

# Ecosystem-based adaptation and adaptation planning processes addressing ecosystems: overview, good practices and lessons learned

## BACKGROUND

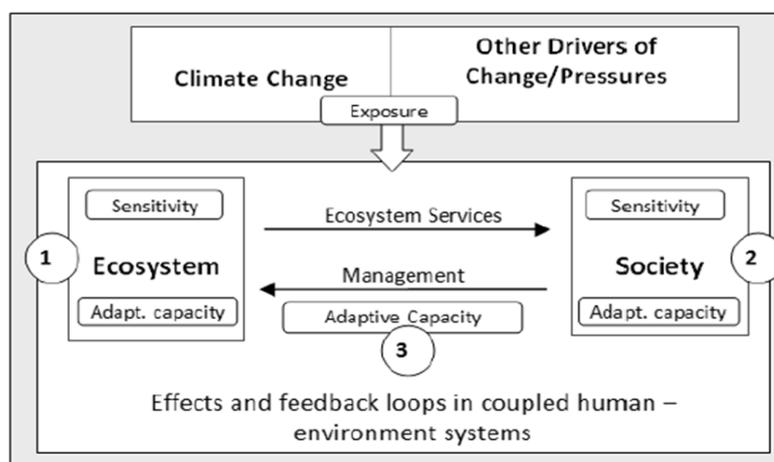
This synopsis presents the role of ecosystems (including forests) in adaptation and highlights good practices and lessons learned regarding adaptation planning processes addressing ecosystems, as well as ecosystem-based adaptation. The synopsis is drawn from the findings of the following documents prepared under the Nairobi work programme (NWP):

Documents	Information source
“Good practices and lessons learned in adaptation planning processes addressing ecosystems, human settlements, water resources and health, and in processes and structures for linking national and local adaptation planning: a synthesis of case studies” ( <a href="#">FCCC/SBSTA/2015/4</a> ; 2015)	170 case studies contributed by Parties and NWP partner organizations.
“Synthesis report on methods and tools for, and good practices and lessons learned relating to, adaptation planning processes addressing ecosystems, human settlements, water resources and health, and good practices and lessons learned related to processes and structures for linking national and local adaptation planning” ( <a href="#">FCCC/SBSTA/2014/4</a> ; 2014)	Submissions from two Parties and 18 NWP partner organizations.
“Report on the technical workshop on ecosystem-based approaches for adaptation to climate change” ( <a href="#">FCCC/SBSTA/2013/2</a> ; 2013)	The workshop was attended by 73 representatives of Parties and relevant international, intergovernmental and non-governmental organizations.
“Ecosystem-based approaches to adaptation: compilation of information” ( <a href="#">FCCC/SBSTA/2011/INF.8</a> ; 2011)	Literature review.

### What is the relationship between ecosystems and adaptation?

Ecosystems affect the climate, but climate change also affects ecosystems, their functions and the many benefits and services they provide to people, as well as the ability of ecosystems to regulate water flows and cycle nutrients (see Figure 1).

**Figure 1 - Effects and feedback loops in coupled human-environment systems**



Source: Adapted from Locatelli B, Kanninen M, Brockhaus M, Colfer CJP, Murdiyarso D and Santoso H. 2008. *Facing an Uncertain Future: How Forests and People Can Adapt to Climate Change*. Bogor: Center for International Forestry Research. Available at <http://www.cifor.org/online-library/browse/view-publication/publication/2600.html>.

Healthy ecosystems can play a major part in increasing resilience, helping people to adapt to climate change, and in reducing climate-related risk and vulnerability through the delivery of the range of services that play a significant role in maintaining human well-being.

### **What is ecosystem-based adaptation?**

- Ecosystem-based adaptation uses biodiversity and ecosystem services in an overall adaptation strategy. It includes the sustainable management, conservation and restoration of ecosystems to provide services that help people adapt to the adverse effects of climate change<sup>1</sup>.
- Ecosystem-based adaptation can be cost-effective, generate social, economic and cultural co-benefits, and contribute to the conservation of biodiversity.

