20-17:30	Wrap-up
18:00-20:00	Reception Dinner

**Wednesday 17 January 2018 (Day 2)**

9:30-9:45	Introduction of the schedule
<b>Presentation Session 3</b>	
9:45-10:45	Country presentations (20 min presentation + 10min Q&A* 2 countries) 6. Mexico 7. South Africa
<b>Discussion Session B: Contributions to Aichi Biodiversity Targets</b>	
11:00-12:20	Introduction to Discussion Theme B Discussion of Theme B (participants will be divided into two groups) Presentation & discussion Wrap-up
12:20-13:15	Lunch
<b>Discussion Session C: Future steps and revision of NBSAPs</b>	
13:15-15:00	Introduction to Discussion Theme C Discussion of Theme C (participants will be divided into three groups) Presentation & discussion Wrap-up
15:00-15:30	Break (summing up key findings and messages)
15:30-16:30	Wrap-up of discussions
16:30	Closing

## Annex B: List of Participants

### Country representatives

Somaly Chan	Deputy Secretary General, National Council for Sustainable Development/MoE, Cambodia
Someta Chanthy	General Secretariat of National Council for Sustainable Development (GSSD), Vice Chief of Office, Ministry of Environment Department of Biodiversity, Cambodia
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Shoko Arao	Consultant, Regional Environmental Planning Inc.
Hajime Ise	Consultant, Regional Environmental Planning Inc.
Yoichi Sonoda	Consultant, Regional Environmental Planning Inc.
Yusuke Sawa	Head of Programme Development, Birdlife International Tokyo
Tsubasa Iwabuchi	Senior Programme Officer, Birdlife International Tokyo

## Annex C: Key Findings and Good Practices

The good practices of various countries are provided inside the columns.

### 1. Encouraging and promoting incorporation and implementation of integrated approaches in production landscapes and seascapes across the various administrative levels

There is divergence at the national level in understanding the meaning of integrated approaches in production landscapes and seascapes, ecosystem services, or biodiversity conservation across administrative levels including national, subnational, and local. This divergence hinders integration in some cases, and we thus require common understanding.

There is also divergence between the written content of NBSAPs and the implementation status of related projects on the ground. Many projects related to integrated approaches in production landscapes were implemented in various countries with funding from international bodies (such as GEF and FAO); however, most of these projects were not referenced in the respective country's NBSAP. Some projects were ongoing, so that the contribution to their policies were not clear, but there is also a lack of cooperation between various government organizations or institutes and between different levels.

To promote incorporation of integrated approaches in production landscapes into NBSAPs, and to facilitate their implementation, **cooperation between various government organizations and sectors and cooperation between different levels (national, subnational, and local) is crucial**. Four key factors affect achievement of such cooperation, as follows: concept integration, institutional cooperation, communication & education, and incentives. It is challenging to realize these key factors successfully, but some countries have implemented good practices that can support other countries' incorporation.

#### (1) Concept integration

Establishing common understanding of integrated approaches in production landscape across the country's different sectors and levels (national, subnational, and local) is crucial for implementing this cross-cutting issue. The country's leading sector must interpret the concept and put it in each sector's and level's terms.

## (2) Institutional cooperation

Linkage or integration of institutions is needed, both vertically and horizontally. Government organizations can set some effective institution or common goal, conduct capacity building for stakeholders, and so on, and each country must identify suitable measures. Following are some good practices and advanced approaches to achieve institutional cooperation.

