Course Outline

Annual International Training Course

Course title

"Forest-Based Solutions for Climate Change Mitigation and Adaptation"

Duration

26 October - 8 November 2026

Background

Thailand International Cooperation Agency (TICA)

TICA is a national focal point for Thailand's international development cooperation. It was established in 2004 to realize Thailand's aspiration to be a contributor to international development cooperation. Believing that global challenges are best addressed through international cooperation and global partnership, TICA continues to work closely together with its development partners to realize the global development agenda though various capacity-building and human resources development programs. In response to the recent changes in the global landscape of development cooperation, TICA has strengthened its partnerships to harness the synergy of South-South and Triangular Cooperation to tackle global development challenges, including expediting the implementation of Sustainable Development Goals (SDGs). It also continues to realign our focuses in order to deliver Thailand's commitments as a global reliable partner.

Since 1991, TICA, in collaboration with education institutions in Thailand, has offered short-term training courses under its Annual International Training Course (AITC) program. The number of courses offered each year varies between 25 to 35 courses for 20 participants per course. AITC not only fosters good and friendly relation which Thailand has already enjoyed with recipient countries across regions, but also helps Thailand to reach out to those countries with which we desire to engage more closely. The courses offered by TICA in 2023-2025 are categorized into 5 themes: Sufficiency Economy Philosophy (SEP), food security, climate change and environmental issues, public health, BCG Model related.

Organization/institution

Kasetsart University Faculty of forestry (KUFF) was firstly established on **1**st May **1936** as a Forest School in Phrae province, northern Thailand. The school was renamed as the Forestry School and the College of Forestry in **1939** and **1947**, respectively. Since then, it has been the only faculty in Thailand that offers higher education and degrees in forestry and related fields. At present, the Faculty of Forestry consists of the six departments including Forest Management; Forest Biology; Forest Products; Silviculture; Forest Engineering; and Conservation.

The Faculty of Forestry offers an undergraduate program in a Bachelor of Science (Forestry) in the **8** majors comprising of Watershed and Environment Management; Forest Biological Science;

Forest Engineering; Silviculture; Park, Recreation, and Tourism; Wildlife and Range Management; Forest Management; and Social Forestry. In addition, it offers **5** Master's degree programs including (**1)** Forestry; (**2)** Forestry Resource Management; (**3)** Forest Biological Science; (**4)** Parks, Recreation, and Tourism; and (**5)** Forest Resource and Environmental Administration. The M.Sc. (Forestry) comprises **5** branches namely (**1)** Watershed and Environment Management; (**2)** Forest Engineering; (**3)** Silviculture; (**4)** Wood Industrial Technology; and (**5)** Pulp and Paper Industrial Technology. Furthermore, the department offers a doctoral program, Doctor of Philosophy (Forestry) which consists of **7** branches such as (**1)** Forestry Resource Management; (**2)** Watershed and Environment Management; (**3)** Forest Ecology; (**4)** Forest Engineering; (**5)** Silviculture; (**6)** Wood Industrial Technology; and (**7)** Parks, Recreation and Tourism. Currently (in **2022)**, there are **1316** bachelor students, **266** master students, and **32** doctoral students in the Faculty of Forestry, Kasetsart University.

Not only the comprehensive learning facilities at the Faculty of Forestry in Bangkok, but our undergraduate and graduate students also become familiar with forestry fieldwork and research by working and researching in **8** research and training stations of the faculty located throughout Thailand. Each of the research and training station situated in different forest types such as evergreen forest, dipterocarp forest, deciduous forest, restoration forest, agroforest, urban forest, and plantation.

Program background

Since the 20th Century, climate change, particularly increasing temperatures, changing precipitation patterns, and occurrence of extreme climate event has strong impact to ecosystem as well as carbon cycles in the world. The rate and scale of projected climate changes in the 21st century is likely to have profound impacts on the functioning of Earth's ecosystems. Global warming has changed climate variability, which will cause more severe and extreme weather events in the future in the form of severe floods and droughts. Climate change impacts every type of natural resource. The impacts of climate change on forests will vary widely based on the species involved and other factors. With increasing CO_2, forest productivity will likely increase until other impacts of climate change, such as increased risks of drought, forest fire, pests, and invasive species present additional stressors to forests. The distributions of plant and animal species continue to change as rising temperatures alter ecosystems and amplify existing environmental concerns. In addition, climate change threatens our ability to ensure food security, eradicate poverty, and achieve sustainable development.

