

# Forest-based Climate Change Adaptation

## Lessons Learned and the Way Forward

### BACKGROUND

The rapidly warming climate is the single biggest existential challenge to the global community today. Its manifestations are many and include rising temperatures, changing rainfall patterns, prolonged dry seasons, and periods of intense precipitation. Frequent extreme weather events bring in their wake natural disasters like droughts, cyclones, floods, and landslides in mountainous regions. The impacts vary from region to region and across ecological systems. Asia — stretching from the equator to the north pole, with the world's longest and highest mountain ranges, a number of large water bodies and deserts, forests of all descriptions, and dense human population largely dependent on rain-fed agriculture — is one of the most vulnerable regions to climate change.

As agreed under the UNFCCC, all countries are expected to mainstream climate change mitigation and adaptation measures into policy responses. Mitigation is defined as intervention to reduce greenhouse gas emission sources, while adaptation is actions that are taken to anticipate the adverse effects of climate change and take relevant and useful measures to avoid or lessen the impacts they can cause and take advantage of opportunities that change may offer.

Forest restoration activities over degraded and deforested lands result in the sequestration of atmospheric carbon dioxide and thereby contributes to climate change mitigation. Sustainable forest management — which limits annual harvesting and provides wood that can replace petrochemicals, metals, and cement with high carbon footprints — leads to climate change mitigation that can be sustained over generations. Reducing emissions from deforestation and forest degradation is one of the most important climate change mitigation measures that has found favor in many developing countries and is actively being promoted through Climate Finance.

This policy brief highlights the collective discussions identified from the short-term training course on Forest-based Climate Change Adaptation (FBCCA) organized from May 3 to 7, 2021.

### Key Messages

1. FBCCA leads to reduced vulnerabilities of forest ecosystems while also reducing the vulnerabilities of forest dependent communities arising out of the impacts of climate change on forests.
2. Mitigation measures overshadow adaptation in the forestry sector as raising money is more difficult for adaptation projects.
3. The implementation of FBCCA is hampered by continuing deforestation and degradation of forests across the developing world.
4. Lack of cross-sectoral integration between forestry and other relevant sectors is limiting adaptation to climate change in forests.



## FOREST-BASED CLIMATE CHANGE ADAPTATION

Even with the best mitigation efforts, a certain degree of climate change is unavoidable, and it is critical to adapt to it. There are two main components under Forest-based Climate Change Adaptation (FBCCA): “adaptation for forest” and “forest for adaptation.” The former refers to reducing the vulnerability of forest ecosystems to the impacts of climate change such as forest fires, outbreaks of forest insects and pests, infestation of invasive species, loss of biodiversity, and soil and moisture losses in forests. The latter refers to reducing the vulnerabilities of forest-dependent communities arising out of the impacts of climate change on forests. Both aspects of adaptation need sound Sustainable Forest Management (SFM) containing the following core elements<sup>1</sup>:

- Ensure forest diversity, health, and vitality are not adversely affected.
- Accelerate rehabilitation and forest restoration.
- Minimize forest fragmentation and enhance landscape consolidation.
- Adopt integrated forest fire management practices by emphasizing preventive measures.
- Establish a sound pest, disease, and invasive species management system.
- Adopt the principles of reduced-impact logging in all harvestings.
- Choose proper and generally native species to raise on plantations.

## NATIONAL ADAPTATION PLANS (NAPs)

National Adaptation Plan (NAP), developed under the Cancun Adaptation Framework (CAF), is a formulation of adaptation initiatives at the country level to reduce vulnerability and promote resilience in each identified priority sector exposed to climate change. The NAP offers project-based solutions to the countries’ adaptation needs identified both in the medium and long term. The status of the NAP in AFoCO Member Countries is shown in Table 1. Analytical approaches to the forests and forestry sector in the NAPs are required.

**Table 1. Status of National Adaptation Plans (NAPs) in AFoCO Member Countries**

| Status  | Countries  |
|---|--|
| Implementation  | Mongolia, Republic of Korea, Timor-Leste, and Viet Nam           |
| Adopted   | Indonesia and Myanmar  |
| Preparation   | Bhutan, Cambodia, Kazakhstan, Lao PDR, Philippines, and Thailand |
| No NAPs/other adaptation approaches   | Brunei Darussalam and Singapore                                  |
| <i>*Countries that endorsed the National Adaptation Programme of Action (NAPAs)</i> | <i>Bhutan, Cambodia, Lao PDR, Myanmar, and Timor-Leste</i>       |

### BOX 1. Training Summary

The training course entitled ‘Forest-based Climate Change Adaptation and Practices’ was virtually organized from May 3 to 7, 2021, and welcomed a total of 44 participants from 12 AFoCO Member Countries: Bhutan, Brunei Darussalam, Cambodia, Indonesia, Kazakhstan, Mongolia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, and Viet Nam.