### *Horizontal cooperation*

- Start with a loose network

- It is easier to start off as an email group, or a community of practice, and then move towards some form of organization. In South Africa's case, with respect to natural capital, a voluntary group of interested people formed an email or chat group, and took the group forward from that starting point. (South Africa)
- Mexico has voluntary technical committees for landscape management. For a new two-year GEF sponsored project, they planned to strengthen landscape management capacity, by setting legal and institutional conditions to facilitate landscape management and implementation through a much more formal institution. (Mexico)

- Set up cross-sectoral meetings for integration

- The Ministry of Environment in Cambodia created a working group and steering committee for implementation of the NBSAP, inviting technical personnel from various ministries related to biodiversity to discuss issues and then return to influence policymakers. This process worked well for inter-ministry coordination. (Cambodia)
- In the process of spatial assessment before NBSAP revision, a cross-functional steering committee with representatives from various ministries was developed. Members examined and successfully incorporated spatial priorities into the NBSAP. (South Africa)

- Bridge institutions (organizations, regulations, working groups, or stakeholders with different positions), leading to implementation and coordination between different sets of stakeholders. (Examples include Humboldt Institute, Latin America; CONABIO, Mexico; INBio, Costa Rica; SANBI, Africa; the Biodiversity Institute, Korea; the National Biodiversity Secretariat, Brazil; etc.)

- The National Council for Sustainable Development in Cambodia is a higher-level authority than all other government ministries and chaired by the Prime Minister. The mandate of this institution is to develop national policy. They are in the process of developing an Environmental Code, which will include and promote landscape management. This Code

is more powerful than the NBSAP, and offers an opportunity to promote and integrate landscape management in national policy. In addition, this institution helps the Ministry of Environment to implement a Payment for Ecosystem Services (PES) policy, involving the Ministry of Agriculture and Ministry of Rural Development as members of the Council. (Cambodia)

- The National Planning Commission in South Africa is administered by the Presidency, which coordinates all government ministries, and is responsible for the National Development Plan. All inputs from all ministries given mandates, whether Rural Development, Interior, Water, or Environment, must contribute to the National Development Plan. In terms of work plans for particular departments, the government ministers are accountable for the actions prescribed. Each minister must sign a delivery agreement, a performance agreement for ministers, which is unheard of. The system is working, but encounters many issues. Some processes take longer than others, for example the National Accounting. The concept of National Accounting is new and takes time, but there is great pressure to immediately get projects underway. Accountability systems are in place, but significant pressure is placed on line functions in the ministry. Financial and human resources are also limited. (South Africa)
- The National Biodiversity Council in Ethiopia was recently founded by the Minister of the Environment and Climate Change, and is overseen by the Prime Minister. Another new agency, the National Planning Commission, is mandated to oversee the planning process, reporting, monitoring, and evaluation of the country's development agenda. Currently, the Ministry of the Environment and Climate Change uses that mechanism and commission to influence other sectoral ministries. Prior to establishment of this commission, it was very difficult for the Ministry to mainstream biodiversity activities or even gather field data from different sectors, because no mechanism granted the authority to enforce other sectoral ministries. Since the Commission's founding, conditions have become conducive to carrying out activities, gathering data, and collecting feedback from all ministries. The Council meets twice a year, every six months. At meetings, they hear reports from the technical committee, barriers and challenges to implementing the NBSAP, and other environmental and biodiversity issues. If a problem presented is beyond the capacity of the Ministry of Environment and Climate Change to address, it is automatically reported to the Prime Minister, and influence is wielded through the Prime Minister's office. (Ethiopia)

- Legal framework is effective

- The Biodiversity Stewardship Programme (BSP) secures land in biodiversity priority areas by entering into agreements with private and communal landowners. This program is cost-effective, but faces challenges in ensuring sufficient funding and human capacity for provincial activities, increased support for landowners, and political will and high-level interventions. (South Africa)

- Use upper and common targets

- Aichi Biodiversity Targets and SDGs are aligned in several countries. (Mexico, South Africa, Cambodia)
- Some countries take the National Development Plan into account. (Colombia, South Africa)
- The Mexican government developed a National Vision for Integrated Landscape Management and Connectivity. This vision was designed as the first stage of preparation of a national strategy. A new GEF-funded Sustainable Productive Landscapes Project was recently initiated, intended to provide capacity-building for local governments, to support biodiversity mainstreaming, to harmonize landscape policies with programs at the local level, and to help coordinate national-level institutions. (Mexico)

