TRAINING REPORT

Forest-based Climate Change Adaptation (FBCCA)

3 – 7 May 2021

AFoCO

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Forest-based Climate Change Adaptation (FBCCA)

3 – 7 May 2021

Note to Readers

The training report was prepared by the AFoCO Regional and Education and Training Center to the AFoCO regular training course on "Forest-based Climate Change Adaptation and Practices" virtually organized on 3-7 May 2021.

The RETC is grateful for the support and resources provided by participants of the Member Countries: Bhutan, Brunei Darussalam, Cambodia, Indonesia, Kazakhstan, Mongolia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, and Viet Nam.

All comments on the assessment report by the participants were considered and duly addressed, where appropriate, in the final text of the report. The views expressed in this report may not necessarily reflect the views of the Assembly.

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CONTENTS

ABBREVIATIONS AND ACRONYMS 5

1 BACKGROUND 6

2 OBJECTIVES 7

3 PARTICIPANT ANALYSIS 7

3.1 INFORMATION OF PARTICIPANTS 7
3.2 PURPOSE OF PARTICIPATION 8
3.3 CORE PROBLEMS 10
3.4 CURRENT ISSUES OF PARTICIPANTS 11

3.4.1 BHUTAN 14
3.4.2 BRUNEI 15
3.4.3 INDONESIA 16
3.4.4 KAZAKHSTAN 19
3.4.5 INDONESIA 21
3.4.6 MONGOLIA 23
3.4.7 MYANMAR 25
3.4.8 PHILIPPINES 27
3.4.9 SINGAPORE 31
3.4.10 THAILAND 33
3.4.11 TIMOR-LESTE 35
3.4.12 VIET NAM 36

4 TRAINING SCHEDULE 38

5 SESSION SUMMARIES 39

5.1 LECTURE 1. INTRODUCTION TO FOREST-BASED CLIMATE CHANGE ADAPTATION 39
5.2 LECTURE 2. FBCCA AND REDD+ 42
5.3 LECTURE 3. FBCCA APPROACH 1: BIODIVERSITY CONSERVATION AND CLIMATE RESILIENT GENETIC RESOURCE MANAGEMENT 50
5.4 LECTURE 4. FBCCA APPROACH 2: CLIMATE RESILIENT URBAN FORESTRY AND INNOVATIVE TECHNOLOGIES 52
5.5 LECTURE 5. FBCCA APPROACH 3: CLIMATE CHANGE DISASTER RISK MANAGEMENT 54
5.6 LECTURE 6. FBCCA APPROACH 4: COMMUNITY-BASED FIRE AND WATER MANAGEMENT 55
5.7 LECTURE 7. NATIONAL STRATEGY AND IMPLEMENTATION TO FOREST-BASED CHANGE ADAPTATION 56
5.8 LECTURE 8. CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT (SDGs) IN POST COVID-19 ERA: CHALLENGES AND OPPORTUNITIES 59
5.9 LECTURE 9. FBCCA APPROACH 5: ECOLOGICAL RESILIENCE AND ECOSYSTEM/LANDSCAPE-BASED ADAPTATION 61
5.10 LECTURE 10. FBCCA APPROACH 6: LINKING AGROFORESTRY: A NATION-BASED SOLUTION TO CLIMATE CHANGE ADAPTATION 64

6 ACTION PLANS OF PARTICIPATING COUNTRIES 65

6.1 BHUTAN 65
6.2 BRUNEI DARUSSALAM 66
6.3 CAMBODIA 67
6.4 KAZAKHSTAN 68
6.5 INDONESIA 69
6.6 MONGOLIA 70
6.7 MYANMAR 71
6.8 PHILIPPINES 72
6.9 SINGAPORE 73
6.10 THAILAND 74
6.11 TIMOR-LESTE 75
6.12 VIET NAM 76

7 SURVEY RESULTS 77

7.1 Organization and Preparation 77
7.2 Educational Environment 77
7.3 Training Design 78
7.4 Lecturer Evaluation 79

8 RECOMMENDATIONS FROM PARTICIPANTS 81

9 COMMENTS FROM LECTURERS 82

10 LIST OF PARTICIPANTS 83

ABBREVIATIONS AND ACRONYMS

AFoCO	Asian Forest Cooperation Organization
ARWG	Adaptation and Resilience Working Group
BCI	Blue Carbon Initiatives
BNCCP	Brunei Darussalam National Climate Change Policy
COP	Conference of the Parties
DNP	Department of National Park
ED	Executive Director
ENSURE	Ensuring Sustainability and Resilience
ERPA	Emission Reduction Payment Agreement
FA	Forestry Administration
FBCCA	Forest-based Climate Change Adaptation
FRAP	Forest Restoration Action Plan
FREL	Forest Reference Emission Level
FTA	Forests, Trees and Agroforestry
GHG	Greenhouse Gas
GIS	Geographic Information System
LAPA	Local Adaptation Plans of Action
MRRP	Myanmar Reforestation and Rehabilitation Programme
NAP	National Adaptation Plan
NAPA	National Adaptation Programmes of Action
NBS	Nature-Based Solutions
NBSAP	National Biodiversity Strategy and Action plan
NDC	Nationally Determined Contributions
NFI	National Forest Inventory
NFMS	National Forest Monitoring System
NGO	Non-governmental Organization
NTFP	Non-timber Forest Product
IPCC	Inter-governmental Panel on Climate Change
ITTO	The International Tropical Timber Organization
PES	Payment for Ecosystem Services
PNRPS	Philippines National REDD-Plus Strategy
REDD+	Reducing Emissions from Deforestation and Forest Degradation-Plus
RFD	Royal Forest Department
RNH	Re-establishing Natural Habitats
SDG	Sustainable Development Goals
SIS	Safeguards Information System
SLMS	Satellite Land Monitoring System
SOI	Summary of Information
UNFCCC	United Nations Framework Convention on Climate Change
UPF	Urban and peri-urban forestry

1. BACKGROUND

Climate change is a global, natural phenomenon that has significant impacts on the ecological system. It creates many adverse effects on the Earth and human beings. Facing and coping with the impacts of climate change are challenging and inevitable for everybody. With Global warming, the more the Earth's temperature increases, the more profound and unforeseen negative impacts will occur, e.g., freshwater supply.

Nowadays, Asia is one of the most vulnerable regions to climate change. Countries are expected to be seriously affected by the adverse impacts of climate change since most economies are relying on agriculture and natural resources. The climatic impacts will severely threaten the livelihood of poor people living in rural areas with limited adaptive capacity. Disasters, i.e., such as forest fire, smoke, haze, floods, droughts, and tropical typhoons, have become severely affected by climate changes.

There are two primary policy responses to climate change which are: adaptation and mitigation. Mitigation consists of actions to limit the magnitude or rate of global warming and its related effects. Climate change mitigation generally involves reductions in human (anthropogenic) emissions of greenhouse gases (GHGs). Mitigation may also be achieved by increasing the capacity of carbon sinks, for example, through reforestation. Mitigation policies can substantially reduce the risks associated with human-induced global warming.

Adaptation means anticipating the adverse effects of climate change and taking appropriate actions to prevent or minimize the damage they can cause or taking advantage of opportunities that may arise. The IPCC defines adaptation as: "the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects ". Adaptation needs to be tailored into local, sub-national, and national decision-making to meet local needs and circumstances. Synergies should also be strengthened at all levels, including action taken under various multilateral environmental agreements.

While forests are impacted by climate change, they also play a critical role in adaptation to climate change. From the remote and intact areas to urban surroundings, forests support diverse species, including human beings, to adapt to changing climate patterns and sudden climate events. Moreover, forests indirectly support economies to adapt to climate change by reducing the costs of climate-related negative impacts, which directly support global society to meet the Sustainable Development Goals (SDGs). Under the post-COVID-19 era where New Normal is set in all the sectors, forests and forestry sector may also explore their future roles of FBCCA.

This lecture actively responded to the global call to increase awareness of climate change and its impacts among policy makers in forest and forestry sectors. In addition to publicizing the problems, knowledge of FBCCA approaches, tools, and financing mechanisms were shared, e.g., urban forestry, biodiversity conservation, nature-based solutions, disaster risk management, community-based fire/water management, agroforestry, and ecosystem/landscape-based adaptation. Doing so encouraged participating trainees to take active attention to the FBCCA, which will eventually lead the trainees to utilize the training outputs as their baseline information to develop project concept notes.

2. OBJECTIVES

The course aims to provide participants with in-depth knowledge of the policies and regulatory frameworks for developing and managing climate change adaptation strategies. Participants learn how to handle climate change issues with practical and sustainable solutions, whose outputs will be utilized as the baseline information for the project concept note development.

The three key objectives of the training are:

1) to enhance understanding of the forest-based climate change adaptation in the context of sustainable development.

2) to share practical cases and experiences of member countries; and,

3) to discuss challenges and opportunities and establish possible recommendations and concrete ideas reflecting the lessons learned.

3. PARTICIPANT ANALYSIS

3.1 INFORMATION OF PARTICIPANTS

This course welcomed 44 gender-balanced technical-level government officials and forestry experts involved in climate change adaptation and related work of twelve Member Countries.

Table 1. Number of participants from the member countries

Sr	Countries	No. of Participants
1.	Bhutan	2
2.	Brunei	2
3.	Cambodia	2
4.	Indonesia	8
5.	Kazakhstan	5
6.	Mongolia	2
7.	Myanmar	2
8.	Philippines	7
9.	Singapore	2
10.	Thailand	2
11.	Timor-Leste	8
12.	Viet Nam	2
	Total	44

Table 2. Positions of the participants

Sr	Position	Number
1.	Deputy Director / Deputy Chief	2
2.	Engineer	2
3.	Forest Management Specialist	7
4.	Forestry Officer	8
5.	Management Head	7
6.	Manager	2
7.	Recreation and tourism expert	1
8.	Researcher	8
9.	Supporting & Technical staff	7
	Total	44

3.2 PURPOSE OF PARTICIPATION

Country	Purpose of Participation
Bhutan	• What are the key areas to be considered during planning for forest-based climate change adaptation and practices? • Any simplified climate change education and awareness methods target to the rural population
Brunei	• What are the potential options for nature-based solution technologies to climate change adaptation and how can Brunei adopt and implement this? • What are the best practices or best approaches in producing NAP, National Adaptation Plan?
Cambodia	• How much can the forestry sector contribute to climate change adaptation? • What are the best forest management practices that can help people adapt to climate change?
Kazakhstan	• Determining the contribution of forestry to climate change and adaptation • Developing effective measures to adapt to climate change
Indonesia	• How to incorporate climate change adaptation into local governments' development plan ? • How to improve forest fire mitigations in Indonesia?
Mongolia	• A number of countries are established their country-specific NAPs. Here we would like to learn about what are the costs and benefits of each adaptation option (best practices)? • What are the best examples of the financial sustainability of the NAPs (best examples and practices from the other countries)?
Myanmar	• Learn the member countries' implementation on forest-based climate change adaptation & practices: opportunities and challenges • Advanced technologies Vs nature-based solutions: which is a cost-effective and better solution for forest-based climate change adaptation esp. in developing countries?

Philippines	• Shared issues among Asian countries on forest-based climate change adaptation & good practices • Applying urban forestry integrated into economic development
Singapore	• Would like to hear experiences from other participants on key challenges that their country faces amidst climate change and how the country balances economic development with nature conservation • Would like to learn more about current and future projects and to share with our • colleagues the knowledge and expertise from other participants and trainers
Thailand	• How to conduct climate change adaptation projects on forest landscape restoration based? • Are there constraints to conduct climate change adaptation projects on forest landscape restoration based? • Are there any proper ways to implement and how to achieve?
Timor-Leste	• There have been many projects that have been built with the aim of improving climate change but still, nothing has changed • What kind of effort is actually appropriate to mitigate climate change
Viet Nam	• In my province/country (Lam Dong/Viet Nam), in someplace which had high forest area, most people living near the forest are poor (still), their livelihoods depend on forest (non-timber product), their income from protecting the forest is not enough. • What/how is the best way to help them to improve their income as well as still developing/increasing forest?

(Note: Information excerpted from Country Reports submitted by Participants)

3.3 CORE PROBLEMS

Country	Core Problems
Bhutan	• Loss of forest area
Brunei	• Land use planning with development, Funding, and Technical Expertise
Cambodia	• Low agricultural productivity and forest-based income
Kazakhstan	• N/A
Indonesia	• Few numbers of stakeholders who integrate climate change adaptation on their development plans
Mongolia	• Deforestation and Forest Degradation
Myanmar	• Needs for Community-based Reforestation for Climate-Resilient Ecosystem and Rural Livelihood Development in Ayeyarwady Delta Area
Philippines	• Climate Change Issues
Singapore	• Sustainability of planting efforts
Thailand	• Needs for National REDD+ Strategic Plan and National Action Plan • Needs Capacity Building and technology transfer for implementation • Uncontrolled forest fire
Timor-Leste	• High rate of deforestation in Timor-Leste
Viet Nam	• Inefficient profit-sharing among stakeholders in some places

(Note: Information excerpted from Country Reports submitted by Participants)

3.4 CURRENT ISSUES OF PARTICIPANTS

CATEGORY	BT	BN	KH	KZ	ID	MN	MM	PH	SG	TH	TL	VN
Related National Policies/ Legislation	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Experiences on FBCCA	N/A	Y	Y	Y	Y	Y	Y	Y	N/A	Y	Y	Y

Y: Yes, we have the related national policies and legislations in term of Forestry Sector, Climate Change and other sectors that would be supportive to FBCCA and have experiences on restoration and landscape/ecosystem-based adaptation for FBCCA too.

N: No, we don't have any related policies or legislative body supportive to FBCCA, and any FBCCA experiences.

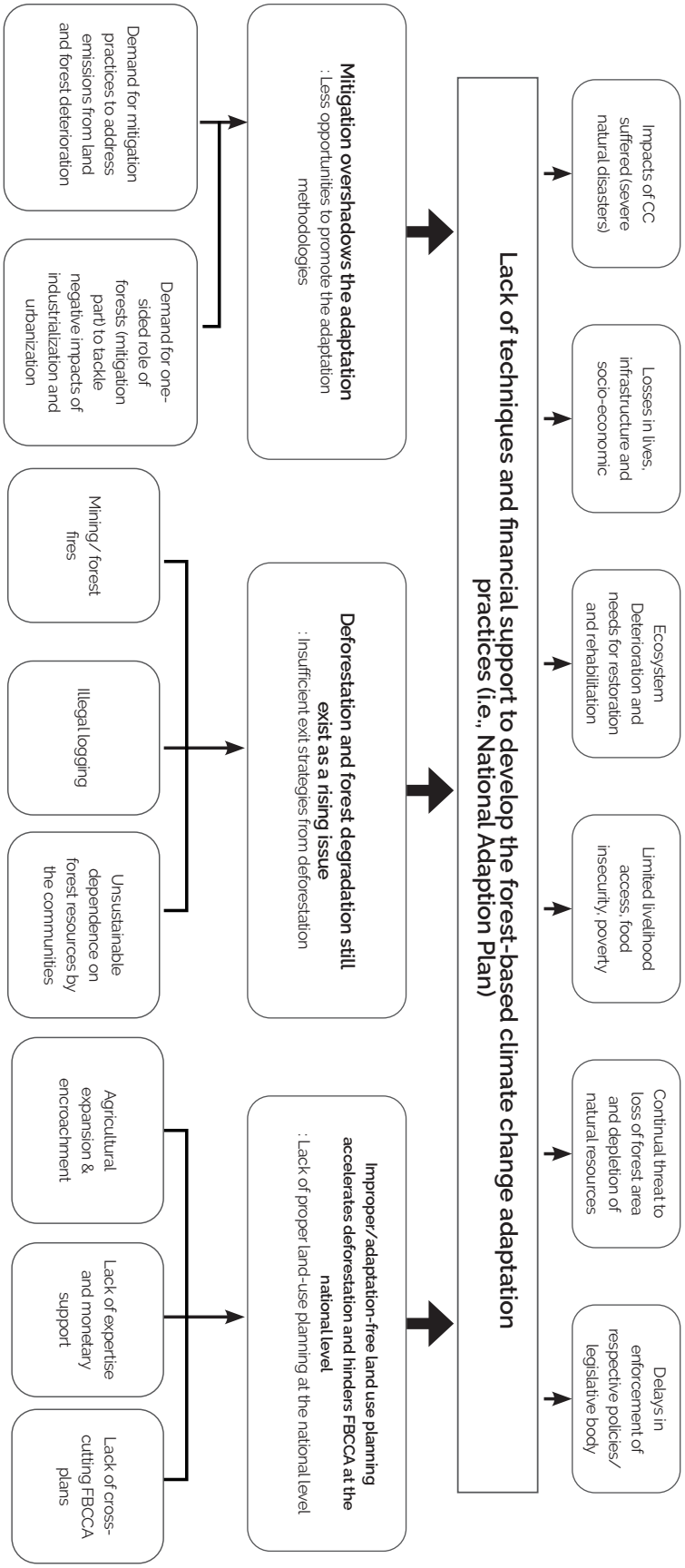
N/A: No answer

BT: Bhutan BN: Brunei Darussalam KH: Cambodia KZ: Kazakhstan ID: Indonesia MN: Mongolia	MM: Myanmar PH: Philippines SG: Singapore TH: Thailand TL: Timor-Leste VN: Viet Nam

Country	Status of NAP
Bhutan	• **Preparation stage:** Forest and Biodiversity is a priority sector for the NAP Readiness Project. And under this sector, we are currently undertaking climate risk assessment on Forest and Biodiversity.
Brunei	• Brunei Darussalam has not implemented any National Adaptation Plan at the moment
Cambodia	• **Preparation stage/NAPA:** Cambodia prepared the National Adaptation Programme of Action to Climate Change (NAPA) in 2006, by the National Council for Sustainable Development (NCSD) Chaired by the Minister of MoE
Kazakhstan	• **Preparation stage:** In the Republic of Kazakhstan, there is no approved methodology for calculating the absorption of carbon dioxide by wood species.
Indonesia	• **Approved:** According to Indonesia's Third National Communication (2017), Indonesia has developed National Action Plan for Climate Change Adaptation (RAN-API). Ministry of Environment and Forestry has also enacted regulation: Ministerial Decree No. P 33/ 2016 for the CCA guidance

Mongolia	• **Implementation stage after approval:** Currently in the implementation stage, led by the Ministry of Environment and Tourism
Myanmar	• **Preparation stage/NAPA:** Preparation of the National Adaptation Plan (NAP) was executed by Department of Meteorology and Hydrology, Ministry of Transport and Communication of Myanmar and coordinated by the National Environmental Conservation and Climate Change Central Committee (NECCCCC). and the NAP was adopted in 2013.
Philippines	• **Preparation stage:** The National Climate Change Adaptation Plan process in the Philippines is still ongoing and, with it, the National Climate Change Action Plan (NCCAP) serves as the National Adaptation Plan in the Philippines. The NCCAP was formulated outlining the country's agenda, specific programs and strategies for adaptation and mitigation for 2011 to 2028.The NCCAP addresses the challenges of climate change in the country.
Singapore	• Under the Singapore Green Plan 2030, national adaptation activities under the City in Nature pillar are conducted led by NParks: example expanding parks area by 2026, 1 million trees plantation by 2030, 1000ha green space by 2035
Thailand	• **Preparation stage:** RFD appointed Committee on Climate Change on forest sectors to consider and implement follow climate change policy relate to forest sectors.
Timor-Leste	• **Implementation stage after approval:** The Democratic Republic of Timor-Leste (GoDRTL) officially launched its NAP process on 27 September 2019, building ongoing work on adaptation under the NAPA, assessment under the communications, and adaptation work in specific sectors
Viet Nam	• **Implementation stage after approval:** Led by MONRE. In this NAP, forestry is not a separated sector => it shares the spotlight with natural resources management, land-use changes, and most agriculture. The forestry sector's goal is to have higher local people's engagement in forest development through livelihood improvement.