The climate change caused by increase in atmospheric concentration of CO_2 and other greenhouse gases (GHGs), can be addressed through adaptation and mitigation strategies. Mitigation and adaptation are the two primary instruments of the international climate convention to minimize negative impacts of climate change on humans and ecosystems. The less effective global mitigation is in reducing anthropogenic GHG emissions and increasing GHG sinks, and more adaptation is needed to avoid such negative impacts. Adaptation deals with enhancing the adaptive capacity and/or reducing vulnerability to climate change impacts while also taking advantage of the positive opportunities resulting from climate change. Despite both aiming to reduce the negative human and ecosystem impacts of climate change, the two measures are different in their specific objectives, scope, time dimension, and level of collaboration required. Forests and climate change are intrinsically linked, in ways that extend beyond carbon. Forest ecosystems capture and store CO_2, making a major contribution to the mitigation of climate change. When forests are destroyed, over-harvested or burned, however, they can become a source of CO_2 emissions. From the perspective of climate, sustainable forest management is a means of achieving the goals outlined by the UNFCCC with respect to forests. Forests are used for carbon capture and storage, thus reducing the emissions of greenhouse gases — in this way, forests become part of a climate strategy for mitigation. Forests and trees are also used as part of a strategy to cope with impacts of climate change — in this way, forests become part of a climate strategy for adaptation. For many years, forest policymakers, managers and practitioners have worked to

conceptualize and implement sustainable forest management for climate change mitigation and adaptation. At COP26 late last year, the international community became seriously vocal about the new ambitious goals to reduce GHGs emissions to zero in a hope to achieve a sustainable and resilient society against harsh impacts caused by pandemics like Covid-19. Along with the mitigation efforts, adaptation to help boost social resilience also gained an extensive attraction. The massive public health crisis has also unexpectedly thrust the focus on the most critical environmental challenges: climate change and the loss of biodiversity.

Southeast Asia is a vulnerable region in terms of climate change's effects. The region has experienced numerous climate change effects, including water shortages, heatwaves, forest fires, typhoons, and severe thunderstorms, due to its vast and diverse geography and dense population (hundreds of millions live in low elevation coastal zones). Adaptation strategies and the possible adaptation options available for this region is needed. However, we need to integrate efforts to mitigate the causes of climate change (mitigation) based on forest resources and adapt to changing climatic conditions (adaptation). Actions that promote both goals provide win-win solutions but in some cases, however, negotiating tradeoffs and minimizing conflicts between competing objectives are required. Therefore, a better understanding of mitigation, adaptation, resilience and low-emissions development synergies can reveal greater opportunities for integration in forest and natural resources management in the Southeast Asian region.

Objective

The overall objective of the designed training program is to provide an understanding of the impacts, mitigation, and adaptation of climate change on forest and natural resource management. The program focuses on integrating forest-based solutions in both global and Southeast Asian contexts.

Course content

The course content is as follows:

- Overview of climate change and forest resources
- Climate change impacts on forest resources and their adaptation
- Forest-based mitigation options and carbon management
- Integrated management of forest resources in the context of climate change mitigation and adaptation

The lecture outline is as follows:

- Overview of climate change and forest resources
- Climate change impacts on biodiversity and forest resources
- Country situation in climate change and forest resources
- Policy context for forest-based climate change mitigation and adaptation (International and regional levels)
- Forest-based mitigation and carbon management: Good practices and lessons learned from Thailand
- Optimizing forest carbon through forest landscape approach
- Climate change mitigation through agroforestry: strategies for enhancing food security
- GHG mitigation mechanism: carbon offsetting and trading
- Integrating REDD+ into Carbon Credit Projects: Thailand’s Experience with Community Forestry
- Forest carbon measurement and Monitoring and technology applications
- Community-based adaptation and resilience to climate change
- GHG emission reductions through forest fire control and management
- Integrated management of forest resources in the context of climate change mitigation and adaptation (Group presentation)
- Field excursion (4 days)