- Use strong political power

- The Minister of Environment, based on an integrated thinking philosophy, strongly supported the foundation of the National Council for Sustainable Development, a bridge institution. (Cambodia)
- The most influential ministerial body (in Colombia, the Ministry of Foreign Affairs) can be asked to email other sectors (Ministry of Agriculture, Industry, and Mines) to request meetings. Such sectors pay greater attention to requests from a ministry with high influence. (Colombia)

- Be mindful of priority conflicts between different sets of stakeholders

- For CBD COP 13, Mexico's Ministry of Environment initiated contact with other sectors to explain basic concepts of biodiversity and to understand the others' perspective and logic. The other sectors are mindful of their official jurisdiction; they are also complying with their mandates. However, their mandates differ from those of the environmental sector. Because numerous conflicts exist, the sectors should begin to build up a common language and break down sectoral barriers. (Mexico)

*Vertical cooperation*

- Enhancing local governance capacity could be key in working toward sub-national, national, and local approaches

- The South African government developed a five-year medium-term strategic framework to bring the NBSAP closer to the community level. Although it remains at the national level, it seeks to incorporate local stakeholders, including traditional parties, chiefs, and various ethnic groups functioning at the local level. (South Africa)

- Incorporate measures at the local level (e.g., LBSAPs)

- Many good practices in integrated measures are conducted in local-level LBSAPs in Japan (prefecture, city, or town), as it is easier to discuss across sectors locally than it is nationally. In one city, the mayor is very keen on biodiversity, and this allows the city to start something new, such as new biodiversity related projects or newly organic farming referenced in their LBSAPs. (Japan)
- Subnational strategies (LBSAPs) helped territorial implementation (Mexico)

**(3) Communication & education**

Communication at multiple levels and education for all stakeholders promote integration. Additionally, even for the same message, a clear image is needed of the audience (e.g., children, youth, policymakers, scientists) and the meaning to be conveyed. In particular, involving younger generations is important for sustainable capacity building. A science-policy interface is important for influence of stakeholders.

*Involving local communities*

- Specific communication & education is needed to involve local communities

- The sophisticated sections dealing with poor communities living in productive landscapes are in charge of communication and education in these communities. (South Africa)
- Involving local communities in monitoring biodiversity in their productive landscapes is one of Mexico's measures to increase involvement. The government provides training on bird watching for producers, who in turn report what they see in their land. This provides both monitoring information and pride on the part of the communities.

(Mexico)

- Offering local residents appropriate alternatives to their current activities is a huge challenge. For example, the Colombian government tried to implement ecotourism in their highlands, but the local community objected. The government considered the plan without consulting the community, a big mistake. The community's reasons for objection were that tourists, who do not know how to treat the ecosystem, would walk where they should not, stepping on plants with important ecological functions and ruining the ecosystems in the process. Because the local community had lived in the area for generations, they knew how to take care of it. The government found their reasoning sound. (Colombia)

### *Science-policy interface*

- Information is crucial for assessment and evaluation. There are increasing technological advancements in GIS, mapping, and other cost-effective measures, and increasing numbers of experts. To use these to determine progress in policy implementation, we require a more objective method. Many databases concern various initiatives; finding a way to link and compile all this information would be effective for evaluation.