PROBLEM TREE ON FBCCA IN THE AFoCO REGION



3.4.1 BHUTAN

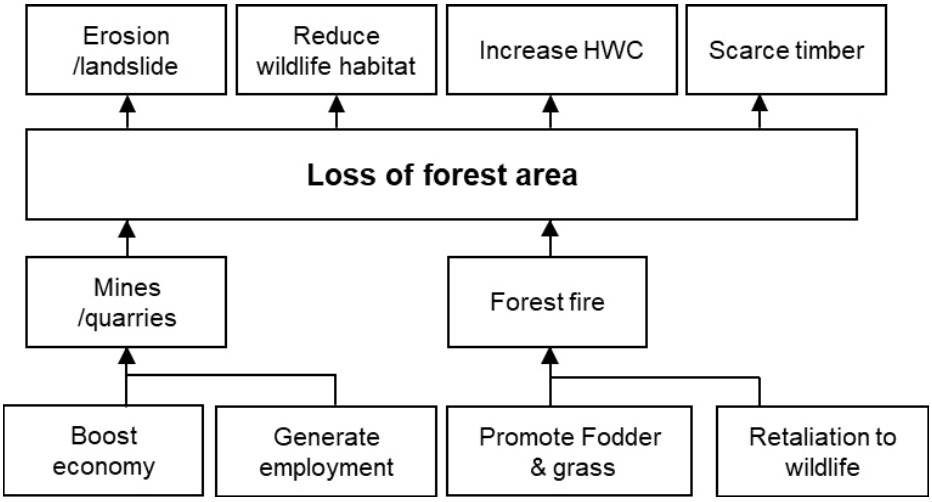


FIGURE 1. PROBLEM TREE ON FBCCA IN BHUTAN

TABLE 3. SWOT OF FBCCA IN BHUTAN

Strength	Weakness
• Forest fire areas known • Fire season known • Strong Policies and Laws in place	• Rugged terrain and vast inaccessible • Technology and equipment • Lack professional fire fighters
Opportunity	**Threat**
• Maintain forest cover and conserve biodiversity • Reduce emission of GHG • Provide ecosystem services	• Adverse effect to economic opportunity • Increase HWC • Accumulation of excess fuel in the forest

TABLE 4. COUNTRY STATUS AND ISSUES ON FBCCA IN BHUTAN

Backgrounds and Current status	• Bhutan is a small landlocked country with an area of 38,394 km2 • Population of 727,145 (>65% depend on subsistence farming) • Global leader in environmental conservation • Forest cover >72% and > 51% is Protected areas • About 3% of area is cultivable agricultural lands • Total forest carbon stock is 709mt • Altitude 100m to 7500m
Related national policies	• Constitutional mandate to maintain 60% forest cover • Environment conservation as one of the 4 pillars of GNH • National Forest Policy 2011 : all forest area under sustainable management plan • Management regimes: PAs, FMU, CF, PF, HF and Forest outside FMUs • RNR Strategy 2040 (draft): Promote climate change adaptation
Experiences on FBCCA	• N/A

3.4.2 BRUNEI

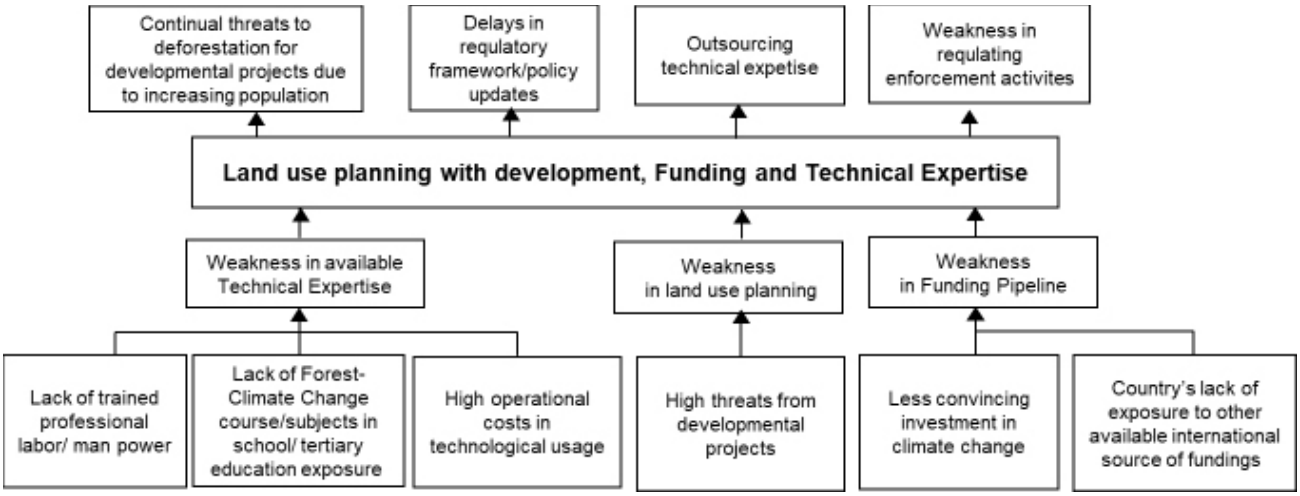


FIGURE 1 . PROBLEM TREE ON FBCCA IN BRUNEI

TABLE 5 . SWOT OF FBCCA IN BRUNEI

Strength	Weakness
• Multiple benefits Adaptation and Mitigation • Green engineering • Multilevel stakeholders' involvement • Supports our NDC • Supports our Brunei National Climate Change Policy (Strategy 8 - Climate Resilience and Adaptation)	• Potential for delays in establishing new policy is high due to too much "red tape" interconnecting (intra/inter-Ministerial processes) • Focused funding (Highly reliant on funding from government) - less convincing investment/market for climate adaptation economic benefits • Limited technical and institutional capacity in Ministries
Opportunity	**Threat**
• Sustainable eco-tourism • Increase natural habitat & carbon sequestration • Research and development in education • Increased technical expertise and improved human capacities • Biodiversity conservation • Improved livelihood and well-being of people • Increased community resilience to climate change	• llegal logging and exploitation of forest resources including NTFPs • Uncontrolled/improper planning of development and land use • Increasing population • Economic development pressure

TABLE 6 . COUNTRY STATUS AND ISSUES ON FBCCA IN BRUNEI

Backgrounds and Current status	• N/A
Related national policies	• N/A
Experiences on FBCCA	• N/A

3.4.3 INDONESIA

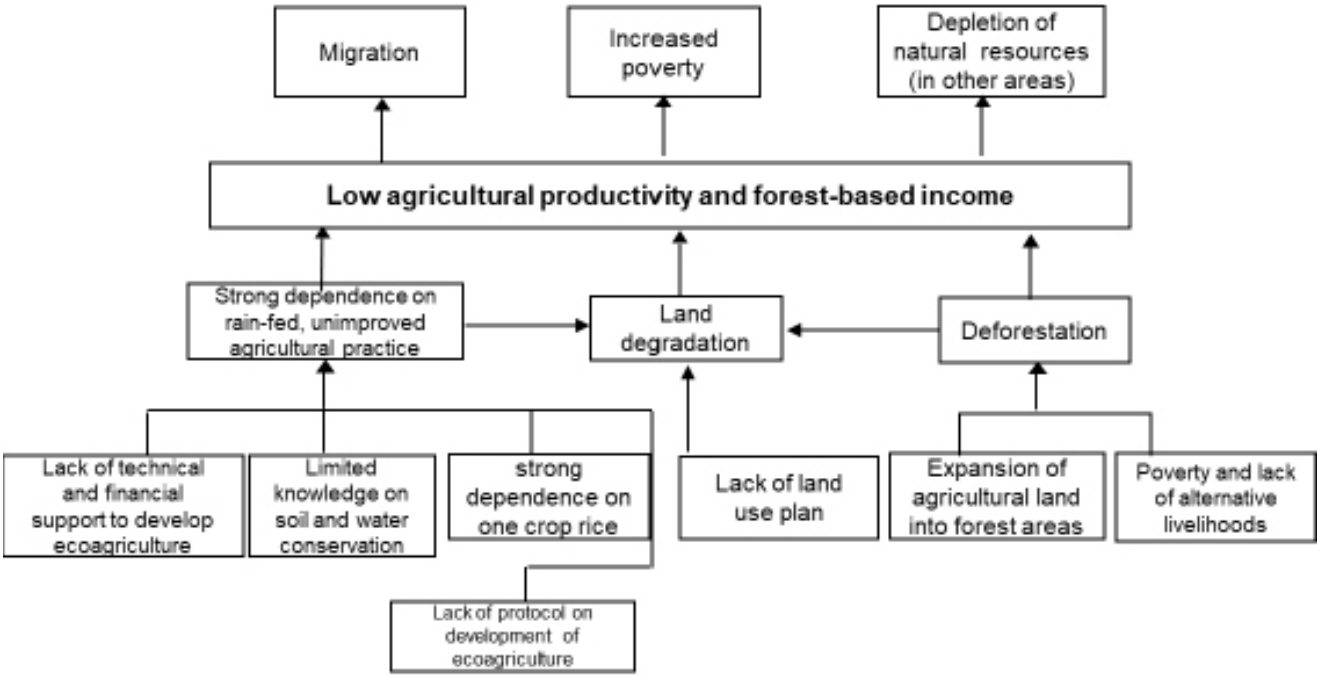


FIGURE 2. PROBLEM TREE ON FBCCA IN CAMBODIA

TABLE 7. SWOT OF FBCCA IN CAMBODIA

Strength	Weakness
• Experience in SFM • Experience in multi-disciplinary teamwork and coordination • Experience with local community development • Good knowledge on soil and water conservation • Good network with agricultural experts	• The team has limited experience in the agricultural crops • Lack of human resource in climate change
Opportunity	**Threat**
• Work toward achieving SDG1, SDG13 • FBCCA is widely recognized by funding agencies (GCF, AFoCO, FAO...) • Supportive government policies on FBCCA (NAPA, NDC, NBSAP, Land Degradation Neutrality Targets, NFP • Majority of the population needs FBCCA. (Majority of the population live in rural area, whose livelihoods depend on subsistence agriculture and access to natural resources, which are vulnerable to climate change.	• Prolong drought or flood could cause plants dying • Reduced interest/motivation of participating farmers • No adoption of the methods after project completion • FBCCA requires the changing of attitudes/ways of life of the community which is quite a long-term process.

TABLE 8 . COUNTRY STATUS AND ISSUES ON FBCCA IN CAMBODIA

Backgrounds and Current status	• Total land area: 181,035km2 • Population in 2019: 16.5 million • 50% of the population is under 22 years old • 75% of the population live in rural area, whose livelihoods depend on agricultural practice, and access to natural resources • Agricultural sector employs 40% of the population in 2017, and contributes about 26.66% of GDP • Forests cover in 2018: 8.5 million ha or 46.86% • The country has witness frequent floods and droughts in recent years
Related national policies	• **National Strategic Development Plan (NSDP) 2019-2023.** The NSDP supports environmental sustainability and climate change adaptation to minimize the negative impacts on economic growth and economic diversity. It gives priority to strengthen the capabilities to develop and implement climate change adaptation and resiliency measures. • **National Green Growth Roadmap 2009.** The road map suggests win-win-win situations between economy, environment and society. Adopting a holistic approach to development will help the country improve resilience and decrease vulnerability to climate change. • **Cambodia's Second 2015 National Communication to the UNFCCC.** Promoting the climate resilience of agriculture through scaling-up of climate-smart farming systems; Promoting the adaptive capacity of communities, and restoring the natural ecology system to respond to climate change • **Cambodia Climate Change Strategic Plan (CCCSP) 2014–2023.** The CCCSP creates a national plan to support sustainable development in Cambodia and reduce vulnerability to the impacts of climate change. The CCCSP promotes community-based adaptation approaches and strengthen partnerships between development partners, civil society, the private sector and the Government. • **National Biodiversity Strategy and Action Plan (NBSAP) 2016.** The NBSAP provides a framework for actions to supply services, including water, health, food security, climate change adaptation, and resilience to land degradation, to all in Cambodia. It recognizes that biodiversity conservation and sustainable use can contribute to climate change adaptation and mitigation. The NBSAP instructed MAFF, MoE and MOWRAM to conduct lakeshore and riverbanks protection and reforestation, and restoration of degraded ecosystems for climate change mitigation and adaptation, and for combating desertification.
Experiences on FBCCA	• Cambodia uses ecosystem-based adaptation to deal with a broad range of climate change impacts: • Watershed Management Planning for Prek Thnot Watershed. • Conserving Rosewood genetic diversity for resilient livelihoods in the Mekong • Integrated farming techniques to maintain soil fertility and conserve water (agroforestry system, planting drought-resilient crops, rehabilitation of the irrigation system, and home-gardening.

3.4.4 KAZAKHSTAN

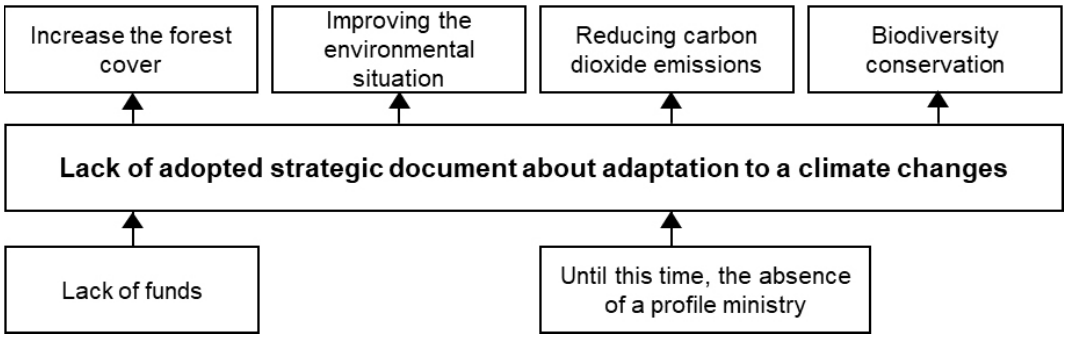


FIGURE 3 . PROBLEM TREE ON FBCCA IN KAZAKHSTAN

TABLE 9 . SWOT OF FBCCA IN KAZAKHSTAN

Strength	Weakness
• Biodiversity conservation. • Increase in forest cover • Increased absorption of carbon dioxide	• Large-scale project
Opportunity	**Threat**
• Creation of new jobs (workplaces) • Forestry development	• Weather. • Soil quality and fertility

TABLE 10. COUNTRY STATUS AND ISSUES ON FBCCA IN KAZAKHSTAN

Backgrounds and Current status	• The Republic of Kazakhstan on November 4, 2016, ratified the Paris Agreement on Climate Change in 2016 and pledged to reduce greenhouse gas emissions by 15% by 2030 by mobilizing innovative solutions with the participation of the private sector. Today, the main air pollutants in Kazakhstan are the transport and energy sectors. Every year the pressure on ecosystems grows, and without natural carbon sinks, that is, forests, the concentration of greenhouse gases will only grow, and it will be almost impossible to achieve the goals of the Paris Agreement.
Related national policies	• To fulfill international obligations, the Republic of Kazakhstan is carrying out appropriate work to reduce greenhouse gas emissions, a system of trading in quotas for greenhouse gas emissions and carbon units is in operation. Work is underway to reduce greenhouse gas emissions by increasing forest areas and improving forest management practices, as well as raising public awareness of climate change.
Experiences on FBCCA	• The main work of ecosystem restoration is the planting of forests. The Republic of Kazakhstan annually carries out work on the reproduction of forests on an area of about 65 thousand hectares. • A green zone is being created around the capital to create a forest ecosystem. Within the framework of the project "Preservation of forests and increasing the forest cover of the territory of the republic", financed by a loan from the World Bank, a grant from the GEF and the republican budget in the period from 2007 to 2015, on the drained bottom of the Aral Sea (ODAM), afforestation was carried out on an area of 61 thousand hectares. since 2017, together with the Forest Service of the Republic of Korea, the project "Phyto-forestry reclamation of the drained bottom of the Aral Sea in the Kyzylorda region" has been implemented. To implement this project, a working project was developed "Creation of plantings on the drained bottom of the Aral Sea on an area of 30 thousand hectares." In the period from 2018 to 2020, plantings of black saxaul have already been created on the territory of the Aral State University for the Protection of Forests and Wildlife in the Kyzylorda region on an area of 13 thousand hectares.

3.4.5 INDONESIA

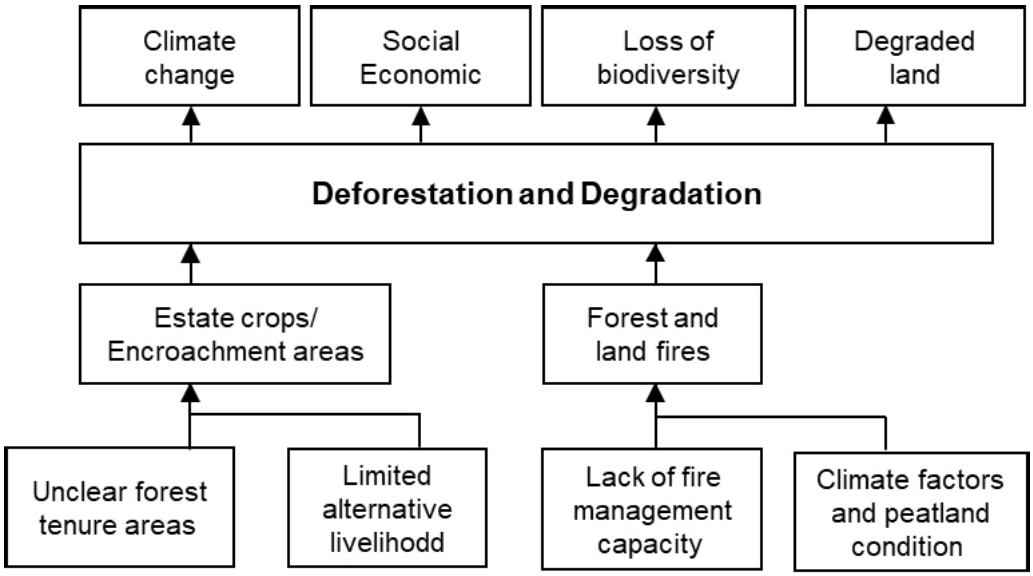


FIGURE 4. PROBLEM TREE ON FBCCA IN INDONESIA

TABLE 11. SWOT OF FBCCA IN INDONESIA

Strength	Weakness
• Support Indonesia's NDC • Multistake holders involvement • Joint Mitigation and adaptation actions in AFOLU sectors • Carbon credit through Results Based Payment • Improvement Forest Governance • Green Development	• Lack of Capacity on Human resources and other stakeholders in Sub National Level • Limited funding limited of policy related Climate Change in sub national level
Opportunity	**Threat**
• Increase carbon sequestration and non-carbon • benefit • Increase income through carbon credit with Results • Based Payment • Increase income for smallholders • Prevent form forest fire • Good Forest Governance	• Forest fire due to climate • Carbon trading with ERs right not support Indonesia • NDC • Local Politic issues • Lack of Understanding for small holders related climate Change

TABLE 12. COUNTRY STATUS AND ISSUES ON FBCCA IN INDONESIA

Backgrounds and Current status	• In 2018 National GHG accounting shown Indonesia producing carbon emission with 1.637.156 Gg CO2e • The main source of carbon emission is from forestry sector (723.510 Gg CO2e), followed by energy sector (595.665 Gg CO2e) • Source: GHG report, 2019, MoEF
Related national policies	• As stated in the NDC, Indonesia is committed to reduce GHG emission by 29% in 2030 from business as usual without international supports, or by 41% with international support. (Act Number 16/2016 regarding PA Ratification) • REDD+ is one of the main efforts to reduce the country's carbon emission through Results Based Payment or Performance Based Payment (P.70/2017) • Proklim (Program Kampung Iklim/Climate Village Program).
Experiences on FBCCA	• From the period of 2015-2019, Indonesia has rehabilitated 1.2 million hectares of degraded forest areas. • To improve seedling quality for forest rehabilitation, Indonesia has established 54 permanent nurseries and 1000 local nurseries per year. • Deforestation rate in Indonesia is 0.44 mha per year in 2017-18 • The government has enacted a regulation: Presidential Instruction No. 5/ 2019 to prevent primary and peat swamp forest conversion. However, there are still 5.2 billion ha of secondary forest which needs to be protected from conversion as well.