Tentative Schedule
Venue: KUFF

Time	Activity	Remarks
Day 1	Arrival of participants/Check-ins	The Secretariat
Day 2 Morning	Registration	The Secretariat
	Opening ceremony and course orientation: overview of the training objectives and expectations	KUFF Facilitators
Day 2 Afternoon	**Introduction to climate change and forest resources** ***Lecture 1:*** Terminology, causes, trends, and the relationship between land-use change and climate change	KUFF Trainer
	Introduction to climate change and forest resources ***Lecture 2:*** Climate change impacts on biodiversity and forest resources	KUFF Trainer
	Icebreaking dinner	TBA
Day 3 Morning	**Policy and country perspectives** Country situation reports: presentations and discussions on climate change and forest resources	KUFF Facilitators
Day 3 Afternoon	***Lecture 3:*** Policy context for forest-based climate change mitigation and adaptation (International and regional levels)	Invited speaker (DCCE)
	Recap and reflection session	KUFF Facilitators
Day 4 Morning	**Forest-based mitigation and carbon management** ***Lecture 4:*** Forest-based mitigation and carbon management: Good practices and lessons learned from Thailand	KUFF Trainer
Day 4 Afternoon	**Forest-based mitigation and carbon management** ***Lecture 5:*** Optimizing forest carbon through forest landscape approach	KUFF Trainer
	Recap and reflection session	KUFF Facilitators
Day 5 Morning	**Forest-based mitigation and carbon management** ***Lecture 6:*** Climate change mitigation through agroforestry: strategies for enhancing food security	KUFF Trainer
Day 5 Afternoon	**Carbon offset mechanisms** ***Lecture 7:*** GHG mitigation mechanism: carbon offsetting and trading	Invited speaker (TGO)
	Recap and reflection session	KUFF Facilitators
Day 6 Morning	**Carbon offset mechanisms** ***Lecture 8:*** Integrating REDD+ into Carbon Credit Projects: Thailand's Experience with Community Forestry	Invited speaker
Day 6 Afternoon	**Carbon offset mechanisms** ***Lecture 9:*** Forest carbon measurement and monitoring	
	Recap and reflection	KUFF Facilitators
Day 7	Thai Culture Exchange Activity (One-day trip)	KUFF Facilitators
Day 8 Morning	**Forest climate change adaption** ***Lecture 10:*** Community-based adaptation and resilience to climate change	Invited speaker (RECOFTC)
Day 8 Afternoon	**Integrated forest management in the context of climate change mitigation and adaptation** ***Lecture 11:*** GHG emission reductions through forest fire control	KUFF Trainer

Time	Activity	Remarks
	and management	
	Recap and reflection session	KUFF Facilitators
Day 9	**Field Excursion (Day 1)** Integrated farming management (agroforestry and fruit orchard management)	Invited speakers, KUFF facilitators
	Lesson learned and discussion	KUFF Facilitators
Day 10	**Field Excursion (Day 2)** Forest landscape restoration: Environmental achievement and co-benefits for well-being improvement	Invited speakers, KUFF facilitators
	Local foods and products from local integrated farming management	Local farmers, KUFF facilitators
	Lesson learned and discussion	KUFF Facilitators
Day 11	**Field Excursion (Day 3)** Integrated bamboo farming management	
	Integrated tree farming management	
Day 12	**Field Excursion (Day 4)**	
	Lesson learned and discussion session	KUFF Facilitators
	Travel back to the venue in BKK	
Day 13 Morning	**Integrated forest management in the context of climate change mitigation and adaptation** Group presentation	KUFF Facilitators
Day 13 Afternoon	**Integrated forest management in the context of climate change mitigation and adaptation** Group presentation	KUFF Facilitators
	Closing Ceremony: Official end of the training program	KUFF Facilitators
Day 14	Departure of participants	The Secretariat

Participant criteria

Be nominated by their respective governments

Education: Bachelor's degree in Forestry, Environment, or related field

Language: proficiency in English (speaking reading and writing)

Attendance and evaluation

Participants who complete the training will receive a certificate based on:

- Class attendance (not less than 80%)
- Interactive class participation
- Presentation and report
- Evaluation

Venue

Faculty of Forestry, Kasetsart University, Bangkok

Forestry Research and student training station, Nakhon Ratchasima province

Expected results

1. The trainees understand climate change impacts on forest and its role
2. The trainees understand climate change mitigation and adaptation for forest and natural resources management
3. The trainees can implement climate change mitigation and adaptation to manage forest and natural resources in regional international and level

Organization/institutions

Implementing agencies

- Forestry Research Center, Faculty of Forestry, Kasetsart University
- Forest Research and Development Office, Royal Forest Department

Contact persons

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Expenditure/funding

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