- Activities regarding semi-natural grassland in Estonia began with development of a countrywide grassland GIS database in 1999. The Estonian government designated valuable grasslands as conservation areas, and opted to pay subsidies for maintenance and restoration of valuable grassland. EU-funded subsidies began in 2007, along with legal regulation and public awareness-raising activities. As a result of these processes, an NBSAP incorporating the initiative was formulated in 2012, following two years of coordination. By incorporating it into their NBSAP, Estonia was able to set an Action Plan up to 2020 for grassland in implementation of their NBSAP. (Estonia)
- During the planning process, by preparing GIS data and taking country-wide inventory, the value and valuation process of productive landscapes was demonstrated, not only from an economic but also from a socioecological perspective. This helped people understand the land's value and motivated them to make decisions. (Estonia)
- Utilizing expertise and information about the ecosystem services concept facilitated incorporation of a new ecosystem approach into Mexico's NBSAP. (Mexico)
- A presidential order was given in Mexico to develop some kind of legal instrument to stop deforestation. Two government ministries, the Ministry of Environment (SEMARNAT) and the Ministry of Agriculture (SAGARPA), are setting up a geographical information system (GIS) to identify current agricultural frontiers and monitor them in

real time. This ability will be very important in light of likely agricultural projects, for example, avocado plantations. If forest area must be cleared for planting, avocado plantation should not be allowed, and this can be checked by the Ministry of Agriculture in real time.. Mexico hopes this will prove a major change in terms of policy; for the first time, the two ministries intend to implement one policy with great impact. The National Commission on the Knowledge and Use of Biodiversity (CONABIO) will assist in setting up the GIS. (Mexico)

- To oversee biodiversity mainstreaming in Ethiopia, references were prepared for some scientific groups to understand, but personnel did not take their assignments seriously. In such cases, strong and committed managers must aim persistently for results. Processes to measure results are carried out at the grassroots level. Participatory projects, participatory reflection, and community project review at the community, form a foundation to push the scientific community to connect with higher-level policymakers. (Ethiopia)

### *Environmental accounting*

- Environmental accounting is an appraisal method used by the UN or national entities to determine the ecosystem services a country receives from its natural capital
- Value articulation at the community level should not be overlooked; value articulation of the various sectors involved in negotiations should also be considered before a consensus is reached
- Using cost analysis of all the biodiversity and the various policies undertaken to promote it, a case can be made and our view for in the absence of this, this would be the cost of policy inaction

- BIOFIN helps many countries (about 50) analyze the cost of their actions and the amount required for implementation.
- The UN's System of Environmental-Economic Accounting (SEEA) Initiative supports projects to incorporate ecosystem services value into national accounting systems.
- Mexico conducted its National Biodiversity Strategy financial needs assessment that included the results of two prior financial needs assessment exercises for Protected Area (PA) and PES. The exercise also included the costing of implementing 's pledge for the Bonn Challenge: the restoration of 7.5 million hectares by 2020. Taking the cost of restoration per hectare as the minimum cost, the needs assessment ran extremely high. In this sense, the results tells us that it is always cheaper to conserve and sustainably use biodiversity, than to have to restore it later. While this does not means that Mexico

will not have to restore what is already degraded, it would be more cost effective to prevent of further degradation of ecosystems, because restoring them is much more expensive. Mexico hopes to publish and disseminate the results of the needs assessment exercise to raise public awareness. (Mexico)

- South Africa calculated and proved that the Biodiversity Stewardship Programme (BSP) is a more cost-effective approach than designating protected areas. (South Africa)

### *Assessment and evaluation*

- Assessment and evaluation are needed to prove the effectiveness of policies implemented and their contribution to set targets

- In certain cases, governments first determined whether sufficient information was available, and if a regulatory framework was in place for the specific target. Additionally, taking for example Aichi Target 3, which concerns incentives, the target was divided into two components: positive incentives for biodiversity, most of which relate to the environmental sector, and negative incentives, which relate to other sectors. If insufficient information was available, governments determined whether there was a regulatory or legal framework, if there were policy instruments for the target, and whether these policy instruments had been implemented. Governments then asked experts for their opinion on the progress of the targets. There was a priority of implementation by country, and several Aichi Targets did not have any information to evaluate. Governments also conducted the same evaluation for the different states. Most states were sent questionnaires with the specific questions, and were asked to submit their answers with their background. From this, the governments got useful information very different from the national perspective. (Mexico, Estonia)

- Sometimes assessments and methods must differ. In some cases, quantitative targets are unavailable (only general targets), and assessments must thus concern experts and policies or projects. Only information and assessment enable to evaluate the contribution to certain targets. Accepting this, a relatively indirect assessment can be conducted. In other cases, quantitative targets (for example, protected areas or restoration points) enable very direct assessments.