3.4.6 MONGOLIA

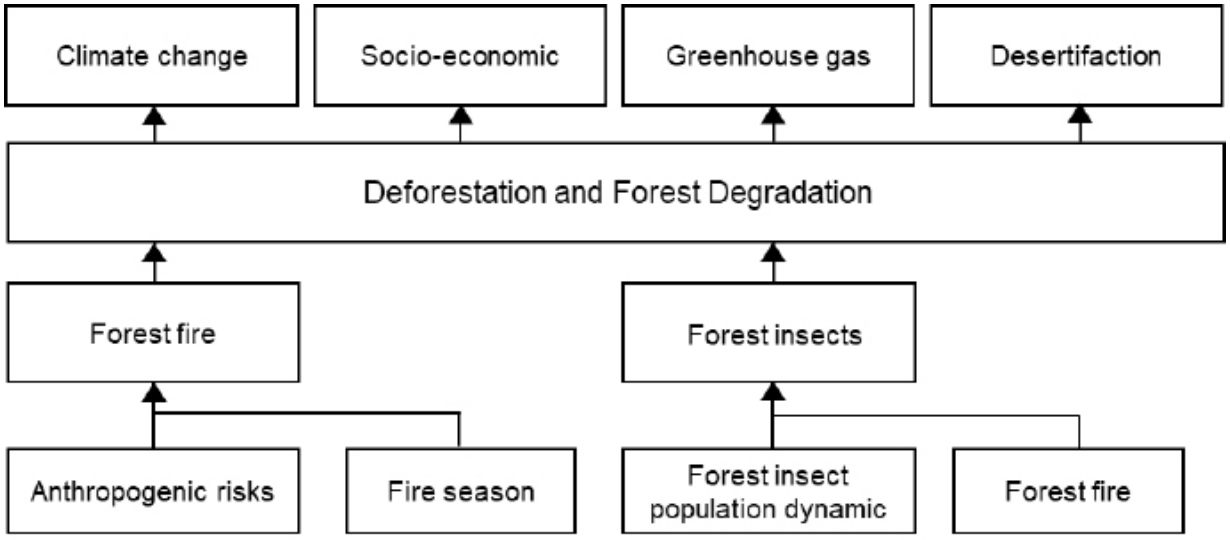


FIGURE 5. PROBLEM TREE ON FBCCA IN MONGOLIA

TABLE 13 . SWOT OF FBCCA IN MONGOLIA

Strength	Weakness
• Improve the structure and condition of the forest and create a highly productive climate-resistant forest • Lay the foundation for long-term policies for sustainable use of forest resources and protection of forest ecosystems • Contribute to Paris Agreement through reducing GHG. • Apply reforestation and restoration in Northeastern Mongolian degraded forest.	• Limited funding • Lack of information system • Absence of advanced technology in local area
Opportunity	**Threat**
• Increase restoration and reforestation activities by applying appropriate technology	• Climate is characterized by high fluctuations and extremes in temperature and precipitation. The annual mean temperature ranges from -6 to 8 degrees Celsius across regions and the annual precipitation varies from 50 to 150 millimeters in the Gobi Desert to 300 to 400 millimeters in the northern mountainous areas • The forest has limited the ability to regenerate naturally • Vulnerable to forest fires, insects, and human activities

TABLE 14. COUNTRY STATUS AND ISSUES ON FBCCA IN MONGOLIA

Backgrounds and Current status	• The country supports two major forest biomes, boreal forests in the north accounting for 14.2 million ha, dominated by larch and birch (CCPIU, 2018 GOM, 2018); and 2.6 million ha of saxaul forests (Bat-Ulzii and Khongor, 2018), a dryland woodland ecosystem in the southern arid regions of Mongolia that is considered under national definitions as 'forest'. The boreal forest comprises deciduous and coniferous forests growing in the forest steppe, boreal forest and mountain zones. Boreal forest is dominated by six main conifer species: larch (Larix sibirica), birch (Betula platyphylla), Siberian pine (Pinus sibirica), Scots pine (Pinus sylvestris), aspen (Populus tremula) and spruce (Picea obovata), with much of the forests being dominated by larch (FRDC, 2017). The broad-leaved trees found here are mainly birch (Betula platyphylla), aspen (Populus tremula) or poplar (Populus divers folia). Northern boreal forests are part of the transitional zone between the Siberian taiga forest to the north and the grasslands to the south. They typically grow on mountain slopes between 800 m and 2500 m above mean sea level. According to the forest taxation inventories conducted by the Forest Research and Development Center (FRDC), larch, birch and saxaul trees account for more than 60%, 10% and 15% of forest areas, respectively. In terms of growing stock, larch contributes close to 80%, while all other trees are below 10%. The boreal forest average growing stock is estimated 96.3 m3/ha, excluding saxaul forest (MET, 2019)
Related national policies	• "Vision – 2050" long-term development policy of Mongolia - Green development policy - State forest policy and REDD+ Strategy and Action Plan - General guidelines for the Mongolia's development in 2021-2025 - Government action plan 2020-2024
Experiences on FBCCA	• Currently there is the Ensuring Sustainability and Resilience (ENSURE) of Green Landscapes in Mongolia project implemented by the MET • Support Program on Scaling up Climate Ambition on Land Use and Agriculture through Nationally Determined Contributions and National Adaptation Plans – Regional • Improving Adaptive Capacity and Risk Management of Rural Communities in Mongolia

3.4.7 MYANMAR

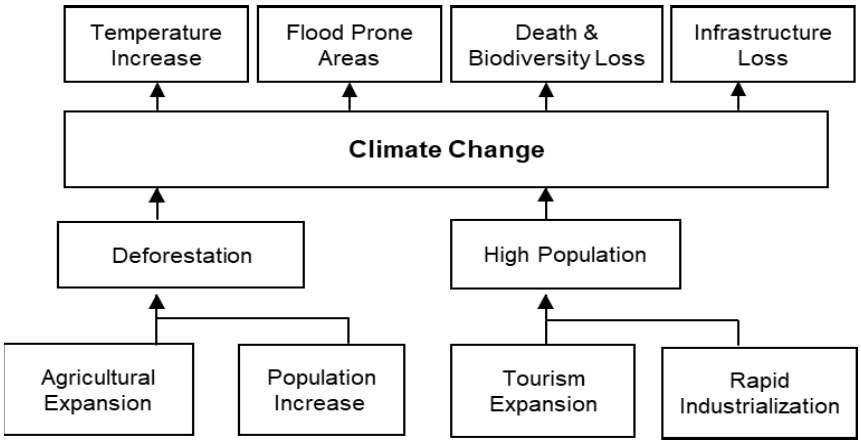


FIGURE 6. PROBLEM TREE ON FBCCA IN MYANMAR

TABLE 15. SWOT OF FBCCA IN MYANMAR

Strength	Weakness
• Experiences from previous and on-gong projects • 10 yrs. MRRP program implementing since 2017-2018 to 2026-2027 • Technical recommendations from the partner agency/ donor countries • Traditional knowledge on the local climatic and forests situations • Community Forests and CF User Groups already formed in some villages	• Insufficient evidence and demonstration of climate change adaptation benefits • Limited community awareness and understanding regarding climate change impacts and adaptation • Need Capacity building for forestry staffs and the communities • Weak coordination and networking amongst the Govt. institutions/ implementing agencies
Opportunity	**Threat**
• Can learn lesson from the previous and on-going projects: success and failures • Integrated Mangrove Management Plan (IMMP) (2005-2044) resulted from JICA project • Can get the supports from the local Township/District FD and related Departments/ Ministries • Can utilize the relative climatic data and information from The Department of Meteorology and Hydrology	• Limited policy, strategy, and legislative environment for providing incentives for adapting communities to climate change • Limited availability of locally relevant, usable climate information • Limited financial resources

TABLE 16. COUNTRY STATUS AND ISSUES ON FBCCA IN MYANMAR

Backgrounds and Current status	• One of the top three most affected countries to extreme weather events globally between 2000 and 2019 (Global Climate Risk Index, 2021) • Extreme Climatic Events in Myanmar • Cyclone Nargis struck in Ayeyarwady Delta Region in Myanmar on May 2008 • The worst natural disaster in the history of Myanmar • Causing the loss of an estimated 140,000 lives, loss and damage of property of approximately 2.4 million people and 16,800 hectares of natural forest • Severe Flooding occurred in 2015, lasting about six months • Affecting over 9 million peoples across 12 of Myanmar's 14 States and Regions • Displacement of over 1.7 million people, damage of 15,000 homes and more than 840,000 acres of agricultural crops • Income and employment mainly depend on climate-sensitive sectors- agriculture, forest and natural resources, energy >70% of the populations are in the rural area, and they mainly depend on agriculture for their livelihoods and on the forest for their subsistence needs • CC Impacts on Agriculture - agricultural yields decrease and crops damage and failures. • CC Impacts on Forestry - forest loss due to the cyclone, erosion, floods, landslides especially in the Costal and Hillside area - climate induce succession resulting in forest conversion to less productive forest and grasslands especially in Central Dry zone area
Related national policies	• Environmental Conservation Law (2012) • The National Adaptation Plan (NAP) (2013) • Environmental Conservation Rules (2014) • Myanmar Climate Change Policy (MCCP) (2015-2018) • Myanmar Climate Change Strategy and Master Plan (MCCSMP) (2018-2030) • Myanmar Sustainable Development Plan (2018) • Myanmar Climate Change Master Plan (2018-2030) • National Environmental Policy of Myanmar (2019) • Myanmar National Environmental Policy (2019)
Experiences on FBCCA	• Myanmar Reforestation and Rehabilitation Program (MRRP) (2017-2018 to 2026-2017) has been implementing with the following objectives - to restore the ecosystem as the biodiversity rich natural forests - to mitigate Climate Change - to contribute the Sustainable Forest Management • Re-establishing Natural Habitats (RNH) Programme (2019-2020 to 2028-2029) has been implementing with the following objectives - to contribute the protected areas management - to restore the ecosystem for sustainable ecosystem services as well as for mitigation and adaptation with CC - to raise the public participation in ecosystem and wildlife conservation • 37 projects has been currently implementing with the aims of biodiversity conservation, community forestry development, mangrove restoration, integrated watershed management, sustainable forest management and other sectors

3.4.8 PHILIPPINES

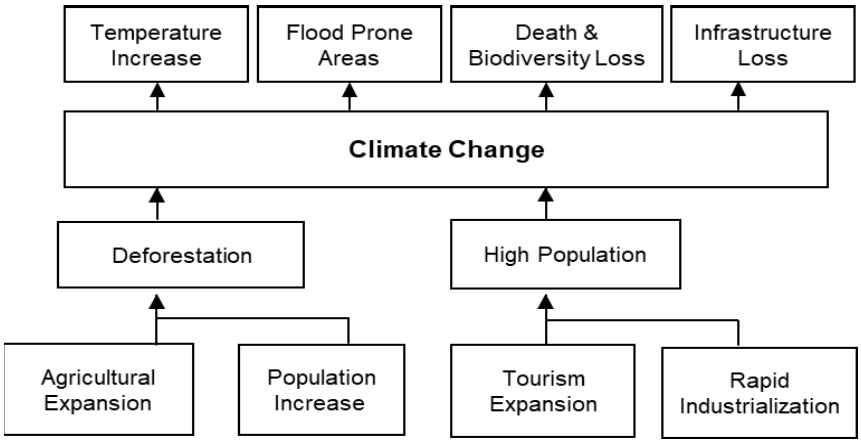


FIGURE 7. PROBLEM TREE ON FBCCA IN PHILIPPINES

TABLE 17. SWOT OF FBCCA IN PHILIPPINES

Strength	Weakness
• The existing methodology to be used for NFI is being improved and densified • Adoption of the Philippines Master Plan for Climate-Resilient Forestry • Development and localized Climate Change Action Plans in place • Refocused and revitalized forest rehabilitation program to increase Forest cover, enhance biodiversity and meet wood demand/deficit • Established protected areas and protection forests and issuance of appropriate tenure and management arrangements to untenured forestlands • Allocation of adaptation funds through PSF	• Limited technical expertise/capacities • Protocols for data sharing and reporting of initiatives from various sectors is inefficient • National policy and system components on NFMS not yet in place • REDD+ implementation is still on the Readiness Phase • Lack of awareness on the concept of climate change; its causes, impacts and consequences • Few champions for climate-responsive strategies in other sector • Limited number of CC adaptation projects
Opportunity	**Threat**
• Existing CCA Plans and Strategies are subjected for review and updating • Existing tools and technology to develop a more reliable national dataset for spatial analysis • Build-on and strengthen alternative options for CCA i.e. • REDD+, PES, CAVCS and other Carbon Financing mechanism • Budget for CCA activities has a separate tagging for prioritization • Private sector engagement in forest carbon projects and initiatives of the government	• Decoupling of the forestry sector in the Country's NDC • Contraction of the Ph economy in 2020 due to COVID • High forest-dependency of communities • Continuous reclassification of forestlands to other uses • Prioritization of extractive activities to cope up with the economic contraction

TABLE 18. COUNTRY STATUS AND ISSUES ON FBCCA IN PHILIPPINES

Backgrounds and Current status	• Prone to super typhoons • Top 5 countries affected by climate Change • Effect of Climate Change would be 6% of the GDP annually
Related national policies	• **RA 9729** – An act mainstreaming climate change into government policy formulations, establishing the framework strategy and program on climate change, creating for this purpose the climate change commission, and for other purposes - Section 11 mandates the Climate Change Commission (CCC) to formulate the Framework Strategy and Program on Climate Change • **RA 10174** – An act establishing the People's Survival Fund to provide financing to enable the Government to effectively address the problem of climate change. • **EO 881** – Authorizing the Climate Change Commission to coordinate existing climate change initiatives, Reducing Emissions from Deforestation and Forest Degradation – Plus, and other similar mechanisms • **EO 174** – Institutionalizing Philippines Greenhouse Gas Inventory Management and Reporting System • **Executive Order No. 43 and No. 24 on the Cabinet Cluster on Climate Change Adaptation and Mitigation.** The Order reorganized the Climate Change Adaptation and Mitigation Cluster to focus on the conservation and protection of the environment and natural resources. It shall take the lead in pursuing measures to adapt to and mitigate the effects of climate change on the Philippines archipelago; and undertake all the necessary preparation for both natural and man-made disasters. Executive Order No. 24 (2017) reorganized the Cabinet Cluster as follows: - Participatory Governance - Infrastructure - Human Development and Poverty Reduction - Security, Justice, and Peace - Climate Change Adaptation, Mitigation and Disaster Risk Reduction - Economic Development • **Philippine Master Plan for Climate Resilient Forestry Development (2016).** The Philippine Master Plan for Climate Resilient Forestry Development proposes programs and strategies to: - Strengthen resilience of forest ecosystems and communities to climate change; - Respond to demands for forest ecosystems goods and services; and - Promote responsive forest governance.
Experiences on FBCCA	• **Ecosystem Based Adaptation (EBA)** - Five entry points were identified that pose immediate opportunity for mainstreaming EbA: - Land use planning process; - Sustainable Integrated Area Development Strategy (SIAD); - Climate Change Cluster on Adaptation and Mitigation – Disaster Risk Reduction (CCCAM-DRR) Agenda; - Protected area management; and - National Adaptation Plan process, including the revision of the National Climate Change Adaptation Plan. • **Land Use Planning.** The EbA approach in the land use planning process has been embedded in the Housing and Land Use Regulatory Board Comprehensive Land Use Plan Guidebook 2013/2014, which has adopted the ridge-to-reef or integrated watershed management framework to emphasize the relationship between the upland, lowland, and coastal ecosystems. Volume 2 of the Guidebook comprehensively mainstreamed the ecosystems approach from data gathering to crafting the zoning ordinance, the local policy and implementation document of the Comprehensive Land Use Plan (CLUP).

Experiences on FBCCA

- **Sustainable Integrated Area Development.** The Philippine Development Plan (PDP) 2017-2022 supports EbA through the Sustainable Integrated Area Development (SIAD) Strategy. Chapter 20 of the plan underscores the importance of the role of ecosystem services, especially in the agriculture, fisheries, industry and services sectors "to ensure ecological integrity and improve the socio-economic conditions of resources-based communities through sustainable integrated area development". The Department of Environment and Natural Resources (DENR) has also aligned priority interventions through the adoption of the SIAD Strategy, in that EbA can be mainstreamed in the action plans from the development of the objecvtives and key result areas to the crafting of proposed interventions. The development of the Strategic Environmental Assessment on Resilience tool by the DENR is a key instrument in crafting future policies and in designing programs that ensure climate-informed decision making and ecological stability.

- **Climate Change Cluster on Adaptation and Mitigation – Disaster Risk Reduction (CCCAM-DRR).** In the Philippines, the discussion of EbA mainly falls under two national government agencies: the Climate Change Commission (CCC) and the Department of Environment and Natural Resources (DENR), the office mandated to manage the natural resources sector. The CCC is charged with coordinating various national agencies and sectors, while the DENR chairs the CCCAM-DRR cluster in which relevant national agencies participate. The National Climate Change Adaptation Plan has been updated, and it includes Environment and Ecological Security as one of seven thematic areas, which represents a potential entry point for mainstreaming EbA. The DENR has already developed a Roadmap of CCCAM-DRR for 2018-2022, based on international disaster risk reduction frameworks as well as national frameworks.

- **Protected Area Management.** The Philippines, as one of the 17 world's megadiverse countries and a biodiversity hotspot, is party to the Convention on Biological Diversity. The government's continuous commitment in biodiversity conservation is also evident in the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 in accordance with the National Integrated Protected Areas Systems Act of 1992, as amended. EbA plays an important role in the implementation of the PBSAP, in that it shifts the focus on the ecosystem services framework for biodiversity conservation. The identification of Other Effective Area-Based Conservation Measures (OECM) is another opportunity for EbA in protected area management.

- **National Adaptation Plan Process.** The National Adaptation Plan process in the Philippines is still ongoing and, with it, the National Climate Change Action Plan (NCCAP) is currently being updated. The update on this plan includes and ecosystem approach to recalibrate the strategic priorities for the adaptation plan. In the current plan, EbA is lodged in the "ecological and environmental stability" thematic priority. However, the Climate Change Commission recognized the importance of EbA as a cross-cutting concept, integrating this in the updated plan 2011-2028 and linking the National Adaptation Plan and Nationally Determined Contribution Processes. The National Framework Strategy on Climate Change embodies the guiding principles on which EbA concept is anchored and the Philippine Development Plan has ensured that climate change is embedded in each chapter. At the subnational level, the National Economic Development Board (NEDA) and the Department of Environment and Natural Resources (DENR) will need to determine the carrying capacities of river basins and critical protected areas using the Strategic Environmental Assessment on Resilience. At the local level, planning is supported by the Housing and Land Use Regulatory Board (HLURB) and the Department of Interior and Local Government (DILG) and, using the results of the Strategic Environmental Assessment on Resilience Framework, local agencies are expected to align local policies and programs with the standards set by the DENR. These, in turn, will be scaled up to the national level through the CCCAM-DRR cluster.

Experiences on FBCCA

- National Climate Change Action Plan

  - The National Climate Change Action Plan (NCCAP) assessed the current situation of the country with regard to climate change risk and outlines the NCCAP's agenda for adaptation and mitigation for 2011-2028 as a response to the current situation and projected impact. It also prioritizes food security, water sufficiency, ecosystem and environmental stability, human security, climate-smart industries and services, sustainable energy, and capacity development as the strategic direction for 2011-2028.

  - In drafting the NCCAP, the multi-sectoral process conducted ensured that the concerns of various sectors are heard and considered. Public financing will prioritize adaptation to reduce vulnerability and risks of communities particularly the marginalized poor. At the same time, the plan will provide a policy environment that will encourage the participation of the private sector to optimize mitigation opportunities towards sustainable development.

- Philippine Master Plan for Climate-resilient Forestry Development

  - Before the Philippine Development Plan was developed, the forestry sector already had its Philippine Master Plan for Forestry Development in 1990. This was revised in 2003 after the United Nations Development Program (UNDP) noted that although there were successes in the implementation of the Master Plan, there were still several major programs that did not progress. Following that, the Forest Management Bureau updated the Master Plan in 2013, taking into consideration the potential impacts of climate change to the forestry sector and was able to develop the Philippine Master Plan for Climate Resilient Forestry Development. It was officially adopted in 2019 and popularized versions of the Master Plan in various vernacular languages were published.

3.4.9 SINGAPORE

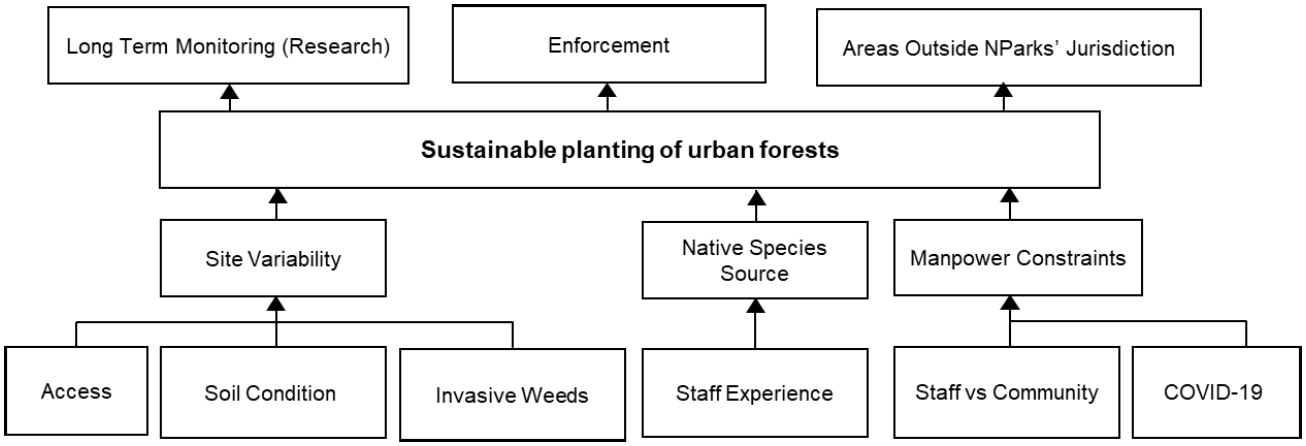


FIGURE 8. PROBLEM TREE ON FBCCA IN SINGAPORE

TABLE 19. SWOT OF FBCCA IN SINGAPORE

Strength	Weakness
• Review standard operating procedures on choosing of site, species to be planted • A form of nature-based adaptation solution (mimicking the multi-layer planting of the forests) • Involvement of non-operational staff	• Tracking of planted trees • Maintenance of the trees (increased cost) • Novelty of planting trees wear off • Community feedback (e.g. various views from public, might make certain groups unhappy, hard to please multiple stakeholders)
Opportunity	**Threat**
• To engage the community involvement of higher learning institutes to contribute to adaptation research • To bet against the conversion of the interim land into permanent parkland (increased in aesthetic value) • Produce new Standard Operating Procedures in planting urban forests that could be exported to other cities	• Long periods of drought • Heavy rain resulting in tree falls and slope failures • Development of the urban areas resulting in lesser green cover • Edge effect and fragmentation

TABLE 20. COUNTRY STATUS AND ISSUES ON FBCCA IN SINGAPORE

Backgrounds and Current status	• Urban biodiversity conservation model: – Conserve representative ecosystems in land-scarce Singapore – Enhance biodiversity in urban landscape – Balance between development and conservation • Increased stakeholder voices on land clearance eg. Dover Forest, Kranji Woods • Air temperature extremes: 20.9 – 35.5 deg C (second warmest decade) • Rainfall 1,266 - 2,748 mm/yr (last decade) • Feb18 – Jun20: Record number of 28 consecutive months of warmer-than-average mean temperatures • Jun 20, Sep 20 – cooler-than-average temperatures • More frequent intense heavy rainfall contributed to flash floods at various locations on the island • Increased visitorship due to COVID-19
Related national policies	• Singapore Green Plan 2030 (SGP2030) • National sustainability movement seeking to rally bold and collective action to tackle climate change • National Biodiversity Strategy and Action Plan (NBSAP 2009) • Encapsulate the objectives and work of Convention on Biological Diversity (CBD), NParks and other stakeholders • Submitted the 6th National Report to CBD • Nature Conservation Masterplan (NCMP 2015) • Aims to systematically consolidate, coordinate, strengthen and intensify the biodiversity conservation efforts outlined in our NBSAP 2009 • The Parks and Trees Act (2005) • Provide for planting, maintenance and conservation of trees and plants within national parks, nature reserves, tree conservation areas, heritage road green buffers and other specified areas, and for matters connected therewith.
Experiences on FBCCA	• N/A