Ten valuable lectures were contributed by the lecturers from various organizations including AFoCO Secretariat, Chiang Mai University, CIFOR, Kasetsart University, ITTO, and The Oscar M. Lopez Center of the Philippines.

The objectives of the training are to:

- provide participants with in-depth knowledge of the policies and regulatory frameworks for developing and managing climate change adaptation strategies;
- share practical cases and experiences of Member Countries; and
- discuss opportunities and challenges and establish possible recommendations reflecting lessons learned.

## POLICY HIGHLIGHTS ON FBCCA IN AFoCO REGION

The problem statements of each country on the implementation of FBCCA were discussed in detail during training. The core problem at the regional level is a “Lack of techniques and financial support to develop the FBCCA practices,” under which three interventions were highlighted as major causes to address (Figure-1).

### 1. Mitigation overshadows adaptation.

All the Member Countries have either adopted a NAP/ NAPA or adaptation-related policies or are in the process of doing so. Although adaptation projects/ activities in forest sectors are often included in these adaptation strategies, successful case studies have rarely been recorded. As the training participants shared a common understanding, the forestry sector is still considered in “a piecemeal manner” in most national and sub-national adaptation strategies<sup>1</sup>, and no attention has been paid to the development of sound adaptation methodologies in the forest sector<sup>2</sup>. As a result, forest-based adaptation is still predominated by forest-based mitigation with adaptation as a subsidiary benefit.

### 2. Improper/adaptation-free land use planning accelerates deforestation and hinders FBCCA at the national level.

All societies recognize the appropriate use of land in human settlements as important. Still, as land values increase over time, deviations from norms occur in many places, the commonest of which is the expansion of agriculture and habitation into neighboring forest lands, causing deforestation and degradation. This makes both forests and communities more vulnerable to the impacts of changing climate. During training, trainees identified the underlying causes from AFoCO Member Countries, and it was suggested that inter-sectoral coordination is essential for reducing improper and adaptation-free land use and thereby strengthening adaptation to climate change. For instance, at the local level, integrated farming practices and landscape approaches could be applied to reduce agricultural expansion into forests, which leads to the loss of forest area and carbon sinks. At the same time, sustainable financing mechanisms, technical know-how, and expertise are still needed to address improper land use at the national level.