- In its most recent report, Estonia assessed some available studies and analysis (not all were complete). It is rather difficult to conduct massive studies for each assessment. (Estonia)

#### (4) Incentives for participation

Involving and influencing the behavior of stakeholders requires incentives for them, such as stable livelihood development for local stakeholders (e.g., subsidies, PES system, market certification systems, sense of identity) or government incentives (e.g., legacy, consensus based on scientific data, top-down role sharing).

##### *Incentives for government*

- Environmental accounting, such as calculating the cost and value of biodiversity or ecosystem services, can be used to influence government sectors or political decisions (see p. C-8)
- Hosting large international conferences can help the host countries enact good initiatives

- CBD COP 10 in Nagoya led to the foundation of the Satoyama Initiative (Japan)
- CBD COP 13 in Cancun was key in bringing biodiversity mainstreaming to the attention of various sectors, and also mobilized significant energy, resources, and political will toward success in incorporating integrated approaches in production landscapes and mainstreaming other sectors into the NBSAP. Following this trend, the National Vision for Integrated Landscape Management and Connectivity was developed. (Mexico)
- UNFCCC COP 17 in Durban was key for a massive awareness and advocacy campaign in the country. (South Africa)

##### *Incentives for local stakeholders*

- Market-based incentives

- Rural financial institutions provided with an environmental perspective can offer development or business loans for sustainable production activities. To access these loans or financial mechanisms, local stakeholders would have to prepare a landscape management plan. This landscape management plan identifies priority activities to preserve environmental services, climate-smart activities, and any other initiatives; stakeholders can access financial incentives if their activity and business plan are compatible with the landscape approach. (Mexico)
- Some Japanese communities are trying to re-introduce locally extinct birds like the ibis or stork. To re-establish the bird community, they require a decent area of sustainably managed paddy fields, forest, and grassland. Once the bird community is re-established, the local people can expect an influx of tourists, and can sell their sustainably produced rice at a higher price because of its connection to the birds. This process has sparked

the interest of some cities and municipalities in landscape conservation. The birds are a flagship for the community that attract outsiders' attention. Some people involved in the initiatives hope to contribute to nature conservation, others to community development. They have succeeded in creating added value for their actual agricultural product by applying a label, even endorsement by the local government and farmers' association. These approaches are landscape approaches; however, it is unclear whether the local people are aware of the landscape approach concept. (Japan)

- "Cultural landscapes" can be given value and used with marketing purposes. (EU)

- Subsidies

- EU subsidies for agricultural production also request each farmer to follow certain rules for "greening" the agricultural landscape to receive the per-hectare subsidy. Different approaches to "greening" include leaving areas with natural vegetation, incorporating landscape elements, restricting the size of fields, and using certain fertilizers and chemicals. Most farmers take these measures not for the landscape, but for the money. They might not actually understand the concept behind it. In addition, rural development plan is in place, which provides scheme of agri-environmental measures, including support for semi-natural grassland management (Estonia)

- Payment for Environmental Services (PES)