3.4.10 THAILAND

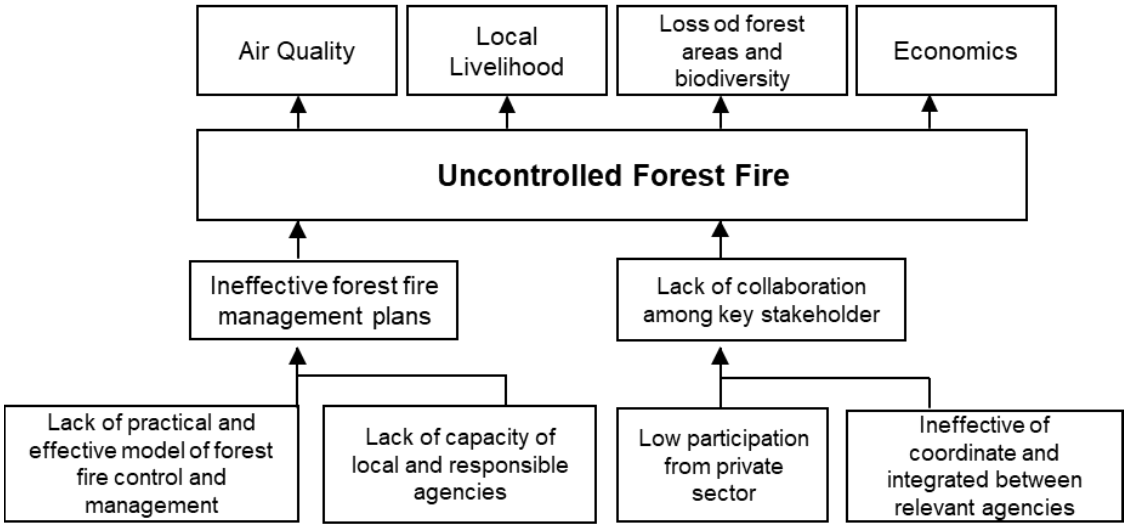


FIGURE 9. PROBLEM TREE ON FBCCA IN THAILAND

TABLE 21. SWOT OF FBCCA IN THAILAND

Strength	Weakness
• There are various specialists , many majors in the RFD. • There is regulation framework to support ; forest community act 2019 • There are 5,414 community forest in Northern, Thailand covers the area about 776,000 hectares. • These community forests are the buffer zone to protect the forest areas	• Lack of capacity and good coordination skills • Inefficiency management within organization • Less experience on integrated community-base forest fire management • New technologies and knowledge are needed for effective operations
Opportunity	**Threat**
• Funding and technology transfers. • Many partner institutions to implementation such as GISTDA may support the latest satellite technology Faculty of Forestry, Kasetsart University for technical and knowledge support.	• Limitation to acquire appropriate technology. • Forest fires incidents. • Climate change may cause of drought and can lead to severe forest fire, uncontrolled

TABLE 22. COUNTRY STATUS AND ISSUES ON FBCCA IN THAILAND

Backgrounds and Current status	• Thailand is located in Southeast Asia. The country's climate is tropical and influenced by the southwest monsoon and the northeast monsoon. The average temperature ranges from 25°C to 28°C. The annual rainfall ranges from 600 to 3,800 mm. Forest cover in Thailand by 2017 was estimated at 16.32 million hectares about 31.58% of the total land area. (RFD, 2017) • Forestry activities in Thailand are composed of forest conservation, reforestation, forest production watershed management, forest protection and people's participation. (RFD, 2009)
Related national policies	• Thailand established the National Forest Policy in 1985 in order to manage and develop the forest resources for sustainability. At present, there are 7 forest laws being employed to regulate the forestry activities as follows: - Forest Act B.E. 2484 (1941) and subsequent amendment B.E. 2532 (1989), - National Park Act B.E. 2504 (1961), - National Reserved Forest Act B.E. 2507 (1964) and subsequent amendments B.E. 2522 (1979) and B.E. 2528 (1985), - Wildlife Preservation and Protection Act B.E. 2535 (1992), - Forest Plantation Act B.E. 2535 (1992), - Chainsaw Act B.E. 2545 (2002). - Community Forest Act B.E. 2562 (2019)
Experiences on FBCCA	• Thailand has formulated the Climate Change Master Plan 2015-2050 as a policy framework for long-term planning for addressing climate change It consists of 3 elements including climate change mitigation, adaptation, and capacity building. In the forest context, RFD has effort toward to sustainable forest management. It emphasizes on increasing forest areas by all stakeholders participations. Although RFD missions involve directly on mitigation, there are many implementations relate to Ecosystem Restoration or Landscape-based Adaptation as follows;

3.4.11 TIMOR- LESTE

TABLE 23. COUNTRY STATUS AND ISSUES ON FBCCA IN TIMOR- LESTE

Backgrounds and Current status	• 2.1. Changes in Forest Areas (2003-2021) • Total forest area has decreased by 183,837 ha (17% of total forest area) between 2003 and 2012; • A total of 171,097 ha of dense forest have been converted into sparse forest or other forms of land use (such as grassland) for the same period; • It is speculated that a large scale of forest had been used for shifting cultivation and converted into forms and grasslands/ bushes/sparse forest (which are fallow lands after farming since Independence. • Major Drivers of Deforestation and forest Degradation • It is predicted the total areas of forest and dense forest would come to 85% (753,332 ha) and 62% (192,769 ha) in 2023, respectively, if the current deforestation and forest degradation trend was maintained as the status quo.
Related national policies	**Key legislation, Policies, and Plans in the forest sector** • Land law (aproved by Parliament in 2017) • Community protection zone: areas to be protected by state for the common interest of the local communities • Communities real state: Areas recognized by communities as property of communities, groups, or individual families. • Forest Policy law aproved by Parliament in July 2017 • State priority: Sustainable community forest management • Customary right on forest to be recognized by the state • Key actions: planning and M&E, Reforestation and Protection, sustainable utilization, and extention. • National strategic Plan (2017-2030) • Coffee Production will be doubled through the rehabilitation by 2020 • Forest management plan will be prepared for promotion of reforestation and sustainable land management
Experiences on FBCCA	**Evaluation of the watershed in Timor-Leste** • There are 191 watershed in total • The majority of them (163 watersheds) have small catchment area (less than 10.000ha) • Only 29 watershed have more than 10.000 ha of catchment areas. **Objective of evaluation and criteria used** • Objectives : To evaluate the watershed in terms of their forests" functions as well as urgency of forest rehabilitation to select priority watershed for future interventions • (2) Criteria for Assessment • Size of watershed >10.000 ha of the area • Function to protect water sources : Existence of large scale rice field in the downstream area and/or a water supply system for major cities or towns in the catchment • Function to prevent soil erosion:Proportion of steep sloping areas (over 26 degree) • Function to conserve biodiversity : Area overlapped with the protected areas • Provision of forest resourses : Forest cover rate and ratio of dense forest in total forests • Urgency/necessity of intervention : Deforestation rate (2003-2012)

3.4.12 VIET NAM

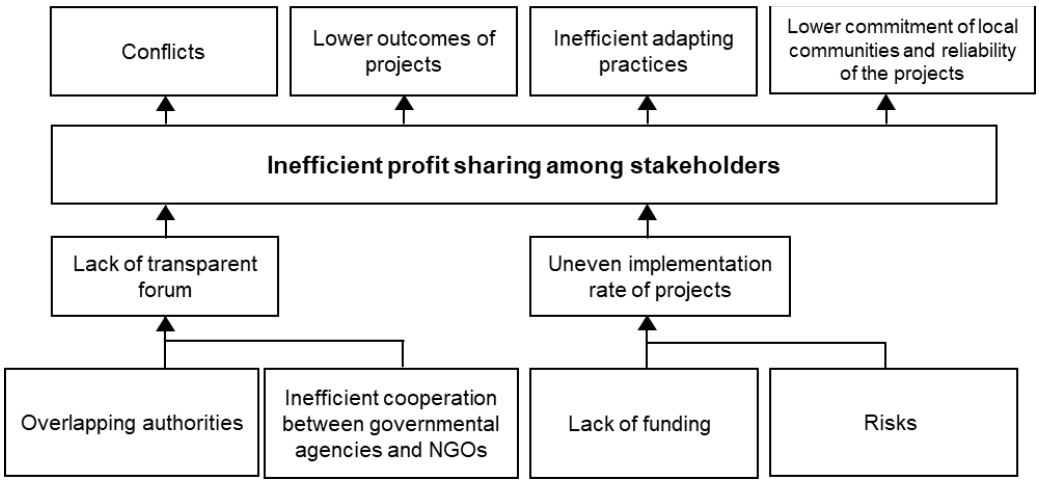


FIGURE 10. PROBLEM TREE ON FBCCA IN VIET NAM

TABLE 24. SWOT OF FBCCA IN VIET NAM

Strength	Weakness
• Transparency • Fairness and equity • Stakeholders' forum	• The cooperation and communication among stakeholders and parties usually lasts for short term, which drags down the reputation and reliability of the project and its outcome
Opportunity	**Threat**
• The raising concern and awareness in public • The rising needs to increase stakeholders' engagement	• Tourism • Urbanization • Spreading of corporation

TABLE 25. COUNTRY STATUS AND ISSUES ON FBCCA IN VIET NAM

Backgrounds and Current status	• The government has shown concerns and prioritized forest-based approach to climate change adaptation practices via legislation and projects since the 1990s • Laws and regulations have been focusing merely on forest protection and development. Other aspects (livelihoods, carbon stock, ecosystem services) have only been tackled very recently. • Increasing encouragement on international cooperation on climate change adaptation, biodiversity preservation, sustainable forest development and management: USAIDs, UN, GIZ, FAO, World Bank, etc. • Main issues being tackled at this stage: Forest area (~14.6 million ha) quality, plantation area (~4.3 million ha), natural forest area (~10.3 million ha) • Major difficulties: - Uneven distribution of projects/legislation implementations within provinces - Different pricing. - Conflicts in changing land-use - Production forest is insufficient and inefficient - Benefits for local communities from forest-based models are inefficient and unclear - Overlapping authorities
Related national policies	• Forest protection and development law (2004) • Circular 27/2018/TT-BNNPTNT (2018) on sustainable development management. • Decision 1055/QĐ-TTg on National Plan to Adapt with Climate Change within 2021 – 2030, towards 2050 • Project 327-CT since 1992 (covering bare lands and mountains) • Project 661 in 2020 (planting 5 million ha of forest); PFES (Payment for Forest Environmental Services); Decision 524/QĐ-TTg (planting 1 billion trees within 2021 – 2025)
Experiences on FBCCA	• Project 327-CT since 1992 (covering bare lands and mountains) • Project 661 in 2020 (planting 5 million ha of forest);

4. TRAINING SCHEDULE

Day	Time	Activity	Remark
30 Apr. (Fri.)	15:00-17:00	Check and confirm Zoom Application connection	The Secretariat
3 May (Mon.)	10:30-11:30	Check and confirm Zoom Application connection	The Secretariat
	11:30-11:40	Opening Ceremony	ED
	11:40-12:00	Instruction to the course & participants	The Secretariat
	12:00-13:00	» Presentation 1. Country report	Dr. Veerachai Tanpipat & Trainees
	13:00-14:00	Break	
	14:00-15:00	» Presentation 1. Country report Q & A	Dr. Veerachai Tanpipat & Trainees
	15:00-17:00 (120')	» Lecture 1. Introduction to Forest-based Climate Change Adaptation Q & A	Ms. Park Joowon
4 May (Tues.)	11:00-13:00 (120')	» Lecture 2. FBCCA and REDD+ Q & A	Dr. Suree Lakanavichian
	13:00-14:00	Break	
	14:00-15:30 (90')	» Lecture 3. FBCCA Approach 1: Biodiversity Conservation and Climate Resilient Genetic Resource Management Q & A	Mr. Hassan Ibrahim
	15:30-17:00 (90')	» Lecture 4. FBCCA Approach 2: Climate Resilient Urban Forestry and Innovative Technologies Q & A	Mr. Hassan Ibrahim
5 May (Wed.)	11:00-12:30 (90')	» Lecture 5. FBCCA Approach 3: Climate Change and Disaster Risk Management Q & A	Dr. Veerachai Tanpipat
	12:30-14:00 (90')	» Lecture 6. FBCCA Approach 4: Community-Based Fire and Water Management Q & A	Dr. Veerachai Tanpipat
	14:00-16:00	Break	
	16:00-18:00 (120')	» Lecture 7. National Strategy and Implementation to Forest-based Climate Change Adaptation Q & A	Mr. Alexandre Meybeck
6 May (Thur.)	11:00-13:00 (120')	» Lecture 8. Climate Change and Sustainable Development Goals (SDGs) in Post COVID-19 Era: Challenges and Opportunities Q & A	Dr. Ma Hwan-Ok
	13:00-14:00	Break	
	14:00-15:30 (90')	» Lecture 9. FBCCA Approach 5: Ecological Resilience and Ecosystem/landscape-based adaptation Q & A	Dr. Suree Lakanavichian
	15:30-17:00 (90')	» Lecture 10. FBCCA Approach 6: Linking Agroforestry: A Nature-based Solution to Climate Change Adaptation Q & A	Dr. Lasco, Rodel D
7 May (Fri.)	11:00-13:00	• Presentation 2. Action Plan	Dr. Veerachai Tanpipat & Trainees
	13:00-14:00	Break	
	14:00-17:00	• Discussion and Feedbacks on Training Course • Closing Ceremony	The Secretariat

5. SESSION SUMMARIES

5.1 LECTURE 1. INTRODUCTION TO FOREST-BASED CLIMATE CHANGE ADAPTATION

I. LECTURE SUMMARY	
A. Lecture Overview	This lecture introduces the concept of forest-based climate change adaptation (FBCCA). It covers a global trend of climate change mitigation and adaptation and offers types and practices of FBCCA.
B. Learning Outcomes	At the end of this lecture, trainees will be able to: • Understand the historical overview of international responses to climate change; • Understand the respective concept and trends of climate change mitigation and adaptation; • Understand the AFoCO's climate change adaptation strategies • Define adaptation to climate change and the concept of FBCCA; and, • Distinguish different types of FBCCA.
C. Content	(1) Concept and trend of climate change mitigation (e.g., Net-zero, carbon-offset etc.), adaptation (e.g., NAPs, LAPAs, etc.), and cross-cutting (e.g., REDD+, NDCs, etc.) (2) Concept and strategies of FBCCA (3) Types of FBCCA (4) AFoCO's progress on the FBCCA strategies

II. LECTURE SUMMARY

A. Environmental, social, economic, and other benefits of FBCCA

Environmental	Social
• Protection of wildlife habitat • Biodiversity and watershed conservation • Provision of clean air and water supply • Cooling effects, improvement of microclimate • Wind breaker for coastal areas • Carbon sequestration and carbon stock • Reduced forest fire, forest degradation • Reduction of soil erosion • Biodiversity sightings	• Health and wellness • Safe drinking water and air • Food security, by preserving land productivity and water • Reduce landslide, flash foods • Shelter communities from the natural disaster • Mental and physical health • Creation of jobs • Happiness • Preserve spiritual and cultural values
Economic	**Others**
• Provision of wood fuel (energy access for low-incomes) • Safeguard hydro power generation • Saving costs in disaster • Increase agricultural productivity and creation of jobs • Increasing income • Livelihood of disadvantaged areas • Wood production, processing • Carbon credits, markets • Animal husbandry • Investment options	• Landscape and recreational values • Study site for research purposes • Encourage cooperation and knowledge

B. Opportunities & Challenges in pursuing climate adaptation actions with AFoCO		
Bhutan	**Kazakhstan**	**Singapore**
• O: Learn and exchange scientific and technical expertise, Collaborate with all member countries with AFoCO, Build institutional and human capacities, Can raise concerns to international arena • C: Consistency in collaboration Estimating the cost for adaptation actions	• O: N/A • C: N/A	• O: sharing of experiences and capacity building • C: limited and competing land use for development to cater for an increased population
Brunei	**Mongolia**	**Thailand**
• O: Learning the best practices done in pursuing Climate Adaptation actions • C: Insufficient technical expertise available in Brunei to actual implement the climate adaptation project & ensuring its sustainability	• O: Assisted training advanced specialists; Share experiences with AFoCO member countries; Opened opportunity to receive international financial support for forestry sector • C: Mongolia's forestry sector frequently undergoes a lot of structural changes, which makes it difficult to continue activities	• O: Can create and increase more CC Adaptation project in TH and in the region • C: How and what to identify Appropriate and Efficient Outcome?
Cambodia	**Myanmar**	**Timor-Leste**
• O: Clear policy/priority on climate change adaptation, Provide capacity building to member countries, Networking opportunity, Clear project manual and guideline, Provide technical support and guidance • C: Climate changes affect most countries in the world so there will be a small chance to get funding for the project proposals	• O: Community-based forest restoration; livelihood improvement activities identified, financial supports and technical recommendation • C: Insufficient evidence and demonstration of climate change adaptation benefits; • Limited awareness of the local communities and limited capacity of the forestry staffs	• O: 1. Adaptation for Forest Component - Learn good reforestation techniques and methods from AFoCO member countries that have experience in reforestation. For example Korea, Participating in training organized by AFoCO to increase knowledge about the implementation of activities related to forest conservation. • O: 2. Forest for adaptation component - Strengthening community resilience to climate change adaptation through livelihood support in project implementation from AFoCO, • C: Limited human resources and the covid 19 pandemic situation.

Indonesia	Philippines	Viet Nam
• O: Significant forest cover with high biodiversity; Local wisdoms in forest management; Support from other countries and also from the research, results regarding climate adaptation actions; Raising issues of sustainable development at global level, Increasing community participation through community-based forest management • C: Land tenure conflicts; Poor climate issue literacy; Conflict of interests among stakeholders; Limited budget; Awareness of food resilience in term of CCA	• O: Engagement in previous and ongoing climate change adaptation projects, Technical assistance, exchange of experiences, and sharing of best strategies in climate change adaptation; Felt needs/Awareness of the communities on the importance of CCA, possible technology transfer to support REDD+ initiatives of the country • C: that proposed projects are within the priority areas for funding, Creating strong rationale for project proposals, Measuring impacts of CC related projects/programs	• O: Knowledge exchange, especially around the management scheme among partner countries • C: Covid pandemic

5.2 LECTURE 2. FBCCA AND REDD+

I. LECTURE STRUCTURE	
A. Lecture Overview	This lecture introduces the policy framework for FBCCA and REDD+: how a set of arrangements is formed from local procedures to guidelines, standards, policy, and legislation. It also introduces cases of climate financing mechanism under negotiation or decision-making to guide a more detailed set of REDD+ and adaptation strategies in forestry sector.
B. Learning Outcomes	At the end of this lecture, trainees will be able to: • Understand the development of policy framework for FBCCA and REDD+; • Understand the climate financing mechanism for FBCCA and REDD+; and, • Describe the country's policy framework
C. Content	(1) Concept of the policy framework (2) Development of the policy framework for FBCCA and REDD+ (3) Climate financing mechanism under FBCCA and REDD+ (4) Challenges and opportunities

II. INTERVENTION OF MEMBER COUNTRIES

A. Would it be possible to reverse the GHG emissions in your country, particularly CO2 emissions from forest conversion to agriculture or other types of land uses?

Country	FBCCA methods to reverse the GHG emissions
Bhutan	• Bhutan is Carbon negative and the country is committed to maintain carbon neutral even in future. Urban forest, green belt and soil and Land Management, introduction of electric car, improvement of public transportation, sustainable forest management (participatory forestry management, efficient management of PAs, production forestry, green infrastructure) help reduce the GHG emissions.
Brunei	• It would be possible through: • Brunei Darussalam National Climate Change Policy (BNCCP) with 10 key strategies with the aim towards a low carbon and climate-resilient in Brunei Darussalam, particularly by Strategy 2 planting 500,000 new trees by 2035 • Green Protocol Guideline where any developmental activities that involve cutting down trees are required to plant new trees with the ratio of 1:1
Cambodia	• Agroforestry system, planting more trees in the agricultural landscape and promoting climate-smart agriculture, food forests are able to reverse the emissions.
Kazakhstan	• Tree plantation would be possible to reduce the GHG emissions.
Indonesia	• It would be possible. About 17% of 29% total Indonesia's NDC is from the forestry sector. Indonesia put best efforts to reduce GHG emission from forestry sectors.
Mongolia	• It would be possible if we practice protection from insects and animal husbandry, no illegal logging and prevention of forest fire.
Myanmar	• In Myanmar, the following activities are currently being implemented to contribute the reducing emissions of GHGs; • REDD+ Phase II Implementation Stage (2019 – 2022), • Promoting Agroforestry System to substitute the shifting cultivation practices, • Implementing Community Forestry Programme (Target 2.27 million hectares), • Constituting of Reserve Forests and Protected Public Forests (Target 30 % of Total Country Area by 2030) • Establishment of Protected Areas (Target 10 % of Total Country Area by 2030)

Philippines	• In 2010, GHG Inventory, forestry, and agriculture were only measured. GHG emissions on land-use change were not measured. • In 2010, the Philippines measured its GHG emissions and found that the forestry sector is actually a net emitter. The Government wants to retain this status, however, for the second round of inventory, the Philippines is aiming to use Tier 2 methods to produce more accurate results which may affect the emissions status of the forestry sector
Singapore	• The forest - related sector has limited role to reduce emissions as of the main contributors to Singapore's carbon emissions come from other sectors especially the energy sector • Skyrise greenery and roadside greenery help in climate mitigation actions.
Thailand	• It is possible to reverse the GHG emission in Thailand, but we need high technology and knowledge to implement, we need technology transfer.
Timor-Leste	• It is possible because Timor-Leste have forest Conservation Plan through the Forest Preservation Programme (2013). • Timor-Leste have Forest Management Policy (2017) • Timor- Leste is under development countries. That's why the GHG emission still not significant impact but Timor-Leste also took part as member of COP Paris, and committed to reverse GHG emission
Viet Nam	• It is possible in the long-run, but for now Viet Nam is still struggling to settle and balance the conflicts and benefits among parties when it comes to land-use change. There is yet any remarkable policy and planning regarding forest conversion and its mitigation.