### **Case study 1 - Community-based Ecological Mangrove Restoration (CBEMR) in Thailand**

The International Union for Conservation of Nature (IUCN) has promoted the CBEMR method developed by the Mangrove Action Project and uses hydrological restoration to reinstate mangroves in former shrimp ponds. Mangrove forests ensure protection against tropical storms and sea level rise, thus increasing the resilience of vulnerable coastal communities in the face of climate change. The project is also expected to raise awareness and build the capacity of communities in natural resource management, as well as to support the diversification of livelihood activities.

## **KEY FINDINGS**

The table below presents emerging good practices and lessons learned on the various aspects of adaptation planning processes addressing ecosystems, as well as key recommendations to scale up ecosystem-based adaptation planning and actions.

<b>Building an ‘actionable’ knowledge base</b>	
<b>How to build an ‘actionable’ knowledge base?</b>	<ul style="list-style-type: none"> <li>• Establish a structured and iterative knowledge co-production process that:               <ul style="list-style-type: none"> <li>* Combines traditional and contemporary scientific sources, by engaging community-based knowledge holders, as well as natural and social scientists;</li> <li>* Involves all members of a community (including men, women and indigenous people).</li> </ul> </li> </ul>
<b>Which co-benefits can be expected?</b>	<ul style="list-style-type: none"> <li>• Locally appropriate, and economically and socially viable solutions are identified to build the resilience of natural and societal systems.</li> </ul>
<b>Planning equitable and locally relevant ecosystem-based adaptation actions</b>	
<b>How to ensure inclusiveness?</b>	<ul style="list-style-type: none"> <li>• Establish participatory decision-making that is:               <ul style="list-style-type: none"> <li>* Decentralized to the lowest accountable level;</li> <li>* Includes women, as well as poor, vulnerable and marginalized communities, by using culturally appropriate tools and strategies;</li> </ul> </li> <li>• Use gender-sensitive tools and strategies in vulnerability and impact assessments and learn about the existing practices of women.</li> </ul>
<b>How to work at the right scale?</b>	<ul style="list-style-type: none"> <li>• Recognizing the functional scale of the ecosystem concerned, working across administrative or national boundaries, including through intergovernmental cooperation, may be necessary in order to:               <ul style="list-style-type: none"> <li>* Access relevant information and climate data;</li> <li>* Coordinate activities;</li> </ul> </li> <li>• Intergovernmental agencies, regional centres and networks can play a critical role in facilitating such transboundary cooperation and coordination.</li> </ul>
<b>What about economic diversification?</b>	<ul style="list-style-type: none"> <li>• Economic and livelihood diversification serves to enhance the resilience of people, but it might also help to address the resilience of ecosystems by reducing the drivers of degradation.</li> </ul>

<sup>1</sup> Convention on Biological Diversity. 2009. *Connecting Biodiversity and Climate Change Mitigation and Adaptation: Report of the Second Ad Hoc Technical Expert Group on Biodiversity and Climate Change*. Montreal: Convention on Biological Diversity.

## **Case study 2 - Development of indicators to follow-up climate change impacts on Pyrenean biodiversity**

The Pyrenees Climate Change Observatory aims to understand the climate evolution in the Pyrenees, limit related impacts and adapt to the effects of climate change by defining appropriate strategies for the different sectors involved. Furthermore, its objective is to protect the most fragile natural areas and avoid negative impacts, such as decrease of the rich Pyrenean biodiversity. In terms of concrete action, a Pyrenean floristic atlas was developed and a follow-up network for highly vulnerable plant species was established in order to study the effects of climate change. Partners and associates originate from Andorra, France and Spain.