- Cambodia does not yet have national legislation concerning PES, but the Prime Minister has given permission to construct the pilot site. A national PES policy will be developed based on the information from and experiences of the pilot site. Because Cambodia has no biodiversity acts, laws, or regulations, their NBSAP will function as the legal instrument. In the NBSAP, one thematic area about resource mobilization and also about sustainable use, and ecosystem functions, the wider ecosystem functions have to be returned back. From these two experiences of pilot sites, they realize that two different sites, different PES. Two different methods will be applied, based on the experiences of Costa Rica, the first country to conduct PES successfully. At the first site, participation will be voluntary. At the second site, it will be mandatory. Because the latter site's services will all come from the fresh water supply held by the company, they will be easier to manage. However, at the former, almost all landowners will be members of the community. Local communities will be provided with the technical support to expand their land and productivity, then to develop techniques to maintain their productivity using the smallest-scale activity. Cambodia still faces challenges concerning PES, namely how to manage the money they will receive, what mechanism to adopt, how much benefit will return to the local community, how much will go to conservation, and how much

will go to the governing ministry. The economy and national assets are being examined, and mechanisms being explored and discussed. (Cambodia)

- Mexico conducts a successful PES system for PAs, and is expanding beyond hydrological services to include biodiversity and carbon sequestration. Some adjustments in the policy must still be made to enable support for some local communities. (Mexico)

- Cultural identity

- Estonians support the restoration and maintenance of semi-natural grassland based on their cultural identity. Some studies indicate that the Estonian identity is closely tied to the traditional culture and landscapes. When asked a very common question about grassland management, the importance of the habitat, Estonians describe and understand biodiversity quite well, and also consider it very important to preserve the cultural landscape, or the landscape as they remember it from history. What they preserve is considered a heritage from previous generations. This resembles the connection between people, not something far and enigmatic. Nature touches people. This perspective is also the result of communicating these values throughout the years. (Estonia)

- Focus on the opportunities the target production landscapes provide to each stakeholder. Maintaining these opportunities is directly connected to incentives for stakeholder participation.

- Colombian production landscapes give them the opportunity to create ecotourism sites; people benefit from this by establishing sites and providing service to tourists. (Colombia)
- It is necessary to identify the type of production landscape and the priorities (long- and short-term) of the local community. Policy development and implementation are long-term goals, not short-term. In the local community, capacity to envision long-term goals and benefits is not normally high. Locals want to see short-term results. For example, PES is a very long process. It is helpful, but when designing such initiatives, an alternative for locals to rely on is needed. (Cambodia)

## 2. Mainstreaming integrated approaches in production landscapes globally

There are some regional differences in incorporation of concepts. Central and Western European countries focus on landscapes, whereas other regions focus on specific local sites expressed in local terms. However, the regions apart from Central and Western Europe showed no significant differences among any of the groups. In some countries, additional key words or local names must exist that specifically express the concept of integrated approaches in production landscapes. Furthermore, even if a concept is expressed using the same word, its meaning may differ, owing to the ambiguity of the term “cultural landscape” (Jones 2003, Plieninger and Bieling 2012). Summarizing and categorizing all related concepts would demand an enormous effort of cultural anthropology. However, a practical integrated approach to enhancing, maintaining, or revitalizing socio-ecologically valued production landscapes may differ by site (even within the same country), just as there are various local names and differences in varying regions. Compilations of local case studies on these concepts and practices, such as those completed by IPSI (e.g., UNU-IAS and IGES 2015, UNU-IAS and IR3S/UTIAS 2016), would help provide a deeper understanding of the concepts and assist in implementing appropriate approaches.

To promote further incorporation of the concept of integrated approaches in production landscapes, it is necessary to consider that many countries already understand the concept. However, their understanding may be based on their own ideas, as expressed in different local terms. Thus, it appears that different approaches will be needed to promote further incorporation of the concept in different countries. On this point, international bodies are expected to provide information about common understanding and customized implementation know-how to each country through information sharing channels, as well as better targets for evaluating and reporting on these integrated approaches.