B. What is the best strategy or option of FBCCA that your country may select for further development up to now?

Country	Strategies to Promote FBCCA
Bhutan	• Sustainable forest management should be strengthened for FBCCA development.
Brunei	• Integrating the practice of agroforestry in future agricultural activities will support to FBCCA.

Cambodia	• There are some points for FBCCA;
	  • Restoration of degraded lands/forests with the participation of local communities (community forestry)
	  • Promoting soil and water and conservation in the agricultural landscape
	  • Awareness-raising on FBCCA
	  • Restoration of buffer areas along the rivers and lakes

Kazakhstan	• Funding proposal / carbon-pool industrial can be considered as the strategy for development.
Indonesia	The following activities will be matched for FBCCA development of Indonesia. a. Social forestry programs: a collaborative forest utilization program with local people using agroforestry b. PROKLIM establishment: a collaborative strategy to increase climate change awareness for villages that prone to climate change impacts c. Forest fire care establishment: a collaborative strategy to combat forest fire with local people. d. Establishment of local nursery: government provides a budget to establish a number of nurseries across the country for forest rehabilitation and reforestation programs e. Government of Indonesia enacted a set of regulations mandating to stop giving permits for primary forest and peat swamp forest utilization.

Mongolia	• The National Climate Change Program is being implemented. • Programme on Scaling up Climate Ambition on Land Use and Agriculture are supported through Nationally Determined Contributions and National Adaptation Plans – Regional. • Its mitigation target is articulated as a 22.7% reduction in total national greenhouse gas (GHG) emissions by 2030 compared to the projected emissions under a business-as-usual scenario for 2010, focusing on the transport, industry, agriculture, and waste sectors, among others. It also includes a distinct adaptation component with goals and targets for priority areas such as animal husbandry and pastureland, arable farming, water resources, forest resources, and biodiversity.

Myanmar	• It would be Nature-Based Solutions (NBS) such as
	  • Agroforestry
	  • Agrosilvopastoral Systems
	  • Community Forestry
	  • Reforestation
	  • Urban Forestry and Green Space
	  • Payment for Ecosystem Services (PES)
	  • Carbon Credit through REDD+
	  • Carbon Trade
	  • Protected Areas System Management

Philippines	• Intensified Forest protection and reforestation REDD Plus (an incentive-based mechanism) and protection of existing forest to reduce emissions from deforestation will be the best options for FBCCA development.
Singapore	• Forest Restoration Action Plan (FRAP), planting of native species, multi-layer planting to emulate the forest structure (added co-benefits of ecological and biodiversity connectivity) help develop FBCCA.
Thailand	• We select the forest landscape restoration based option, forest in TH has the capacity to implement and there are many research and studies report to support the implementation
Timor-Leste	• Timor-Leste implemented ecosystem based adaptation such as maintaining or restoring forest and vegetation cover, protection of genetic resources in agriculture and the aspect of biodiversity conservation.
Viet Nam	• We have been working on the engagement of local communities into forest management and development. However, their role in the conversation of decision-making is not significant, while in many regions, forest has played an irreplaceable position in cultural, spiritual life and their livelihood for generations. Thus, a good option for FBCCA in Viet Nam is increasing this engagement level.

C. What kind of REDD+ themes are you working at present or planning to work?

Country	REDD+ themes
Bhutan	• Reducing Deforestation, sustainable forest management, conservation of forest carbon stock, enhancement of forest carbon stock are currently implementing in REDD+ process.
Brunei	• There is no REDD+ body in Brunei, however if there is, we would like to work on the National Forest Monitoring Systems as we need consolidated information on how land is being used in the country. We also need data & maps that could show where forest removals are most prominent, the resulting GHG emissions and vice versa. Currently Brunei is relying on Brunei Darussalam Climate Change Policy (BNCCP) that has been established to pave the country's low carbon and climate-resilient pathways for a sustainable nation.

Cambodia	Cambodia was being implementing in 2 different REDD+ themes: 1. National Forest monitoring systems theme: the project entitled "Reduced Emissions from Deforestation and Degradation in Keo Seima Wildlife Sanctuary", which started the implementation in 2010 in Mondulkiri province. • Use "Methodology for avoided unplanned deforestation" • GIS and SMART for spatial monitoring. • First monitoring report (2010-2015), second report (2016-2017) and third report (2018-2019). • First verification in 2017 and second verification in 2018 • Nearly 25,000 ha of unplanned deforestation of ecologically significant forest was prevented and over 10 million tCO2e of emission reductions from avoided unplanned deforestation achieved during the first verification period. **2. Safeguards theme:** implemented since 2015 in Kampong Thom province (project entitled "Sustainable Forest Management through REDD+ implementation in Kampong Thom province"). • Conserve natural forest and biodiversity in the project area. • Participated by relevant stakeholders: Forestry Administration (FA) national level, FA provincial level and local level, local authorities, local community and indigenous people. • Consisting with Cambodia National Forest Program and other related policies. • Multi-benefits for local communities: land tenure registration, social capital enhancement, and increased NTFPs for local uses and provide livelihood options. • Supported the process of land use mapping in the targeted area. • Address the drivers of deforestation and forest degradation in the area.
Kazakhstan	• N/A
Indonesia	• Since 2010 – 2016 (Readiness) Indonesia have been designated for REDD+ instruments based on warsaw framework and cancun agreement: National REDD+ Strategy, National Forest Monitoring System (NFMS), MRV system including National Registry system, Forest Reference Emission Level (FREL), and Safeguards Information System (SIS) as well as Demonstration activities. • Indonesia developed REDD+ full implementation through result based payment or performance based payment as article 5 Paris Agreement • LOI RI - Norway: Indonesia succeed to achieve reduce emission in 2016 -2017 with 11,2 million ton CO2eq. Indonesia will receive an incentive payment of USD 56 million. • Indonesia succeed to achieve reduce emission in 2014 -2016 with 20,3 million ton CO2eq. Indonesia will receive an incentive payment of USD 103,8 million. • Forest Carbon Partnership Facilities (Kaltim): REDD+ based on Land activities. Output the project to develop instrument REDD+, and capacity building (2010 – 2020). Kaltim still on going to implement ERs programme (2020 – 2024). The target to achieve ERs is 22 million ton CO2eq with an incentive payment of USD 110 million. • BioCF – JSLMP (Jambi Sustainable Landscape Management Programme): BioCF – JSLMP is a program to reduce deforestation and forest degradation in an area that includes forested areas (forest cover in other use areas) and peatlands, as well as increasing the wealth of significant biodiversity globally (including endangered species such as tigers, elephants, and orangutans) and supports many indigenous peoples/ customary communities and other forest communities based on sub national level (Sub-National). There are 3 phases: a. Preparation (2019 -2021) b. Pre Investment (2021 – 2025) c. Result Based Payment (2021 – 2025) If Jambi Province can reduce emissions of 14 million tonnes Co2eq in the period 2021 – 2025, Jambi will receive incentive payment of USD 70 million
Mongolia	• Currently, Mongolia is under implemented theme; • REDD+ Readiness phase (2015-2019): Under the REDD+ Readiness phase, has gained both technical and/or financial support from key national institutions and partners who will play active roles and take part in specific components of the readiness phase.

	• With support from the UN-REDD Mongolia National Programme, the following three Technical Working Groups have been established: (1) Identified drivers of deforestation and degradation and formulated the REDD+ Strategy, (2) Proposed methodologies for the development of forest reference emission levels and forest reference levels and conducted pilot demonstrations, (3) Prepared and implemented a gender-responsive Consultation and Communication Plan. • Planning to work: Based on the readiness phase, it is planned to organize the implementation in certain regions. The project proposal is being developed jointly by the Food and Agriculture Organization of the United Nations and the Ministry of Environment and Tourism with the financial support of the Green Climate Fund. The planned period is between 2022 and 2025.
Myanmar	• The REDD+ activities were initiated in 2012, and Myanmar National REDD+ Roadmap was developed in 2013. • Currently, implementing and taking rapid steps in REDD+ Readiness Phase I activities and at the same time, initiating some pilot phase II activities as the phases are not mutually exclusive. • Four key elements have been designated for REDD+ readiness: National REDD+ Strategy, National Forest Monitoring System (NFMS), Forest Reference Level (FRL), and Safeguards Information System (SIS). • The National REDD+ Strategy has been finalized through several multi-stakeholder consultations and technical meetings. • Regarding the national forest monitoring system (NFMS), the government endorsed it in 2015 taking two main actions on Satellite Land Monitoring System (SLMS) and National Forest Inventory. • Myanmar's Forest Reference Level (FRL) (calculating three carbon pools: above ground, below ground and litter) was submitted to the UNFCCC in January 2019 and accepted by the UNFCCC. • Myanmar's safeguard road map has been developed in 2017, and the national clarification of the UNFCCC REDD+ safeguards (Cancun Safeguards) for Myanmar has been published in May 2019. The development of the SIS operationalization plan and Summary of Information (SOI) is ongoing.
Philippines	• The Philippine National REDD-Plus Strategy (PNRPS) was developed in 2009 with a ten-year frame from 2010-2020 and is being currently reviewed and updated. • A roadmap was developed to help the country in transitioning from the Readiness Phase to the Implementation Phase and to avoid duplication and repetition of the different REDD+ activities across the country. • The REDD+ Roadmap was adopted in September 2020. • The SLMS is currently being developed through the creation of a Tree Cover Model that will allow us to produce forest cover maps at a regular interval. The Forest Resources Assessment methodology is being updated to increase efficiency and incorporate carbon stock assessment parameters. This shall serve as the National Forest Inventory (NFI).
Singapore	• Singapore does not intend to have any REDD+ projects.
Thailand	• Thailand does not have National REDD+ strategy or plan yet, still on the process to develop and have no implementation now.
Timor-Leste	• N/A
Viet Nam	• Indigenous peoples, Forests and REDD+: Sustaining and enhancing forests through traditional resource management – Case study of Viet Nam: Reclaiming traditional forest management practices are currently being implemented. • Proposal for REDD+ Readiness in Viet Nam regarding National REDD+ Program, National Forest Monitoring System, Forest Reference Emission Level/Forest Reference Level, and Safeguards Information System has been submitted and reviewed, and now is under preparation to implement.

D. Among the sad themes/trends, which REDD+ theme is the most difficult if being implemented in your country?

Country	Difficulties in implementing REDD+ in your country
Bhutan	• Forest carbon stock enhance as we don't have scope to increase forest area and reduce emission level due high baseline data

Cambodia	• The two different REDD+ themes implementing in Cambodia have some challenges in implementing:
	  • Implementing capacity and management
	  • Costly/limited fund
	  • Indigenous people and local community involvement: limited awareness
	  • Lack of participation from stakeholders esp. private sectors
	• However, the level of difficulty/challenges also depends on the scope area of the project. For example, the National Forest Monitoring systems theme was being implementing in a larger scope area which covers an entire wildlife sanctuary.

Indonesia	• The challenges facing in Indonesia are
	  • Lack of knowledge stakeholders to understanding REDD+ particularly local government, local NGOs, and community.
	  • Integration REDD+ Programme into Province Government programme.
	  • Benefit sharing plan: how to disbursement funding of result based payment to stakeholders based on their performance.
	  • MRV: Uncertainty analysis needed more detail data and complex.
	  • Lack of financial issues

Mongolia	• **The number of people trained in this field was insufficient so lack of professional staff** is also one of the limitation in implementing of REDD+. • The accountability of local experts in monitoring, reporting and evaluation was not good. • In some cases, funding was disrupted due to lack of regular budgeting. • The policy and, in some cases, some action indicators were problematic for us to assess and quantify.
Myanmar	• Three main issues to be addressed in implementing REDD+ activities in Myanmar can be identified as- 1) Policy and legal issues such as inconsistencies of land related policies and legislations, land use conflicts among the relevant stakeholders, lack of integrated development plan, weak coordination among the related Govt. Ministries, weak in law enforcement, etc. 2) Technical issues such as limited quantitative data for drivers of deforestation (by region, by types of forests), lack of updated national forest inventory data and historical data for setting up FREL, limited individual and institutional capacity and expertises, etc. 3) Financial issues such lack of financial resources for REDD+ readiness, limited incentives to mobilize financing from the private sectors, etc.,
Thailand	• Safeguards system is the most difficult. • Legal and regulation issues • Land ownership issues
Viet Nam	• Effective participation of indigenous people in global & national REDD+ processes should be strengthened and ensured: This was studied and funded from 2009 to 2010. However, the role of these communities remained passive; they rely heavily on the continuity and funding of projects. There isn't any effective plan to prepare for their sustainable independence.

E. Question from Cambodia: How much have you invested your resources in Forest-based Climate Change Adaptation and REDD+? if no, why?	
Country	Investment Scale of FBCCA & REDD+
Indonesia	• In Indonesia, REDD+ programme is implementing in sub national level. • BioCF – JSLMP is a program to reduce deforestation and forest degradation in an area that includes forested areas (forest cover in other use areas) and peatlands, as well as increasing the wealth of significant biodiversity globally (including endangered species such as tigers, elephants, and orangutans) and supports many indigenous peoples/customary communities and other forest communities based on sub national level (Sub-National). J-SLMP will tackle deforestation by addressing the underlying governance issues through policy reforms, involving relevant stakeholders, especially palm oil companies, forestry companies and involving local communities. JSLMP consists of 3 phases with funding of approximately USD 85 million with support from the World Bank which consists of: a. The preparation phase (2019 - 2021) with a grant of USD 1.5 million which aims to prepare a project to develop a REDD organization and REDD+ instruments (FREL, MRV, Safeguard, Benefit Sharing Plan, Emission Reduction Project Document) and improve enabling conditions to reduce emissions in Jambi, including capacity building for sub-national level. b. Pre-investment phase in 2021 - 2025 with a grant of USD 13.5 million to support and strengthen institutions, Formulate policies and interventions for implementing integrated sustainable land management (forest-smart agriculture) to reduce emissions including priority non-carbon benefits, protection of biodiversity and other ecosystem activities, improve livelihoods of local communities, reducing tenurial conflicts, forest and fire management, and developing an emission reduction framework including institutional framework benefit sharing for Jambi Province. c. The performance-based payment phase of USD 70 million is performance-based funding if Jambi Province can reduce emissions of 14 million tonnes of Co2eq in the period 2021 - 2025. This payment will be made after the Emission Reduction Payment Agreement (ERPA) is agreed and signed by both parties. This incentive distribution is based on proportional equity for all stakeholders in Jambi Province including the communities around the forest and in the forest who contribute to reducing emissions and maintaining carbon stocks. For the private sector, it is planned to receive non-monetary incentives. ERs results will be contribute in Indonesia's NDC.
Viet Nam	• Viet Nam has been implementing some activities for Forest-based Climate Change adaptation, such as: Decision 1055/QĐ-TTG on National Plan to Adapt with Climate Change within 2021 - 2030, towards 2050. Planting 5 million ha of forest (661 project), or recently with Decision 524/QĐ-TTg (Planting 1 billion trees within 2021 - 2050) and for REED+: Most of state in Viet Nam having REED+ plan action at Provincial level.

E. Question from Cambodia: How much have you invested your resources in Forest-based Climate Change Adaptation and REDD+? if no, why?	
Country	Good examples on REDD+ National Forest Monitoring System
Bhutan	• By establishing permanent plots systematically and monitoring after regular interval
Brunei	• Brunei do not have NFMS at the moment
Cambodia	• sub-national
Indonesia	• Indonesia established NFMS based website http://webgis.menlhk.go.id:8080/ kemenhut/index.php/id/peta/peta-interaktif • Indonesia still discusses to develop National Emission Level Monitoring system including Forestry
Thailand	• Thailand's Carbon RL is not release yet. It has been far too long. • We have permanent plots throughout the country, but to link those field information with Remote Sensing and GIS is not well just yet.
Viet Nam	• To estimate/value Carbon capacity in each type of forest, some permanent plots are distributed throughout the country.

III. SUMMARY

- Almost all of the member countries are trying to reverse the GHG emission from the forestry sector through the implementation of reforestation, rehabilitation, agroforestry systems, reducing illegal logging, forest fires, forest pest management, participatory and sustainable forest management under the respective country's legislation.
- Bhutan is the carbon-negative and committed to maintain the carbon neutral.
- In case of Singapore, the carbon emission would be much higher from the energy sector rather than the forest sector. Thus, skyrise greenery and roadside greenery would help in climate mitigation actions.
- According to the participants' response, the forest/ landscape restoration/ rehabilitation is identified as the best strategy to promote FBCCA and followed by the Agroforestry/ Community/ Social forestry and Carbon pool industry/ REDD+/ PES/ Carbon trade/ GHG emission reduction as the second-best option.
- Protection and conservation of existing forest and raising awareness of the indigenous people is another option voted by some member countries for promoting FBCCA.
- Under REDD+ themes, Indonesia have completed full implementation and four member countries namely, Cambodia, Mongolia, Myanmar, Vietnam have reached the REDD+ readiness stage and Philippines has developed REDD+ roadmap while four countries such as Brunei, Singapore, Thailand, and Timor-Leste stated that there are no REDD+ activities.
- According to those countries where REDD+ activities have been implementing, the following challenges have been encountered:
  (1) Financial Issue (KH, ID, MN, MM)
  (2) Policy and Legal Issue (ID, MM, TH)
  (3) Lack of Awareness of Community and their effective participation (KH, ID, VN)
  (4) Technical Issue (ID, MM)
  (5) Capacity Issue (KH, MN)
  (6) Others (low accountability, benefit sharing issue, land ownership) (ID, MN, TH)

5.3 LECTURE 3. FBCCA APPROACH 1: BIODIVERSITY CONSERVATION AND CLIMATE RESILIENT GENETIC RESOURCE MANAGEMENT

I. LECTURE STRUCTURE

A. Lecture Overview	This lecture introduces FBCCA practices in biodiversity conservation and genetic resource management to encourage the trainees to brainstorm their country's strategies.
B. Learning Outcomes	At the end of this lecture, trainees will be able to: • Approach biodiversity conservation and genetic resource management linking to the country's climate change adaptation policies; • Distinguish FBCCA-related biodiversity conservation and genetic resource management; and, • Initiate to develop its related strategies of the country.
C. Content	(1) Concept of climate-resilient genetic resource management (2) Strategies and measures (3) Case study (e.g., seed/gene bank, seed vault, etc.) (4) Challenges and opportunities

II. INTERVENTION OF MEMBER COUNTRIES

Country	Q1. Public recognition on biodiversity conservation & value of nature Q2. Status of genetic resource management (flora & fauna)
Bhutan	• Biodiversity/environment conservation has been identified as one of the 4 pillars of GNH along with economic development for healthy and sustainable environment for present and future generations • Throughout the centuries, the Bhutanese have treasured their natural environment and have looked upon it as the source of all life. This traditional reverence for nature has delivered people into the twentieth century with richly intact environment.
Brunei	• Forestry Department is committed in ensuring forest cover in Brunei not less than 72% via afforestation & reforestation effort, rehabilitation, extension of gazette forest areas and increasing Ex-Situ plant collection

Cambodia	• Rectangular Strategy recognizes the importance of biodiversity for economic growth
	  • 7.2 million ha or 41% of land area under various forms of protection
	  • Providing ecosystem services for support economic growth
	  • Traditional use/knowledge of the forests/forest products
	  • Cultural forests
	• Challenges are;
	  • Infrastructure development
	  • Increase population
	  • Land conversion for agriculture development

Indonesia	• Economic development is the mainstream indicator of development to achieve the welfare of the population around the world, including in Indonesia. It is undeniable that most of the Indonesian people then place economic development as the target of development at the expense of its various resources, including biodiversity. Degradation and deforestation has led to the extinction of biodiversity in the development era, between the late decade of 1960's to the last decade of 1990's. The awareness of biodiversity conservation started to rise with the issuance of Act No. 5 of 1990, about Conservation of Natural Biodiversity and Ecosystem. This was followed by the Act No. 5 of 1994, to ratify the United Nations Convention on Biological Diversity. Conservation programs then launched by various stakeholders from government, NGO and private sector, civil society as part of sustainable forest management in Indonesia. Government commitment to the genetic resources shown by the issuance of the Act No.11 of 2013 concerning Ratification of the Nagoya Protocol about Access to Genetic Resources and the Equitable and Balanced Sharing of Benefits Arising from Their Use in the Convention on Biological Diversity. The government then strengthened the protection of genetic resources with the enacted Act No. 13 of 2016 about Patent. The Ministry of Environment and Forestry Indonesia has also taken a lead in some discussions about the protection of genetic resources with related parties in Indonesia.