### 3. Deforestation and forest degradation still exist as major issues.

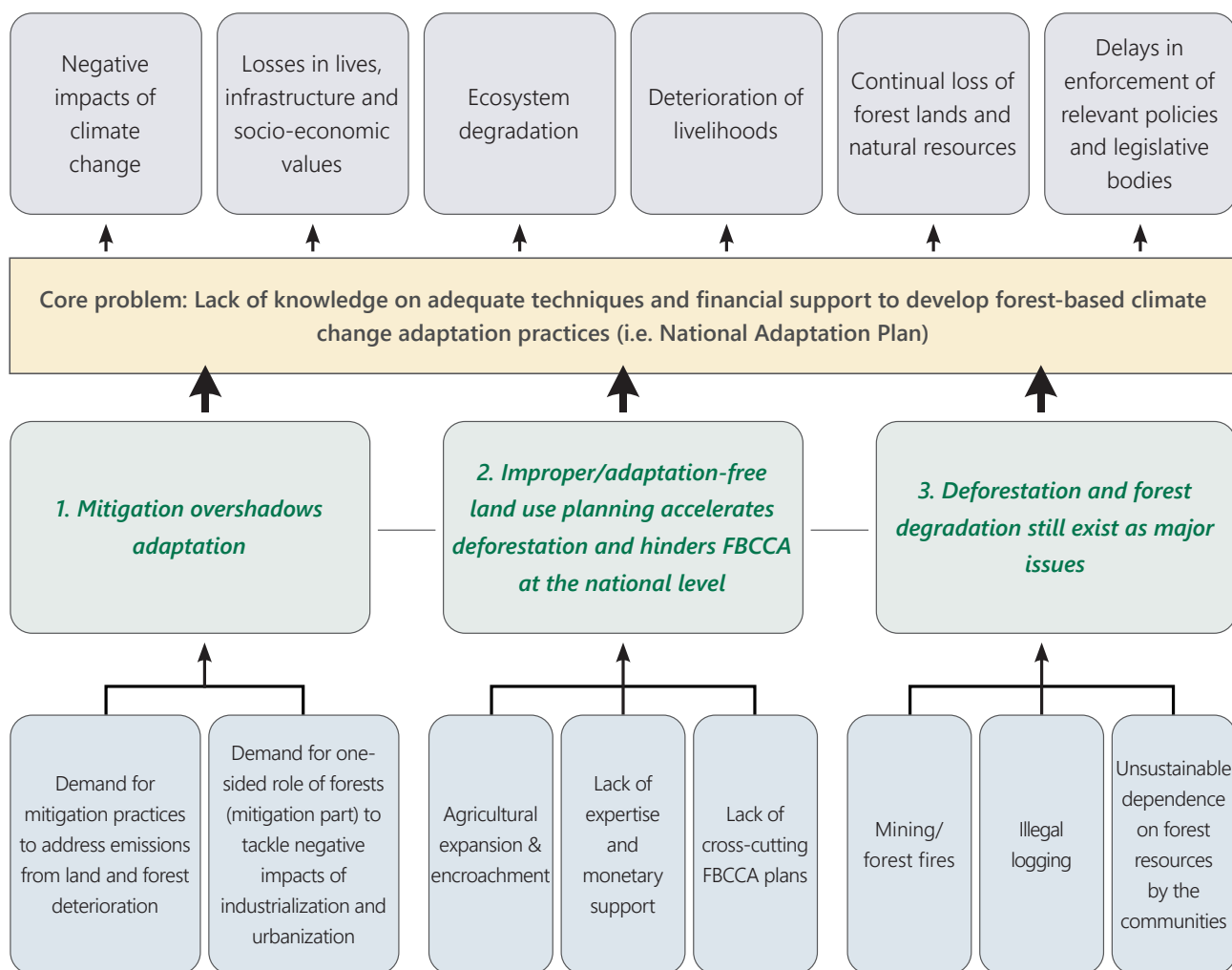
Deforestation and forest degradation, which release carbon dioxide and methane into the atmosphere, are leading causes of climate change. They exist as immense challenges in most developing countries, where the livelihood of a large section of people depends on forests and land-based activities. Excessive extraction of firewood and illegal trade in timber are major causes of forest degradation across the developing world. Forest fires during prolonged dry seasons and extreme heat caused by the changing climate, as well as mining without effective monitoring measures are other major causes of deforestation across the region.



<sup>1</sup> RECOFTC; FAO; UNEP. 2012. Forest and Climate Change Adaptation in Asia. Available at: <https://www.recoftc.org/publications/0000048?t%5B0%5D=93&t%5B1%5D=82&page=1&p=browse>

<sup>2</sup> Locatelli, B., M. Kanninen, M. Brockhaus, C.J.P. Colfer, D. Murdiyarto, H. Santoso. 2008. Facing an uncertain future: How forests and people can adapt to climate change. Forest Perspectives No. 5. Center for International Forestry Research (CIFOR), Bogor. Available at: [www.cifor.org/publications/pdf\\_files/Books/BLocatelli0801.pdf](http://www.cifor.org/publications/pdf_files/Books/BLocatelli0801.pdf)

**Figure 1. Problem Tree on FBCCA in the AFoCO Region**



Source: Interventions from 12 Member Countries at the AFoCO Short-Term Training Course on Forest-based Climate Change Adaptation and Practices, 3-7 May 2021

## THE WAY FORWARD

Forest-based Climate Change Adaptation (FBCCA) leads to reduced vulnerability of forest ecosystems to the impacts of climate change, such as forest fires, outbreaks of forest insects and pests, infestations of invasive species, loss of biodiversity, and soil and moisture losses in the forests. It also reduces vulnerabilities of forest-dependent communities arising out of the impacts of climate change on forests.

To strengthen the effective implementation of FBCCA, the following recommendations are made to AFoCO Member Countries:

1. Mainstream adaptation actions into mitigation projects/ programs and make adequate funding available.
2. Acknowledge FBCCA as a part of SFM and accelerate its implementation.
3. Develop awareness among stakeholders about FBCCA as nature-based solutions to the problems caused by climate change.
4. Strengthen inter-sectoral networking and coordination between the forestry sector and other relevant sectors/ organizations to implement FBCCA.



### Asian Forest Cooperation Organization (AFoCO)

AFoCO is a treaty-based intergovernmental organization that is committed to strengthening forest cooperation and taking concrete actions to promote sustainable forest management and address the impacts of climate change.

[www.afocosec.org](http://www.afocosec.org)