### *Providing common understanding*

- Achieve synergy between the Rio Conventions for landscape management
- Monitor and prove that integrated approaches in production landscapes work
- Promote or facilitate research concerning integrated approaches in production landscapes, especially linking to the science-policy interface that can inform broader policy audiences
- Find and provide common terminology for concepts (this task is expected of IPBES)
- Facilitate a cross-boundary approach

- The EU is divided into four landscape groups according to habitat/biogeographical regions: working groups have been set up to help countries prioritize their action. (Estonia)
- African regional protocols include Trans-frontier Conservation Areas and the Boundless Southern Africa brand. (South Africa)

#### *Providing customized implementation know-how*

- Create and provide tailor-made guides for each country on how to integrate the concepts, including some minimum standard for applying concepts in the production landscape
- Conducted customized capacity building for various stakeholders (local communities, policymakers, other decision makers, etc.) to implement integrated approaches in production landscapes at the national level
- Provide toolkits and evidence for monitoring, and systemize best practices, including information, examples, and capacity building/sharing experiences

#### *Information sharing channels*

- The clearinghouse mechanism, which provides a matching service for users and providers who can provide specific technical support and capacity building for revitalizing specific landscape policy
- Platforms such as IPSI or auxiliary events of CBD or Friends of Biodiversity, which act as forums for information sharing and networking, dissemination of learning experiences, and strategizing among like-minded counterparts/agencies. These could include countries, agencies, or entities that wish to work together to promote the incorporation and implementation of the integrated approaches in production landscapes

#### *Target setting*

- Targets set should be SMART: Specific, Measurable, Assignable, Realistic, and Time-related. “Specific” in terms of landscape approaches in production landscapes is the most important factor
- Target setting must be participatory across departments, private sectors, and local societies. People must be engaged in much more cohesive manner to ensure that reporting, assessment, and implementation are more comprehensive
- The baseline should be defined first, such as using GBO

- The right time scale should be set for targets
- Target 11 could be more specific about the landscape approach, and this might help promote integrated approaches in production landscapes. The production landscape concept could be made a strategic goal in itself, and targets should adopt this approach and include relevant actions to manage these landscapes

The concepts of integrated approaches in production landscapes were not well incorporated into NBSAPs as whole concepts; however, they were well incorporated partially. At least one of the four characteristics of SEPLS received reference in almost all NBSAPs; some of those characteristics showed co-occurrence with the terms of promotion. However, the characteristic of “dynamic mosaics of habitats and land and sea uses,” a landscape characteristic of SEPLS, was rarely incorporated into NBSAPs. Many countries considered the need for activities related to sustainable production, ecosystem services, and local culture and knowledge; however, they did not also consider dynamic mosaics of production landscapes. One possible way to promote penetration of the concepts is to support adoption of rarely referenced characteristics. This could help penetration of the concepts as a whole.

It is not clear why “dynamic mosaics of habitats and land and sea uses” was rarely referenced in the NBSAPs; neither is it clear how this characteristic could be promoted. Some studies have demonstrated that landscape heterogeneity strongly relates to biodiversity—under certain conditions positively—in agricultural landscapes (e.g., Benton et al. 2003, Bennett et al. 2006, Wilson et al. 2017). Regarding the relationship between policies and dynamic mosaics or landscape heterogeneity, one assessment of policy impacts on the mosaic of agricultural landscapes found that improving agri-environment schemes could offset the negative consequences of support payments for the landscape mosaic (Brady et al. 2009). In addition, policy measures to enhance biocultural diversity in production landscapes, which comprise dynamic mosaics of diverse land-use patterns, have been proposed in the context of local food networks (Plieninger et al. 2017). However, no policy measures that are effective in enhancing both heterogeneity and biodiversity in production landscapes have been suggested clearly. This could be one reason for the infrequent reference to dynamic mosaics in the NBSAPs.

#### *Dynamic mosaics of habitats and land and sea use*

- Examining effective policy measures for enhancing both heterogeneity and biodiversity might encourage governments to introduce the concept into their NBSAPs and their implementation plans

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For the related activities of integrated approaches in production landscapes, please refer to the International Partnership for the Satoyama Initiative (IPSI) website at <http://satoyama-initiative.org> .

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