Mongolia	• Due to the transitional ecosystems and harsh continental climatic conditions, the biodiversity in Mongolia is unique and delicate. Thus, our population sees conservation of biodiversity as a fundamental economic factor. • Recently, people's attitudes towards biodiversity protection are changing. So that Environmental partnerships, public organizations and non-governmental organizations are being formed on the initiative of citizens to protect the environment around them. • Law on Natural Flora, 1995 • Law on fauna, 2012 • National Biodiversity Program, government resolution of 2015 • National Program for the Protection of Rare Animals, 2002 • Law on regulation of foreign trade in rare animals and plants and their derivatives, 2002 • The Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1996
Myanmar	• Nature and Wildlife Conservation Division under FD mainly responsible for protected area management to conserve biodiversity • 10% of the country area targeted accord. to 30yrs. National Forestry Master Plan • Conservation of Biodiversity and Protected Areas Law (2018) already developed • Total numbers of protected areas – 46 (6.08%) (till May 2021) • Communities' awareness raising still necessary • Illegal logging and wildlife trade still occurring esp. in the border area due to employment scarcity and poverty with the population growth
Philippines	• In the Philippines, it is considered that If biodiversity management becomes effective, it produces revenue, which in turn provides the financing for biodiversity management. If the condition of the biodiversity and ecosystems are improved, their contribution to resilience building of communities to the effects of anthropogenic and natural pressures (e.g. climate change) is better and their ability to provide ecological goods is increased.
Singapore	• Economic development is favored over conservation under circumstances where for example, train station to be built near homes or when homes are preserved. Conservation is favored when there is a need for example for less crowds or noise. • Growing voices and more media presence from nature groups • Gazetted nature reserves are not touched. Chek Jawa was protected after deliberation.
Thailand	• Thai people know that biodiversity, contributing to Thais' way of living since the past, resulting in a variety of food, medicines and tools necessary for living, as well as being the foundation for economic and social development, They learned that idea from generation to generation. • Thailand has the Master Plan for Integrated Biodiversity Management B.E. 2558 – 2564 (2015-2021) aims to address the underlying causes of biodiversity loss by mainstreaming biodiversity across public and civil society sectors. Reduce direct pressures on biodiversity and promote sustainable utilization of biodiversity. Improve the status of biodiversity by safeguarding ecosystems, species, and genetic diversity. Enable management to enhance the benefits from biodiversity and ecosystem services. • Thailand set up the Clearing House Mechanism by Art.18 of CBD Convention and provided all Biodiversity necessary data need. • The 6th National Report on Biological Diversity (4 year) • Public Relations, Advertising Campaign, School and University Curricula, etc. • (Draft) Biodiversity and benefit sharing Act.
Viet Nam	• n/a

5.4 LECTURE 4. FBCCA APPROACH 2: CLIMATE RESILIENT URBAN FORESTRY AND INNOVATIVE TECHNOLOGIES

I. LECTURE STRUCTURE

A. Lecture Overview	This lecture introduces FBCCA practices in urban forestry and nature-based solutions to encourage the trainees to brainstorm their country's strategies
B. Learning Outcomes	At the end of this lecture, trainees will be able to: • Approach urban forestry scheme linking to the country's climate change adaptation policies; • Distinguish FBCCA-related innovative technologies; and, • Initiate to develop urban forestry strategies in the FBCCA approach.
C. Content	(1) Concept of climate-resilient urban forestry (2) Introduction to innovative technology related to FBCCA (3) Case study (4) Challenges and opportunities

II. INTERVENTION OF MEMBER COUNTRIES

A. National Concept of Urban Forests/Forestry

Country	National concept of urban forests/forestry
Bhutan	• Urban forestry is not popular in Bhutan (not necessary at this juncture) • Landscaping or beautification of streets and compound of the institution is picking up and appointment of City Environment office and district beautification officer has taken place
Brunei	• This concept is still under-explored in Brunei, however, there are fragments of forests in the city of Brunei and trees planted along roadside/highways. This is maintained by the Department of Environment, Parks and Recreation under the Ministry of Development which is a separate body from the Ministry of Primary Resources and Tourism which the Forestry Department is under. • There is one park in the city to be reforested and maintained manually. The use of technologies for urban forestry maintenance is still under-utilized.There is a policy by the Town and Country Planning Department where any building developments must allocate 10% of their area as green space.
Cambodia	• Trees are planted in the urban areas for beautification, shade, reducing air pollution, provision of fruits and foods. It is under the management of Municipal Department of Public Work and Transportation. • It is a form of forest management recognized by the National Forest Program. Local Forestry Administration and the Municipal Department of Public Work and Transportation collaborate on urban forestry.
Kazakhstan	• In Kazakhstan, the state forest fund and green areas around cities are under the jurisdiction of the Committee for Forestry and Wildlife and local executive bodies (regional akimats). Urban plantings are under the jurisdiction of the akimats of the Akimats of cities and towns. • As such, there is no urban forest with parks, squares, forest parks.
Indonesia	• The urban forest is an effort to develop forest in urban areas which aims to reduce pressure on the area and function of natural forests which are decreasing due to various needs. Meanwhile, according to the Government of Indonesia, the concept of the urban forest, as stipulated in PP No. 63/2002 is to emphasize the aspects of sustainability, harmony, and balance of the urban ecosystem which includes environmental, social, and cultural elements. This concept was then developed in the Forestry Ministerial Regulation No P.71/ Menhut-II / 2009 in which it specifically states that the goal of urban forest development is to suppress/reduce the increase in air temperature in urban areas; suppress/reduce air pollution; prevent declining groundwater and soil surface; and also prevent flooding or inundation, drought, seawater intrusion, increased heavy metal content in water. In Indonesia, urban forests are managed by each local government in accordance with the Urban Spatial Plan (RTRWP) that has been prepared by each region.

	By design, the urban forest is built on an area of at least 0.25 ha with an elongated area/lane or in groups, where its use is more open, containing green plants or plants that grow naturally or cultivated plants. These plants will carry out their function as carbon sinks, which indirectly have helped mitigate climate change.
Mongolia	• Forestry Sector engaged in afforestation, protection, conservation, use, restoration, research, identification, and management of forest resources. Regarding Urban forests, general urban plan focus on construction design, reducing air, water, soil, and noise pollution, imbalance of Nature and disaster prevention. • Gardens, squares, streets, parks, mini gardens, green line, and natural landscapes are established under urban forestry.Urban forests are managed by Aimag, capital city, soum and district governor's office and Forestry are under the management of Ministry of Environment and Tourism. • Mongolia does not have the design and technologies to maintain urban forests.

Myanmar	• Roadside forest plantation, green space and playground for recreation, landscape and shelter are established and Green campaign and tree planting ceremony in the rainy season are organized every year.
	• Main benefits of urban forests in Myanmar are
	  • Environmental benefit – improve air and water quality, mitigates from wind and soil erosion, store carbon
	  • Economic benefit – creates a favorable impression, attracts tourists and businesses
	  • Benefits for energy – save energy, (cooling in hotter months, winter barrier during winter)
	  • Health benefits – feelings of relaxation and well-being

Philippines	• Local government lead the urban forestry. New policy on CLUP integrates CCA (e.g. greenbelt, riverbanks, corridors) • It is overlapped concept under Social Forestry
Singapore	• Vision of making Singapore Our City in Nature. • Sustainable greenery where we live. • Nature parks are managed to simulate natural setting with species for ecosystem linking and planned succession of older trees with new saplings planted below them to maintain carbon sink. • Drone and satellite images are used to track green cover.
Thailand	• FAO: Urban and peri-urban forestry (UPF) can be defined as an integrated, interdisciplinary, participatory, and strategic approach to planning and managing tree resources in urban and peri-urban areas for their economic, environmental, and sociocultural benefits. • DNP Thailand: Urban Forestry: Plantation, Protection, Conservation and Maintenance trees and green areas of urban and suburban zones for improving ecosystem and economics and social benefit. • Urban Forestry are managed and implemented by Department of National Park, Wildlife and Plant Conservation (DNP), Royal Forest Department (RFD), Bangkok Metropolitan, Local Government agencies, Local people and Private Sector. • Thailand still does not have design and technologies for that, no coordination between agencies. • Arborists should be certified career and have more role pay in Thailand.
Timor-Leste	• "One man one tree" National Movement is done under President's instruction and guidance, including city areas (street trees) in Timor.
Viet Nam	• In Viet Nam, urban forests are identified as plantations along streets, in public parks, public areas like offices and schools, neighborhoods, etc. There is no project to adjust and design these forests to suit the seasonal weather, certain types of sites and for landscape, cultural and recreational purposes.

III. SUMMARY

- Urban forestry has been identified and implemented in several ways in members' countries as landscaping or beautification of the compound, road-side forest or ornamental plantation, gardens, squares, streets, parks, mini gardens, green line, and natural landscapes green space and playground for recreation, green campaign, etc.
- All member countries shared a common view that urban forestry can provide economic, environmental, sociocultural, recreation and health benefits.

5.5 LECTURE 5. FBCCA APPROACH 3: CLIMATE CHANGE DISASTER RISK MANAGEMENT

I. LECTURE STRUCTURE

A. Lecture Overview	This lecture introduces FBCCA practices in disaster risk management to encourage the trainees to brainstorm their country's strategies.
B. Learning Outcomes	At the end of this lecture, trainees will be able to: • Approach the disaster risk management schemes linking to the country's climate change adaptation policies. • Distinguish FBCCA-related disaster risk management; and, • Initiate developing its related strategies of the country.
C. Content	(1) Concept of disaster risk management under climate change adaption scheme (2) Strategies and measures (3) Case study (4) Challenges and opportunities

II. INTERVENTION OF MEMBER COUNTRIES

Live Poll Results

1. Do you think "Disaster Risk Management" in your country is up to the task?
   Answer 1: Yes, it is being widely considered at the national level. 82% (33) 82%
   Answer 2: No, still under discussion. (5) 12%
   Answer 3: Others (2) 5%
2. Do you think the adaptation process in your country can reach a resilience stage?
   Answer 1: Yes, our country's adaptation is quite well voyaging towards its resilience stage. (18) 45%
   Answer 2: No, we have just started our journey. (21) 52%
   Answer 3: Others (1) 2%
3. Do you think we need environmentalism or just conservation is good enough?
   Answer 1: Need environmentalism as well. (34) 85%
   Answer 2: Conservation itself is enough. (4) 10%
   Answer 3: Others (2) 5%
4. Does the climate change issue has been recognized by citizens in your country? Or, is your family's economy more important? If it is so, why is that?
   Answer 1: Yes, climate change issues are well aware among the public. (16) 40%
   Answer 2: Still, a family's economy is more important, and the level of understanding between environment and economy is different. (23) 58%
   Answer 3: Others (1) 2%
5. Do you think with the current technology we have, we can prevail this climate extreme and crisis we are facing?
   Answer 1: Yes (20) 50%
   Answer 2: No (9) 22%
   Answer 3: Others (11) 28%

III. SUMMARY

- Based on the live poll result on Climate Change Disaster Risk Management, it can be seen that most of member countries consider Disaster Risk Management at the national level.
- However, 52% of the participants responded that they have just started the adaptation process and currently cannot reach a resilience stage.
- 34 out of 40 participants stated that environmentalism is needed as well. Regarding the importance between the climate change and family's economy, 58 % mentioned that family's economy is more important in spite of understanding the environmental conservation and most of all believe in advanced technology for climate change crisis.
- 50% of the participants stated that the current technology can help to solve the climate extreme and crisis we are facing.

5.6 LECTURE 5. LECTURE 6. FBCCA APPROACH 4: COMMUNITY-BASED FIRE AND WATER MANAGEMENT

I. LECTURE STRUCTURE

A. Lecture Overview	This lecture introduces FBCCA practices in community-based fire and water management to encourage the trainees to brainstorm their country's strategies.
B. Learning Outcomes	At the end of this lecture, trainees will be able to: • Understand community-based fire and water management as part of FBCCA strategy. • Distinguish FBCCA-related community-based fire and water management; and, • Initiate developing its related strategies of the country.
C. Content	(1) Concept of community-based fire and water management (2) Strategies and measures (3) Case study (4) Challenges and opportunities

II. INTERVENTION OF MEMBER COUNTRIES

Live Poll Results

1. Do you have Community based Fire Management in your country?
   Answer 1: Yes we have (22) 55%
   Answer 2: No we do not have (14) 35%
   Answer 3: Others (4) 10%
2. Do you think the integration of fire and water community-based management will be better than just only fire itself?
   Answer 1: Yes, the integrative fire and water CBM is better for our country (36) 90%
   Answer 2: No, only fire CBM is appropriate and good enough. (4) 10%
   Answer 3: Others (0) 0%
3. Do you think a Land Manager is needed in your country?
   Answer 1: Yes, we need a land manager. (31) 78%
   Answer 2: No, we do not need it. (8) 20%
   Answer 3: Others (1) 2%
4. Do you think your country will overcome poverty?
   Answer 1: Yes (32) 80%
   Answer 2: No (7) 18%
   Answer 3: Others (1) 2%
5. Do you think indigenous knowledge and wisdom are important to study, learn and integrate with current knowledge or it is already enough?
   Answer 1: Yes, the local wisdom needs to be more explored. (38) 95%
   Answer 2: No, it is good enough. (1) 2%
   Answer 3: Others. (1) 2%

III. SUMMARY

- Most of the participants (55%) stated that they have community-based management in their countries.
- 90% of them agreed that the integrative fire and water CBM is better in practice.
- Almost 80% replied to facilitate the community base fire management, a land manager is needed, and their countries can overcome poverty.
- Moreover, 38 out of 40 participants revealed that the indigenous knowledge and wisdom are important and the local wisdom needs to be more explored.

5.7 LECTURE 7. NATIONAL STRATEGY AND IMPLEMENTATION TO FOREST-BASED CHANGE ADAPTATION

I. LECTURE STRUCTURE

A. Lecture Overview	This lecture introduces how the National Adaptation Plan including FBCCA strategies is developed and provides integrated/cross-sectoral approaches to develop the plan.
B. Learning Outcomes	At the end of this lecture, trainees will be able to: • View FBCCA in an integrated/cross-sectoral manner; and • Initiate developing National Adaptation Plan including FBCCA.
C. Content	(1) Concept of National Adaptation Plan and FBCCA (2) Strategies and measures (3) Case study (4) Challenges and opportunities

II. INTERVENTION OF MEMBER COUNTRIES

Live Poll Results

Do you think AFoCO needs to organize a regular training course to develop NAP, as one of the FBCCA-follow-up training?

Answer 1: Yes, I am willing to participate in the courses. (77.8%)
Answer 2: Well, we can explore other topics as follow-up courses of FBCCA. (22.2%)

III. INTERVENTION OF MEMBER COUNTRIES

Country	Status of NAP
Bhutan	• **Preparation stage:** Forest and Biodiversity is a priority sector for the NAP Readiness Project. And under this sector, we are currently undertaking climate risk assessment on Forest and Biodiversity.
Brunei	• Brunei Darussalam has not implemented any National Adaptation Plan at the moment
Cambodia	• **Preparation stage/NAPA:** Cambodia prepared the National Adaptation Programme of Action to Climate Change (NAPA) in 2006, by the National Council for Sustainable Development (NCSD) Chaired by the Minister of MoE
Kazakhstan	• **Preparation stage:** In the Republic of Kazakhstan, there is no approved methodology for calculating the absorption of carbon dioxide by wood species.
Indonesia	• **Approved:** According to Indonesia's Third National Communication (2017), Indonesia has developed National Action Plan for Climate Change Adaptation (RAN-API). Ministry of Environment and Forestry has also enacted regulation: Ministerial Decree No. P 33/ 2016 for the CCA guidance
Mongolia	• **Implementation stage after approval:** Currently in the implementation stage, led by the Ministry of Environment and Tourism
Myanmar	• **Preparation stage/NAPA:** Preparation of the National Adaptation Plan (NAP) was executed by Department of Meteorology and Hydrology, Ministry of Transport and Communication of Myanmar and coordinated by the National Environmental Conservation and Climate Change Central Committee (NECCCCC). and the NAP was adopted in 2013.

Philippines	• Preparation stage: The National Climate Change Adaptation Plan process in the Philippines is still ongoing and, with it, the National Climate Change Action Plan (NCCAP) serves as the National Adaptation Plan in the Philippines. The NCCAP was formulated outlining the country's agenda, specific programs and strategies for adaptation and mitigation for 2011 to 2028.The NCCAP addresses the challenges of climate change in the country.
Singapore	• Under the Singapore Green Plan 2030, national adaptation activities under the City in Nature pillar are conducted led by NParks (e.g. expanding parks area by 2026, 1 million trees plantation by 2030), 1000ha green space by 2035
Thailand	• Preparation stage: RFD appointed Committee on Climate Change on forest sectors to consider and implement follow climate change policy relate to forest sectors.
Timor-Leste	• Implementation stage after approval: The Democratic Republic of Timor-Leste (GoDRTL) officially launched its NAP process on 27 September 2019, building ongoing work on adaptation under the NAPA, assessment under the communications, and adaptation work in specific sectors
Viet Nam	• Implementation stage after approval: Led by MONRE. In this NAP, forestry is not a separated sector => it shares the spotlight with natural resources management, land-use changes, and most agriculture. The forestry sector's goal is to have higher local people's engagement in forest development through livelihood improvement.
Country	Country's context in NAP
Bhutan	• National Environment Commission Sector and Multi-sectoral technical committee on Climate change are organized and coordinating with other relevant stakeholders.
Brunei	• Brunei currently does not have NAP implemented. Currently all Brunei only have Adaptation and Resilience Working Group (ARWG) which comprise of all different departments/ agencies. The coordination will need to be further discussed in future if NAP is considered to be implemented.
Cambodia	• The NDC, NAP, NBSAP, NAPA etc, were developed by mainly so call environmentalist, but less engaging with forestry professional. All of those mostly focus on mitigation. It is needed to invest more in nature development, promote agro-forestry practices. There are limitations in preparing the NDC, NAPA, NAP, as its lead by those oriented in mitigation and also from foreign experts.
Kazakhstan	• N/A
Indonesia	• Indonesia NAP lead by Ministry of National Planning works within 4 main sectors: marine, water, agriculture, and health. However, Ministry of Environment and Forestry as focal point UNFCCC is responsible for the implementation reports.
Mongolia	• N/A
Myanmar	• Preparation of the National Adaptation Plan (NAP) was executed by Department of Meteorology and Hydrology, Ministry of Transport and Communication of Myanmar and coordinated by the National Environmental Conservation and Climate Change Central Committee (NECCCCC). • The international partner is United Nations Environmental Program (UNEP). • There are eight sectoral working groups including forestry sector under NAP. • Officials from Forest Department coordinated the preparation process as a member of forestry sectoral working group of NAP.

Philippines	• In the Philippines, the forestry sector is the main sector in the adaptation part of the country's Nationally Determined Contributions (NDC). During the GHG Inventory, the forestry sector yielded negative emissions, so it was considered as a sink (which, naturally it is). As for the National Climate Change Action Plan of the Philippines, the coordination is at the National Level, we have a Climate Change Commission under the Office of the President. The Commission is composed of various national government agencies, however, local governments are encouraged to develop the unique Local Climate Change Action Plans considering the peculiarities within the jurisdictions and the levels of readiness and cooperation. So far, all of the 17 climate vulnerable provinces in the Philippines have Local Climate Change Action Plans, and the Commission is monitoring the implementation of these plans, which are riddled with challenges.
Singapore	• Are there any discussions on verification of the various adaptation strategies?
Thailand	• Thailand's NDC focus on mitigation (not include forest sector) and adaptation is an option. Department of National Park, Wildlife and Plant Conservation (DNP) of Thailand is the Focal point of REDD+. FRA platform https://fra-data.fao.org/ (http://www.fao.org/documents/card/en/c/ca9825en)
Timor-Leste	• N/A
Viet Nam	• In Viet Nam, Ministry in charge of the NAP is MONRE (Ministry of Natural resources and Environment. Forestry is not a separated sector. NAP of Viet Nam is under authority of Ministry of Natural Resources and Environment (MONRE) with these following sectors: energy, IPPU (Industrial processes, product uses,) AFOLU (agriculture, forestry, other land use). These targeting area will be conducted and leaded by different ministries, which will then report to MONRE and UNFCCC. However, it is unclear how these supporting ministries and departments will inter-cooperate to reach different common goals. Forestry appears in 2 sub-sectors of agriculture (Decision from Prime Minister to launch NAP in 2020). It involves lots of works relating to forest protection and development, increase local participation in sustainable forestry development.

III. SUMMARY

- According to the participants' intervention, countries namely, the NAP of Bhutan, Cambodia, Kazakhstan, Myanmar, Philippines, Thailand are in preparation stage, Indonesia's NAP has been approved and three countries such as Mongolia, Timor-Leste, and Vietnam have reached implementing stage after approval.
- According to some countries such as Brunei, Thailand, Vietnam, the strong coordination among the relevant stakeholders under the implementing organizations would still be required for effective implementation of FBCCA activities.
- Currently, mitigation is more highlighted rather than adaptation and should encourage the strategies/ options such as Agroforestry as the nature based solution in the member countries.

5.8 LECTURE 8. CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT (SDGs) IN POST COVID-19 ERA: CHALLENGES AND OPPORTUNITIES

I. LECTURE STRUCTURE	
A. Lecture Overview	This lecture introduces SDGs and their relation to climate change adaptation with its challenges and opportunities, particularly in the post-COVID-19 era where all the New Normal arrangements are set. Particularly, this lecture draws on how FBCCA strategies would be developed to meet the essence of the SDG 13 "Climate Action".
B. Learning Outcomes	At the end of this lecture, trainees will be able to: • Understand climate change in the perspective of the SDGs; • Distinguish FBCCA's opportunities and challenges of the country to meet SDGs; and, • Initiate the development of FBCCA strategies linking to SDGs.
C. Content	(1) Concept of SDGs and climate change adaptation (2) Strategies and measures (3) FBCCA and SDG-13: Challenges and opportunities (4) Case study

II. INTERVENTION OF MEMBER COUNTRIES

Live Poll Results

Q1. (Post-pandemic) When will the COVID-19 pandemic end in your country with the gradual normalization of social and economic life?