### **Integrating ecosystem-based adaptation in planning at all governance levels**

#### ***What does it take?***

- Consider the functions of ecosystems when conducting climate change vulnerability or risk assessments;
- Enhance synergies and cooperation:
  - \* Across various sectors and cross-cutting areas (e.g. water, agriculture, health and forestry);
  - \* Between top-down and bottom-up approaches (e.g. linking local learning with national policy and strategies);
  - \* Among donors and non-governmental organizations;
- Ensure high-level coordination among multiple sectors that have convening power and leadership, as well as responsibility over natural resources, in the framework of an effective institutional set-up;
- Include ecosystem-based adaptation in all existing development plans and sectoral strategies;
- Maintain the high time commitment from all actors throughout the stages of adaptation planning and balance diverse expectations by remaining flexible and inclusive;
- Provide financial resources, including through sustainable financial schemes;
- Develop an education programme on ecosystem-based adaptation.

#### ***Which co-benefits can be expected?***

- Local good practices will be scaled up to the national level;
- Plans and strategies that may otherwise negatively impact on adaptation initiatives will be better aligned;
- Financing will be secured;
- Implementation of adaptation actions will be facilitated as a result of effective coordination among key stakeholders.

### **Scaling up ecosystem-based adaptation planning and action**

#### ***What does it take?***

- Undertake capacity-building activities (e.g. training of trainers) and develop additional training courses to institutionalize ecosystem-based adaptation at different levels;
- Establish ecosystem principles as one of the criteria for adaptation-specific funding to ensure the provision of funding for such approaches;
- Support and fund pilot ecosystem-based adaptation initiatives;
- Develop monitoring and evaluation, including through long-term monitoring programmes, in order to demonstrate the real benefits associated with ecosystem-based adaptation.

# POSSIBLE NEXT STEPS FOR ENHANCED KNOWLEDGE SUPPORT

---

## Making knowledge more relevant and accessible

- Developing targeted knowledge products to facilitate the planning and implementation of ecosystem-based adaptation, including:
  - \* A compilation and synthesis of existing guidelines on ecosystem-based adaptation;
  - \* A compilation and synthesis of existing guidelines on integrating ecosystems into climate change vulnerability assessments;
  - \* A synthesis of best practices in, and an evidence base for, ecosystem-based adaptation (including lessons learned and benefits), by capturing lessons learned from pilot initiatives with respect to institutional frameworks, knowledge needs, donor coordination and results frameworks;
  - \* A synthesis of the best practices in indigenous and traditional knowledge linked with biodiversity, sustainable land management and adaptation.
- Fostering dialogue between policymakers and expert organizations on knowledge production and dissemination, as well as between policymakers and the private sector;
- Facilitating South–South cooperation to share best practices and lessons learned, including through:
  - \* Establishing and promoting champions on ecosystem-based adaptation;
  - \* Engaging regional platforms and networks in the regional dissemination of best practices, as well as in the enhancement of dialogue .

## Addressing critical knowledge gaps

- Enhancing understanding of methodological, technical and scientific aspects related to ecosystem-based approaches for adaptation, including with respect to:
  - \* Information on existing vulnerability assessment tools and the experience of developing the tools that consider ecosystems;
  - \* Access to data and downscaled climate data analysis to promote a better understanding of vulnerability and future risk of various ecosystems to climate change;
  - \* Assessment of how ecosystem-based adaptation is integrated into climate change adaptation strategies;
  - \* Guidance on developing robust indicators to monitor and evaluate ecosystem-based approaches for adaptation.

For further information, the [Adaptation knowledge portal](#) provides access to:

- Documents [FCCC/SBSTA/2015/4](#), [FCCC/SBSTA/2014/4](#), [FCCC/SBSTA/2013/2](#) and [FCCC/SBSTA/2011/INF.8](#) ;
- Detailed [case studies](#) on ecosystem-based adaptation and adaptation planning processes addressing ecosystems;
- Further information on [tools and methods](#) for ecosystem-based adaptation and adaptation planning processes addressing ecosystems;
- [Additional knowledge resources](#).