1. December 2021
2. Jun 2022
3. December 2022

Q2. (Carbon Neutrality) Do you think global Carbon Neutrality (CO_2 ↑ = CO_2 ↓) will be possible by 2050?

1. Yes
2. No

Q3. (UN Sustainable Development Goals) What do you think is the highest priority SDG for a sustainable world in the framework of 17 SDG goals?

1. SDG 1 "No poverty" (6 voted)
2. SDG 3 "Good health and well-being" (4 voted)
3. SDG 8 "Decent work and economic growth" (4 voted)
4. SDG 13 "Climate action" (7 voted)

Q4. (Sustainable Forest Management - SFM challenge) What do you think is the current most critical challenge of sustainable forest management in your country?

1. Lack of land-use planning and issue of land tenures (4) (MN, BN, PH, PH) 22.22%
2. Low economic returns / lack of competitiveness to agriculture corps (6) (BN, TH, KH, TL, BT, ID) 33.33%
3. Weak government policies and public budget resources (2) (PH, PH) 11.11%
4. Lack of public understanding and support (6) (ID, ID, SG, TL, ID, MN) 33.33%

Q5. Do you think indigenous knowledge and wisdom are important to study, learn and integrate with current knowledge or it is already enough?

1. Conservation (9) (ID (2), MM, TH, MN, BT, BN, TL, SG) 28.12%
2. Timber (0)
3. Non-timber forest products (8) (ID (4), MM, TH, BN, KH) 25%
4. Environmental services (carbon, water, eco-tourism etc.,) (15) (ID (5), TH (2), MN, BT, BN, KH (2), PH (3)) 46.88%

Q6 (Restoration challenge) What do you think is the most difficult challenge to promote forest restoration in your country?

1. Silviculture knowledge and practices (2) (MN, BN) 9.52%
2. Weak policies and regulations for plantations and harvesting (10) (ID (4), KH, TL (2), PH (2), TH) 47.61%
3. Financing support (6) (TH, MM, KH, ID, MN, BN) 28.58%
4. Limited market development (3) (PH, ID, KH) 14.29%

Q7 (Restoration campaign) What do you think is the most attractive public campaign for forest restoration in your country?

1. Nature-based solution (12) (TL, ID (4), KH (2), MM, BN, MN, PH (2))
2. Forest landscape restoration (e.g., The Bonn Challenge) (7) (TL, TH, PH (2), BT, MM, MN)
3. Ecosystem restoration (e.g., The UN Decade for Ecosystem Restoration) (3) (TL, TH, SG)
4. Keeping global warming within 1.5 °C (Targeting 1.5°C) (1) (BN)

III. SUMMARY

- Almost all the member countries agree that sustainable forest management (SFM) as one of the efficient strategies to cope with the Climate Change adaptation. In this regard, about 33% out of all member countries stated that lack of public awareness and supports is challenging effective implementation of SFM as well as low competitiveness of managing forest resources to the agricultural crops is another challenge to reach SFM. 22.22% mentioned that lack of land use planning and land tenure as another challenging issue facing in their countries for SFM.
- Forest restoration is also another adaptation option of Climate Change to be promoted. However, 47.61% out of the member countries mentioned that weak policies and regulations for plantations and harvesting as the most difficult challenge for forest restoration and it was followed by lack of/ unsustainable financing support stated by 28.58%. 14.29% identified that limited market development as another challenge for promoting forest restoration.
- According to the respondents of the member countries, nature-based solution (52.17%) had been identified as the most attractive campaign to promote forest restoration in their countries. 13.04% and 8.70% stated that ecosystem restoration and forest landscape restoration as the second and third most attractive ways for boosting restoration campaign respectively.

5.9 LECTURE 9. FBCCA APPROACH 5: ECOLOGICAL RESILIENCE AND ECOSYSTEM/ LANDSCAPE-BASED ADAPTATION

I. LECTURE STRUCTURE

A. Lecture Overview	This lecture introduces FBCCA practices in the ecosystem/landscape-based adaptation mechanism to encourage the trainees to brainstorm their country's strategies.
B. Learning Outcomes	At the end of this lecture, trainees will be able to: • Understand the concept of ecosystem/landscape-based adaptation; and • Initiate developing its related strategies of the country.
C. Content	(1) Concept of ecosystem/landscape-based adaptation (2) Strategies and measures (3) Case study (4) Challenges and opportunities

II. INTERVENTION OF MEMBER COUNTRIES

A. Eco-based Adaptation Activities in Each Country

Country	Eco-based Adaptation
Bhutan	• Development is highly dependent on climate-sensitive sectors such as agriculture, hydropower, and forestry. • Climate change adaptation and mitigation is not streamlined across all sectors. • Knowledge on climate change is very limited at grass root level.
Brunei	• Tree planting activities in planting 500,000 new trees by 2035 are supporting to Brunei Darussalam National Climate Change Policy (BNCCP) and Green Protocol. • Blue Carbon Initiatives (BCI) in mangrove and beach tree planting has been initiated in supporting Strategy 2: forest cover and Strategy 8: Climate Resilience & adaptation of Brunei Darussalam National Climate Change Policy (BNCCP).
Cambodia	• There are key activities to contribute Eco-based Adaptation such as watershed Management Planning for Prek Thnot Watershed, conserving Rosewood genetic diversity for resilient livelihoods in the Mekong, integrated farming techniques to maintain soil fertility and conserve water (agroforestry system, planting drought-resilient crops, rehabilitation of the irrigation system, and home-gardening).
Kazakhstan	• The main work of ecosystem restoration is the planting of forests. The Republic of Kazakhstan annually carries out work on the reproduction of forests on an area of about 65 thousand hectares. • In the Republic of Kazakhstan, a green zone is being created around the capital to create a forest ecosystem. • Within the framework of the project "Preservation of forests and increasing the forest cover of the territory of the republic", financed by a loan from the World Bank, a grant from the GEF and the republican budget in the period from 2007 to 2015, on the drained bottom of the Aral Sea (ODAM), afforestation was carried out on an area of 61 thousand hectares (52 thousand hectares are planted and 9 thousand hectares are sowing saxaul). • Since 2017, together with the Korea Forest Service-KFS, the project "Phyto-forestry reclamation of the drained bottom of the Aral Sea in the Kyzylorda region" has been implemented. In order to implement this project, a working project was developed "Creation of plantings on the drained bottom of the Aral Sea on an area of 30 thousand hectares." • In the period from 2018 to 2020, plantings of black saxaul have already been created on the territory of the Aral State University for the Protection of Forests and Wildlife in the Kyzylorda region on an area of 13 thousand hectares.

Indonesia	• From the period of 2015-2019, Indonesia has rehabilitated 1.2 million hectares of degraded forest areas. • To improve seedling quality for forest rehabilitation, Indonesia has established 54 permanent nurseries and 1000 local nurseries per year. • Deforestation rate in Indonesia is 0.44 mha per year in 2017-18 • The government has enacted a regulation: Presidential Instruction No. 5/ 2019 to prevent primary and peat swamp forest conversion. However, there are still 5.2 mha of secondary forest which need to be protected from conversion as well. Q1: The community near to the forest still depend on the forest as their source of their livelihood. Q2: Oil palm plantation and also other agricultural activities are expanding.
Mongolia	• Currently there is the Ensuring Sustainability and Resilience (ENSURE) of Green Landscapes in Mongolia project implemented by the MET • Programme on Scaling up Climate Ambition on Land Use and Agriculture through Nationally Determined Contributions and National Adaptation Plans – Regional and Improving Adaptive Capacity and Risk Management of Rural Communities in Mongolia are conducting to accelerate Eco-based Adaptation.
Myanmar	• Myanmar Reforestation and Rehabilitation Programme (MRRP) (2017-2018 to 2026-2017) is implementing to restore the ecosystem as the biodiversity rich natural forests, to mitigate Climate Change, to contribute the Sustainable Forest Management. • Re-establishing Natural Habitats Programme (RNH) (2019-2020 to 2028-2029) is carrying out with the objectives of contribution of the protected areas management, restoration of the ecosystem for sustainable ecosystem services as well as mitigation and adaptation with CC and raising the public participation in ecosystem and wildlife conservation. • 37 projects for biodiversity conservation, community forestry development, mangrove restoration, integrated watershed management, sustainable forest management and other sectors are currently implementing 1st Q: poverty, limited livelihood options, weak law enforcement, poor coordination among the relevant govt. departments/ ministries is the limitation to Eco-based Adaption activities. 2nd Q: Conserving existing forests (30% of the total country area by 2030 for reserved and protected public forest & 10% for protected areas); reforestation program, CF, Agroforestry is current actions to adaptation.
Philippines	• Land Use Planning, Sustainable Integrated Area Development Strategy, Climate Change Cluster on Adaptation and Mitigation – Disaster Risk Reduction Agenda, Protected Area Management, National Adaptation Plan Process are implementing. • In the Philippines, 30% of the population still live in the uplands. They are still highly dependent on forest resources which gives great strain to conservation and even protection. • We have developed the Community-Based Forest Management Program since 1995, but we have yet to realize the desired outcomes to the fullest, since based on the 2015 land cover of the Philippines, the highest rate of deforestation occurred in forests with high concentrations of communities and/or community services/activities.
Thailand	• Thailand has formulated the Climate Change Master Plan 2015-2050 as a policy framework for long-term planning for addressing climate change • It consists of 3 elements including climate change mitigation, adaptation and capacity building. • In the forest context, RFD has effort toward to sustainable forest management. It emphasizes on increasing forest areas by all stakeholders participations. Although RFD missions involve directly on mitigation, there are many implementations relate to Ecosystem Restoration or Landscape-based Adaptation as follows;

	• Regulatory framework for sustainable natural resources management • Promote community participation in the preservation and conservation of natural resources, ecosystems, and biodiversity • Development warning system to reduce risk and disaster • Enhance knowledge and awareness to people. • Promote forest economic and utilization • Develop biodiversity database to monitor and evaluate biological indicators
Timor-Leste	• Lack of laws and regulations, lack of human resource, lack of community awareness are the challenges in the ways to Eco-based Adaptation.
Viet Nam	• The most significant projects related to Eco-based Adaptation are; (1) Project 327-CT since 1992 (covering bare lands and mountains); (2) Project 661 in 2020 (planting 5 million ha of forest); and, (3) Target program 886 on Sustainable Forest Development 2016-2020.

III. SUMMARY

The following ecosystem-based adaptation activities has been carrying out in the member countries;

- Tree planting/ reforestation initiatives
- Conserve/ protect the existing forest genetic resources
- Watershed management
- Sustainable forest management
- Integrated farming techniques
- Community based forest management
- Agroforestry
- Biodiversity conservation
- Risk and disaster management

Some member countries proposed the challenges encountered for the ecosystem-based adaptation as follows;

- Weak law enforcement/ lack of regulations
- Low/ lack of community awareness
- Limited human and financial sources
- Highly dependence on forest resources and deforestation
- Weak coordination amongst the related organizations
- Agricultural expansion

5.10 LECTURE 10. FBCCA APPROACH 6: LINKING AGROFORESTRY: A NATION-BASED SOLUTION TO CLIMATE CHANGE ADAPTATION

I. LECTURE STRUCTURE	
A. Lecture Overview	This lecture introduces FBCCA practices in agroforestry to encourage the trainees to brainstorm their strategies for the country as one of the nature-based solutions to climate change adaptation.
B. Learning Outcomes	At the end of this lecture, trainees will be able to: • Approach agroforestry schemes linking to the country's climate change adaptation policies; • Distinguish FBCCA-related agroforestry; and, • Initiate developing its related strategies of the country.
C. Content	(1) Concept of agroforestry the perspective of FBCCA (2) Strategies and measures (3) Case study (4) Challenges and opportunities

6. ACTION PLANS OF PARTICIPATING COUNTRIES

6.1 BHUTAN

Item	Details
Implementing Organization	• Name : Department of Forests and Park Services • Nature or type : Government Organization • Major functions/duties : Sustainable management of forest
Project Duration	2022 – 2023
Est. Budget	USD$ 0.670m
Main Objectives	To manage forest through community participation
Benefactors	8 fire prone districts
Potential environmental and social risk	Land degradation and reduce agriculture productivity
Project Details	• Forest fire tools including occupational safety equipment and basic firefighting equipment for Fire Fighting volunteers: USD 165000 • Capacity building of communities, fire fighting volunteers, first responders & managers on prevention and management of forest fire: USD 116000 • Institutionalization of community level forest fire management in the fire prone districts: USD 13600 • Preparation of national fire management strategy as a guidance document and preparation of fire management plan for 10 fire prone designated districts: USD 27600 • Formation of forest fire volunteers in the 8 fire prone designated districts :USD 6400 • Awareness & advocacy campaign especially through media and sensitization workshop to the communities and fire fighting volunteers on prevention and management of forest fire: USD $22,200 • Purchase 4 numbers of fire fighting vehicles to respond to forest fire especially in the fire prone districts: USD $320,000 • Ex-gratia payment to farmers: USD $10,000

6.2 BRUNEI DARUSSALAM

Item	Details
Implementing Organization	• Name : Ministry of Primary Resources and Tourism and Ministry of Development • Nature or type : Government • Major functions/duties : To oversee the effectiveness and proper implementation of Nature Based Solution and to engage all relevant stakeholders to participate and support the practice.
Project Duration	2022 - 2027
Est. Budget	USD$ 5 million
Main Objectives	To integrate Nature Based Solutions (i.e. Agroforestry Practices) in any land-use planning and development activities in strengthening climate resilience and adaptation in Brunei Darussalam by using early warning system
Benefactors	Community, Fisheries, Agriculture, Forestry, disaster management, development sectors, and economy
Potential environmental and social risk	• Environmental risk: Climate related impacts such as flood, forest fire, landslides and sea level rise or worse, prolonged drought. • Social risk: Economy and Society- Most of the economical activities and community are located along the coastline
Project Details	This project aims to address the impacts of current and future climate change on Brunei's natural resources and livelihood through the use of Nature Based Solutions to address these components: (1) Better land-use planning (2) Better integration of relevant stakeholders in policy making and regulatory framework (3) Community based approach; to include indigenous knowledge in project implementation and policy making (4) Strengthen climate resilience and adaptation (5) Strengthening existing technical expertise with green engineering The project will be conducted in selected sites in the country through a comprehensive and thorough selection and site visits to assess the social and environmental conditions (including Brunei's Master Plan). The selection criteria will include vulnerability level of local communities to climate change, presence and state of degradation in the area, number of potential benefactors from the project.

6.3 CAMBODIA

Item	Details
Implementing Organization	• Name : Forestry Administration • Nature or type : Government Institution
Project Duration	2025 – 2029
Est. Budget	US$ 1,000,000
Main Objectives	To enhance the climate change adaptation of forest-dependent communities (Community Forestry) through reforestation/forest restoration and sustainable agricultural practice
Benefactors	Two forest-dependent communities in Takeo and Kampong Thom provinces (1,000 families).
Potential environmental and social risk	• N/A
Project Details	Assisting subsistent farmers adapting to climate change through forest landscape restoration and Eco agriculture. Land degradation, forest degradation and the erratic rainfall, which leads to droughts and floods, are decreasing agricultural productivity and forest-based income. Some of the most vulnerable communities are rural communities, whose livelihood is dependent on ecosystem services and subsistence agriculture. As a result of the climate change impacts to the subsistence agriculture, these communities are increasingly reliant on the degraded forests to provide food source and income. Two approaches: I. degraded forests will be restored at a landscape-level, by planting indigenous tree species that provide food, diverse NTFPs and a range of ecosystem services such as erosion control, improvement of soil fertility and creating fish habitats II. interventions include planting multipurpose tree species along rice paddy boundaries and other cultivated areas, establishing demonstration plots of soil and water conservation and diversifying existing agricultural areas by introducing eco agriculture practices. (1) Planning for eco agriculture and restoration interventions. (2) Concrete actions of eco agriculture and restoration interventions. (3) Capacity building, awareness raising and promoting the impacts.

6.4 KAZAKHSTAN

Item	Details
Implementing Organization	• Name: Ministry of Ecology, Geology and Natural Resources
Project Duration	2021 – 2025
Est. Budget	-
Main Objectives	To achieve by 2025 the area of protected areas with the status of a legal entity 3.3% and to reach by 2025 the forest cover of the country 5%
Benefactors	Republican and local budgets, Donor funds
Potential environmental and social risk	There are no environmental risks, social risk is a possible reduction of grazing and agricultural land
Project Details	The project is aimed at Integrated management of natural ecosystems in accordance with the principles of sustainable development in order to increase their importance and economic potential

6.5 INDONESIA

Item	Details
Implementing Organization	• Name : Ministry of Environment and Forestry • Nature or type : Government institution • Major functions/duties : execute government affairs in Environment and Forestry Sectors
Project Duration	2022 – 2026
Est. Budget	• USD$ 15 million: Pre Investment • USD $ 75 million: Result Based Payment/Performance based (USD $ 5/ton) in 2023 - 2027
Main Objectives	Reduce emission from deforestation and degradation: 15 Mton C02 eq (2023 – 2027)
Benefactors	Sub National (Province/Sub Province), Local Communities/Customary Society, NGOs, universities, etc
Potential environmental and social risk	• Environmental: Forest Fire • Social Risk: Political issues, lack of understanding stakeholders related climate change
Project Details	The program to reduce deforestation and forest degradation in an area that includes forested areas (forest cover in other use areas) and peatlands, as well as increasing the number of significant biodiversity as globally (including endangered species such as tigers, elephants, and orangutans) and supports many indigenous peoples/ customary communities and other forest communities based on sub national level (Province). This program will tackle deforestation by addressing the underlying governance issues through policy reforms, involving relevant stakeholders, especially palm oil companies, forestry companies and involving local communities

6.6 MONGOLIA

Item	Details

Implementing Organization	• Name : Ministry of Environment and Tourism
	• Nature or type : State administrative organization for environmental protection
	• Major duties: Protection, restoration and use of natural resources and biodiversity
	• Major functions:
	  • Develop cooperation in the field of environmental protection, promotion of green development and tourism development.
	  • Carry out activities aimed at studying the state of the environment, evolutionary trends, and maintaining ecosystem balance.

Project Duration	June/2022 – August/2027
Est. Budget	MNT 6 billion (USD 2.1 million)
Main Objectives	Strengthen Mongolia's forest sector to promote the sustainable management, utilization and protection of forests in a strategic manner in order to reduce deforestation and forest degradation and to contribute to Mongolia's green and climate-adapted development.
Benefactors	Green Climate Fund, United Nations Food and Agriculture Organization, Ministry of Environment and Tourism, local and capital city environment department
Potential environmental and social risk	• Social: risks related to corruption, favoritism and mismanagement; lack of participation by local people • Environmental: Controlled fires for reducing fire risk/impacts may get out of control, or firesetting be displaced to other areas, e.g. where there is lack of awareness or less patrolling. • Improved pest control may affect ecological balance; unclear risk to wildlife from mechanical collection and biocontrol methods.
Project Details	This strategic area focuses on reducing emissions from forest fires, insect pests, and illegal logging as these are identified to be the three most critical drivers of deforestation and forest degradation in Mongolia. The approach is to directly tackle these drivers through increased prevention, monitoring and response capacity in both technical and technological terms.

6.7 MYANMAR

Item	Details
Implementing Organization	• Name : Forest Department • Nature or type : Government Institution • Major functions/duties : Sustainable Forest Management, Biodiversity Conservation, Capacity Building, Implementing development project, etc.,
Project Duration	01.10.2022 - 01.09.2025
Est. Budget	USD$ 500,000
Main Objectives	• To contribute the restoration of the mangrove ecosystem through reforestation and rehabilitation via community-based approach • To support the livelihood improvement of the local communities • To develop the capacity and raise the awareness of local communities and Forest Department staffs through the technical workshops and trainings
Benefactors	Local Communities, Forest Department, other direct and indirect stakeholders
Potential environmental and social risk	• Land tenure problem • Low engagement of local communities in project implementation • Political situation • Cultural problems
Project Details	• Project areas (Climate vulnerable areas) will be selected based on the literatures review and on ground pilot survey • Preferable and site-matched mangrove spp. for reforestation and rehabilitation through the consultations among the local communities, township FD staffs, and local NGOs/ CSOs will be distributed in the project areas. • Socio-economic survey and assessment of livelihood activities will be carried out. After that, the best option for their livelihood improvement will be assessed and developed the technical. (like agroforestry/ silvopastoral system/ others) • Workshops and technical trainings will be organized for the livelihood supported activities for local communities • Capacity building trainings (about CF/ Agroforestry/ NAPA) for the forestry staffs will be organized.

6.8 PHILIPPINES

Item	Details
Implementing Organization	• Name : Department of Environment and Natural Resources • Nature or type : Government Agency • Major functions/duties : The DENR is the executive department of the Philippine government responsible for governing and supervising the exploration, development, utilization, and conservation of the country's natural resources.
Project Duration	2022 – 2026
Est. Budget	USD$ 1,000,000
Main Objectives	• Develop a business model for community-based forest management focusing on carbon stock enhancement and carbon credits generation. • Introduce a new investment option in the forestry sector for investors (domestic & international) to participate in. • Mainstream public-private-community partnership in the Philippines' carbon management.
Benefactors	• Forest-dependent communities • Corporations within and outside the Philippines required to offset carbon dioxide emissions
Potential environmental and social risk	• Developing a business model and investment opportunity around carbon stock enhancement may encourage increased upland migration. • The communities must be protected from being dummies of corporations engaging in the investments.
Project Details	The carbon market in the Philippines is yet to be developed and the government eyes the forest lands managed by communities as adequate sites to introduce the business model. With existing management frameworks and actual managers in the area, enhancing the carbon stocks in community-managed areas is feasible, however, the acceptance of the communities that "forest protection" is a business model in itself must be established and cultivated.

6.9 SINGAPORE

Item	Details
Implementing Organization	N/A
Project Duration	10 years
Est. Budget	Cost only comes from procuring the plants, manpower needs are fulfilled by the community
Main Objectives	Fulfill vision of City in Nature; increase community awareness on forest-related matters
Benefactors	Nation: forest-based
Potential environmental and social risk	N/A
Project Details	• Seed collection (transfer to seed bank and nurseries) during masting season • Site preparation (e.g weeding, soil amelioration) • Planning on manpower needs (engaging community) followed by planting • Maintenance (might include weeding) • Tree-inspection (tree health) - perpetual

6.10 THAILAND

Item	Details
Implementing Organization	• Community Forest Management Office, Royal Forest Department, Thailand
Project Duration	2022 – 2025
Est. Budget	USD$800,000
Main Objectives	• Enhance local community capacity in forest fire control, prevention, and suppression though capacity building and raising awareness programs. • Develop integrated community-based forest fire management system
Benefactors	• Direct Beneficiaries: Local Administration Organization and Local Community and individual household • Indirect Beneficiaries: Government and private sector
Potential environmental and social risk	• Lack of capacity and coordination skills to manage forest fire challenges • Limitation to acquire appropriate technology • Forest fires incidents
Project Details	• The local community will receive the capacity building in order to gain knowledge and better understanding fire composition and behavior for forest fire control, prevention, and suppression. • The suitable technologies will be introduced with the adaptation these technologies to the local context including fuel management, community-based forest fire network and system. Awareness activities and people participation will help in strengthening and enhance the forest fire management.

6.11 TIMOR-LESTE

Item	Details
Implementing Organization	• Community Base Natural Resource Management Target Sucos and Tme Frame of the Action Plan
Project Duration	2022 - 2025
Est. Budget	2,100.000(USD$)
Main Objectives	• PLUP • Micro program lmplementaion • Government capacity enhancement
Benefactors	N/A
Potential environmental and social risk	N/A
Project Details	• Participatory landuse planning • Training on sloping and sustainable farming, reforestation, coffee rehabilitation and livelihood development • Follow-up monitoring meetings at suco and Aldeia level

6.12 VIET NAM

Item	Details
Implementing Organization	• Name : MONRE and MARD • Nature or type : Ministries • Major functions/duties : administration and management
Project Duration	2021 - 2026
Est. Budget	USD$375,000
Main Objectives	• Construct a model stakeholders' forum that ensure the transparency, equity, and fairness to all • Raise the local capacity to self-maintain and self-protect
Benefactors	Local social-ecological system
Potential environmental and social risk	• Sudden disruption on local environment • Change in interactions and connections among communities and classes
Project Details	Goal: Increase the efficiency of profit sharing • In each level of governance, there will be the participation of representatives of different communities (that shall be affected/receive benefits from the implementation of the project); • Project design should be the sole priority, in each sector, if there is issue with inter-disciplinary, governmental departments should cooperate as equal members; • In the first project cycle, the representatives from these communities shall be assisted, by experts and other independent parties; • Gradually after that, these assistance shall be reduced till there are only representatives of all communities and the government. Then, the voting weight will be relatively similar.

7. SURVEY RESULTS

After completing all sessions of the training, the participants filled out the questionnaire composed of the organization and preparation of the training course, subjects, training design, comparisons with other training courses, and opinions for the training course.

7.1 Organization and Preparation

Based on the results of the questionnaire **(Table 1),** 58.3% of the participants strongly agreed that the organization of the course was appropriate, and 41.7% of them agreed to the same survey item. 45.8% of the participants strongly agreed that they were well-informed and kept updated before the training course, while 50% of them agreed to the same statement. With regard to satisfaction with the pre-arrangement of the organization, 45.8% of the participants strongly agreed and 45.8% of them agreed to the same statement.

Table 3. Organization and Preparation

Questions	Percentage (%)	
	Strongly Agree	Agree
• The organization of the course was appropriate	58.3	41.7
• I was well informed and kept updated before the training course	45.8	50.0
• I was satisfied with the pre-arrangement of the organization	45.8	45.8

7.2 Educational Environment

Based on the results of the questionnaire **(Table 2),** 41.7% of the participants very satisfied that the Zoom setting, and 45.8% of them Satisfied to the same statement. 66.7% of the participants very satisfied that the hospitality of the RETC staff, and 29.2% of them satisfied to the same statement.

Table 4. Educational Environment

Questions	Percentage (%)	
	Very Satisfied	Satisfied
• Zoom Setting	41.7	45.8
• Hospitality of the RETC staff	66.7	29.2

7.3 Training Design

Relative to other training courses taken by the participants **(Table 3)**, 95.8% of the participant answered the overall quality of this training course was "high or much higher," followed by 4.2% who said it was "similar." 83.3% of the participants said that the level of intellectual challenge presented and the level of involvement/participation in this course was "high or much higher," followed by 16.7% who said it was "similar." 87.5% of the participants said that the number of effort participants put into this course was "high or much higher," followed by 12.5% who said it was "similar." Finally, 95.8% of the participant answered the amount of knowledge/information gained through this course was "high or much higher," followed by 4.2% who said it was "similar."

Table 5. Relative to other training courses taken by the participants

Questions	Frequency (%)		
	Much higher	High	Similar
• The overall quality of this training course	33.3	58.3	8.3
• The level of intellectual challenge presented	20.8	54.2	25
• The amount of effort participants put into this course	20.8	66.7	12.5
• The level of involvement/participation in this course	20.8	54.2	25
• The amount of knowledge/information gained through this course	33.3	58.3	8.3

7.4 Lecturer Evaluation

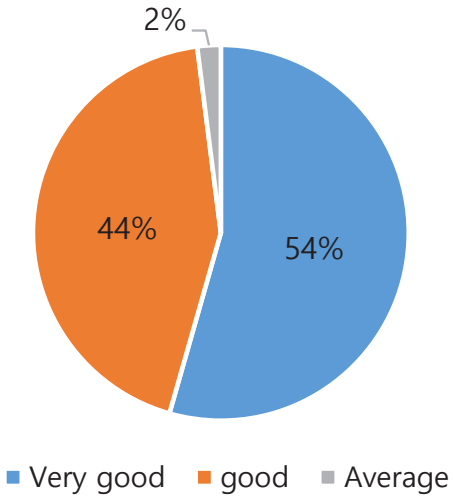
I. LECTURE Evaluation Elements

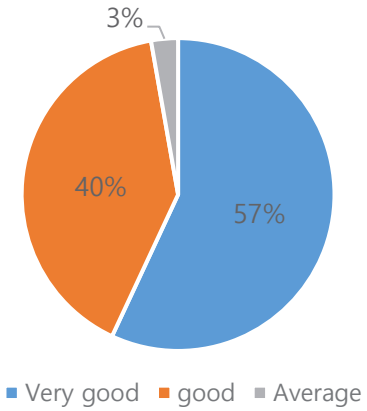
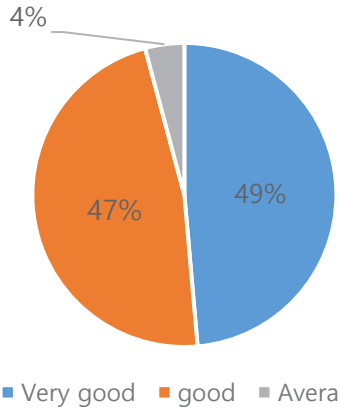
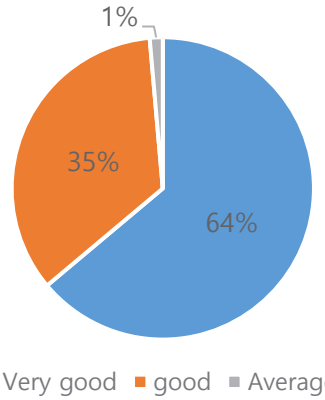
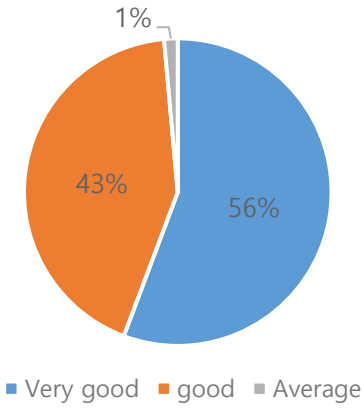
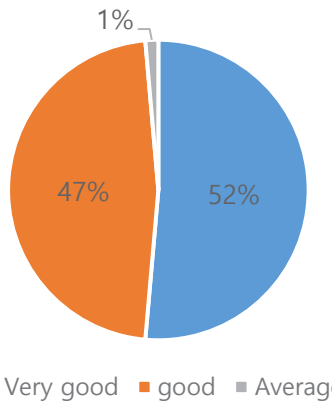
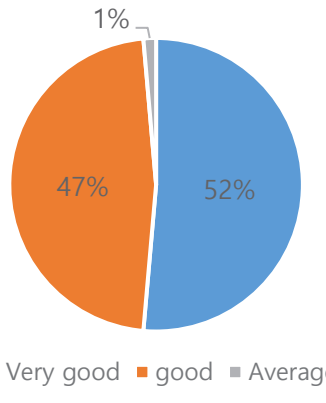
A. Helpful for work and self- improvement
B. Professionalism of Lecturer
C. Performance and attitude of Lecturer

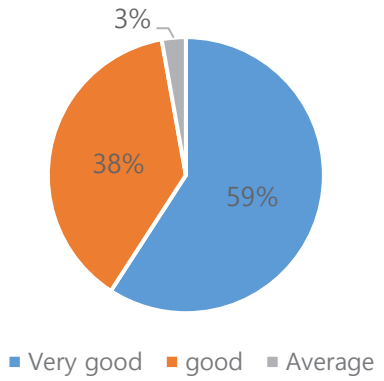
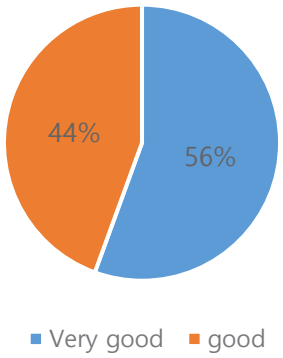
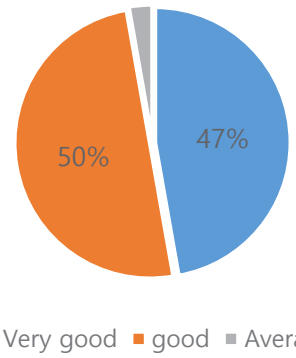
II. LECTURERS LIST

No.	Lecturer Name	Lecture
1	**Park Joowon** Program officer, Strategy and Outreach Team, AFoCO Secretariat	Introduction to Forest-based Climate Change Adaptation
2	**Suree Lakanavichian,** Head, Department of Highland Agriculture and Natural Resources, Faculty of Agriculture, Chiang Mai University Executive Director of Forest and People Research Center, Chiang Mai University	FBCCA and REDD+
3	**Hassan Ibrahim,** Deputy Director, International Biodiversity Conservation, National Parks Board, Singapore AFoCO Focal Official	FBCCA Approach 1: Biodiversity Conservation and Climate Resilient Genetic Resource Management
4		FBCCA Approach 2: Climate Resilient Urban Forestry and Innovative Technologies
5	**Veerachai Tanpipat** A Senior Expert of Faculty of Forestry, Kasetsart University An Advisor to Director General of Pollution Control Department A Chairperson of Asia Pacific Advanced Network's (APAN) Open and Sharing Data WG Forest Fire Management Training Instructor of AFoCO RETC	FBCCA Approach 3: Climate Change and Disaster Risk Management
6		FBCCA Approach 4: Community-Based Fire and Water Management
7	**Alexandre Meybeck** Senior Technical Advisor, CGIAR Research program on Forests, Trees and Agroforestry (FTA), Center for International Forestry Research Co-Author of "Addressing Forestry and Agroforestry in National Adaptation Plans (2020)"	National Strategy and Implementation to Forest-based Climate Change Adaptation
8	**Ma Hwan-Ok** Projects Manager International Tropical Timber Organization (ITTO) An expert in forest-based climate change mitigation adaptation and biodiversity conservation in production forests in tropical countries	Climate Change and Sustainable Development Goals (SDGs) in Post COVID-19 Era: Challenges and Opportunities
9	**SureeLakanavichian**	FBCCA Approach 5: Ecological Resilience and Ecosystem/ landscape-based adaptation
10	**Rodel Lasco** Executive Director, Oscar M. Lopez Center, Philippines 2007 co-winner of the Nobel Peace Prize, as well as a member of the National Academy of Science and Technology in the Philippines. Philippines Coordinator of the ICRAF Affiliate professor at the University of the Philippines Los Baños	FBCCA Approach 6: Linking Agroforestry: A Nation-based Solution to Climate Change Adaptation

III. TOTAL RESULT



LECTURE 1. INTRODUCTION TO FOREST-BASED CLIMATE CHANGE ADAPTATION	LECTURE 2. FBCCA AND REDD+	LECTURE 3. FBCCA APPROACH 1: BIODIVERSITY CONSERVATION AND CLIMATE RESILIENT GENETIC RESOURCE MANAGEMENT
		
LECTURE 4. FBCCA APPROACH 2: CLIMATE RESILIENT URBAN FORESTRY AND INNOVATIVE TECHNOLOGIES	**LECTURE 5. FBCCA APPROACH 3: CLIMATE CHANGE DISASTER RISK MANAGEMENT**	**LECTURE 6. FBCCA APPROACH 4: COMMUNITY-BASED FIRE AND WATER MANAGEMENT**
		

LECTURE 7. NATIONAL STRATEGY AND IMPLEMENTATION TO FOREST-BASED CHANGE ADAPTATION	LECTURE 8. CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT (SDGs) IN POST COVID-19 ERA: CHALLENGES AND OPPORTUNITIES	LECTURE 9. FBCCA APPROACH 5: ECOLOGICAL RESILIENCE AND ECOSYSTEM/LANDSCAPE-BASED ADAPTATION
		

8. RECOMMENDATIONS FROM PARTICIPANTS

Next training may be operated considering...:

- Specific in-depth approaches in a practical manner, rather than general knowledge
- More interventions in interactive environment
- Group discussions with mixed countries
- More diversified online training tools
- Cross-visit to learn climate technologies
- Materials shared before the sessions

Next training topics on FBCCA may include...

- Global trends and issues, and national policies
- Sharing best cross-cutting practices related adaption and mitigation actions
- Formulation and development of NAPs
- More agroforestry related concepts under nature-based solutions and strengthening climate resilience
- Urban forestry and innovative technologies on CCA
- Community-based fire and water management
- Establishment of carbon markets
- Non-forest timber products
- Ecotourism
- Best practices of the ROK

9. COMMENTS FROM LECTURERS

Name	Position/Affiliations	Proposed Partnership with AFoCO
Suree. Lakanavichian	Professor& Executive Director/ Department of Highland Agriculture and Natural Resources, Faculty of Agriculture, Chiang Mai University	1. To collaborate with AFoCO as a trainer 2. The collaboration of the affiliated organization associated with the Principles of the SFM with AFoCO. 3. To apply the experience of FSC program as a participator in future projects of AFoCO.
Alexandre Meybeck	Senior Technical Advisor/ CGIAR Research Program on Forests, Trees and Agroforestry, CIFOR	1. To use an experience of programs of the NAPs as the worker at AFoCO 2. To contribute future training on the vulnerability of forests and forest dependent people.
Rodel D. Lasco	Executive Director/ Oscar M. Lopez Center, Philippines	1. Proposed partnership about agroforestry activities with AFoCO

10. LIST OF PARTICIPANTS

NO.	COUNTRY	NAME	POSITION	AFFILIATIOIN
1	BHUTAN	Ugyen Tshering	Chief Forestry Officer	Department of Forests and Park Services, Bhutan
2		Lekey Chaida	Sr. Forest Officer	
3	BRUNEI	Miza Farzana Ghani	Forestry Officer	N/A
4		Pg Siti Roslina binti Pg Hj Abd Hamid	Engineer	Brunei Climate Change Secretariat, Ministry of Development
5	CAMBODIA	So Thea	Deputy Director	Forest and Wildlife Research-Development Institute, FA
6		Thi Sothearen	Deputy Chief	Wildlife and Biodiversity Protection Office, Forest and Wildlife Research-Development Institute, FA
7	INDONESIA	Ardiyanto Wahyu Nugroho	Researcher	Research and Development Institution on Natural Resource Conservation Technology, FOERDIA, Ministry of Environment and Forestry
8		Aditya Perdana Putra, M.Sc	Head of Subdivision on REDD+ Governance	Directorate of Climate Change Mitigation, Directorate General of Climate Change, Ministry of Environment and Forestry
9		Ike Mediawati	Researcher	Research and Development Institution on Natural Resource Conservation Technology, Ministry of Environment and Forestry
10		Sri Lestari		The Center of Forest R&D, FOERDIA
11		Mira Yulianti		
12		Retno Agustarini		
13		Bondan Winarno, S. Hut. MT. MMG		
14		Ryke Nandini		NTFPs Technology Research and Development Institute, FOERDIA
15	KAZAKHSTAN	Abzal Baltabayev	Head	Forestry Development Department of the Forestry and Wildlife Committee of the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan
16		Azamat Abuov	Recreation and tourism expert	Forest and Specially Protected Natural Areas Department of the Forestry and Wildlife Committee of the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan
17		Zamira Galiyeva	Head	Department of Reproduction of Natural Complexes of the Republican State Institution "State Forest Natural Reserve "Semey Ormany"
18		Tatiana Sopova	Engineer for reforestation	Republican State Institution "State Forest Natural Reserve "Semey Ormany"
19		Altyn Turalieva	Head	Forestry Department of the Department of Natural Resources and Environmental Management of the West Kazakhstan region
20	MONGOLIA	Chuluunbaatar Tsevee-Oirov	Senior officer	Department of Forest Policy and Coordination at Ministry of Environment and Tourism
21		Gereltsetseg Chuluunbaatar	Researcher	Institute of Botany, Mongolian Academy of Science
22	MYANMAR	Kay Khine	Staff officer	Forest Department
23		Nan Shwe Yi	Range officer	

24	PHILIPPINES	Ray Thomas Kabigting	Supervising Forest Management Specialist	Environmental Forestry Section (EFS). The Section that handles climate change concerns/ initiatives
25		Ina Karissa Tobias	Senior Forest Management Specialist	Technical staff involves in planning and policy, and climate change activities/ initiatives
26		Claudett Endozo	Forest Management Specialist II	
27		Karen Candice Calanasan	Forest Management Specialist II	
28		Rogelio Gibe	Senior Forest Management Specialist	
29		Mary Edestin Henson	Senior Forest Management Specialist	
30		Elise Gabrielle Esguerra	Forest Management Specialist II	Technical staff of EFS and handles climate change concerns/initiatives
31	SINGAPORE	Lily Kwan Oi Chun	Manager	Conservation, Nparks
32		Fairoz Mohamed	Manager	Projects (International Biodiversity Conservation), Nparks
33	THAILAND	Prattana Meesincharoen	Foreign Relations Officer	Royal Forest Department
34		Pinyarat Chayaporn	Forestry Officer, Practitioner Level	
35	TIMOR-LESTE	Fernando Casimeiro de Araujo	Head of Department of Watershed Management	Directorate General for Forestry, Coffee and Industrial Tree Plantations (DGFCIP)
36		Arcanjo dos Reis	Head of Department of Coffee Development	
37		Manuel da Cruz	Head of Department of Coastal Areas Management	
38		Albino da Silva	Technical staff for GIS and Mapping Unit, General Directory of Forestry, Coffee and Industrial Plants	
39		Ivany Sousa Magno Ximenes		
40		Jose Ronaldo Fernandes Oki		
41		Madalena Godinho	Technical staff of Department of Forests Guard and Forests Extension	
42		Marquita Maria deJesus Soares	Technical staff for Department of Natural Tourism Development	
43	VIET NAM	Le Canh Nam	Researcher	Forest Science Institute of Central Highlands and South of Central Viet Nam
44		Trieu Bao Ngoc	Chief Forestry Officer	Viet Nam Administration of Forestry
45	LECTURERS & FACILITATORS	Joowon Park	Program Officer	Strategy and Outreach Team, AFoCO Secretariat
46		Suree Lakanavichian	Head	Department of Highland Agriculture and Natural Resources, Faculty of Agriculture, Chiang Mai University
47		Hassan Ibrahim	AFoCO Focal Official of Singapore	National Parks Board, Singapore
48		Veerachai Tanpipat	A Senior Expert	Faculty of Forestry, Kasetsart University
49		Alexandre Meybeck	A Senior Technical Advisor	CGIAR Research Program on Forests, Trees and Agroforestry, CIFOR
50		Ma Hwan-Ok	Projects Manager	International Tropical Timber Organization (ITTO)
51		Lasco, Rodel D.	Executive Director	Oscar M. Lopez Center, Philippines
52		Lee Yeongjoo	Director	AFoCO Secretariat
53		Soozin Ryang	Program Officer	RETC
54		Su Yi Hnin	Staff	RETC
55		Hyeon Jeong Kim	Internship student	RETC
56		Zhaniyat Baltabayeva	Interpreter	RETC

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.

AFoCO Regional Education and Training Center (RETC)

AFoCO RETC was established as a subsidiary organ of AFoCO to develop the capacities of member countries in dealing with forestry and related environmental issues. The RETC provides practical and problem-solving oriented training programs, training courses, and workshops to enhance the knowledge and skills of diverse participants including government officials from member countries, researchers, university students, and members of local communities, among others.

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