



Course Outline

Annual International Training Course

Course title

“Forest-Based Solutions for Climate Change Mitigation and Adaptation”

Duration

10-28 July 2023

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 through 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 1st 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 of precipitation pattern, 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 the 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 CO₂, 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 CO₂ 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 the 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 CO₂, 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 CO₂ 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, 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
- 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
- Country situation in climate change and forest resources
- Climate change impacts on forest resources and Forest-based mitigation options
- Forest and climate change mitigation through REDD+ mechanism
- Payment for ecosystem service (PES) to enhance forest conservation
- GHG emission reductions through forest fire control and management
- Maximizing forest carbon through forest landscape approach
- Climate change mitigation through economic forest management
- Climate change mitigation through wood-based energy and harvested wood products
- GHG emission reduction mechanism (carbon offsetting and trading)
- Forest carbon measurement and Monitoring and technology applications
- Climate change impacts on forest ecosystems and biodiversity and adaptation options
- Climate change adaptation and water resource management
- Community-based adaptation and resilience to climate change
- Climate change adaptation and mitigation for nature-based tourism
- Sufficiency Economy Philosophy (SEP) in the context of climate change mitigation and adaptation
- Integrated management of forest resources in the context of climate change mitigation and adaptation
- Best practices and lesson learned from climate change mitigation and adaptation projects implemented in Thailand including the late King Bhumibol's philosophy and initiatives projects

Tentative Schedule		
Venue: KUFF		
Time	Activity	Remarks
Day 1 Morning	Registration	The Secretariat
	Opening ceremony	The Secretariat
	Course orientation	KUFF Facilitators
Day 1 Afternoon	Introduction to climate change and forest resources Part 1: terminology, causes, situations, trends, relationship between land-use change and climate change	KUFF Trainer
	Recap and reflection	KUFF Facilitators
Day 2 Morning	Introduction to climate change and forest resources Part 2: impacts, mitigation and adaptation	KUFF Trainer
Day 2 Afternoon	Country situation in climate change and forest resources (country report presentation and discussion)	KUFF Facilitators & participants
Day 3 Morning	Policy context for forest-based climate change mitigation and adaptation (International and regional levels)	Invited speaker
Day 3 Afternoon	Climate change impacts on forest resources and forest-based mitigation options	KUFF Trainer
	Recap and reflection	KUFF Facilitators
Day 4 Morning	Forest and climate change mitigation through REDD+ mechanism	Invited speaker
Day 4 Afternoon	Payment for ecosystem service (PES) to enhance forest conservation	KUFF Trainer
	Recap and reflection	KUFF Facilitators
Day 5 Morning	GHG emission reductions through forest fire control and management	KUFF Trainer
Day 5 Afternoon	Maximizing forest carbon through landscape approach	Invited speaker
	Recap and reflection	KUFF Facilitators
Weekend		
Day 6 Morning	Climate change mitigation through economic forest management	KUFF Trainer
Day 6 Afternoon	Climate change mitigation through wood-based energy and harvested wood products	KUFF Trainer/ Invited speaker
	Recap and reflection	KUFF Facilitators
Day 7 Morning	GHG emission reduction mechanism (carbon offsetting and trading)	KUFF Trainer/ Invited speaker
Day 7 Afternoon	Forest carbon measurement and Monitoring Part 1: ground inventory	KUFF Trainer
Day 8 Morning	Forest carbon measurement and Monitoring Part 2: Technology applications	KUFF Trainer
Day 8 Afternoon	Forest carbon credit projects implemented in Thailand	KUFF Trainer
	Recap and reflection	KUFF Facilitators
Day 9 Morning	Climate change impacts on forest ecosystems and biodiversity and adaptation options	KUFF Trainer
Day 9 Afternoon	Climate change impacts and adaptation in water resource management	KUFF Trainer
Day 10 Morning	Community-based adaptation and resilience to climate change	Invited speaker
Day 10 Afternoon	Climate change adaptation and mitigation for nature-based recreation and tourism	KUFF Trainer
	Recap and reflection	KUFF Facilitators
Weekend		
Day 11 Morning	Concepts and risk analysis for integrated management of	KUFF Trainer

Tentative Schedule Venue: KUFF		
Time	Activity	Remarks
	forest resources in the context of climate change mitigation and adaptation	
Day 11 Afternoon	Sufficiency Economy Philosophy (SEP) in the context of climate change mitigation and adaptation	Invited speaker
Day 12 Morning	Integrated management of forest resources in the context of climate change mitigation and adaptation through the King Rama 9's initiatives: best practices at the Royal Agricultural Research Station Angkhang	KUFF Trainer
Day 12 Afternoon	Integrated management of forest resources in the context of climate change mitigation and adaptation in wetland ecosystem: A case study at the Khuan Khreng Wetlands	KUFF Trainer/ Invited speaker
	Lesson learned and Discussion	KUFF Facilitators
Day 13 Morning	Integrated management of forest resources in the context of climate change mitigation and adaptation in wetland ecosystem: A case study at Nan province, northern Thailand	KUFF Trainer/ Invited speaker
Day 13 Afternoon	Planning of integrated management of forest resources in the context of climate change mitigation and adaptation	KUFF Facilitators (Guidance and group practices)
Day 14 Morning	Planning of integrated management of forest resources in the context of climate change mitigation and adaptation (cont.)	KUFF Facilitators (Guidance and group practices)
Day 14 Afternoon	Preparation of integrated management of forest resources in the context of climate change mitigation and adaptation	KUFF Facilitators Participants
Day 15 Morning	Presentation integrated management of forest resources in the context of climate change mitigation and adaptation: Group presentation and discussion	KUFF Facilitators Participants
Day 15 Afternoon	Course concluding session (Capture feedback and conclude the training session) Closing ceremony	Facilitators

Remarks: Details of the class lectures and exercises could be revised based on the participants' backgrounds.

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:

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

Venue

Faculty of Forestry, Kasetsart University, Bangkok (on-line workshop)

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

Contact persons

- Dr. Sapit Diloksumpun: fforspd@ku.ac.th

Expenditure/funding

Thailand International Cooperation Agency (TICA)
Government Complex, Building B (South Zone), 8th Floor,
Chaengwattana Rd. Laksi District, Bangkok 10210 THAILANG
Website: <http://tica-thaigov.mfa.go.th/en/index>

งบประมาณค่าจัดรายการฝึกอบรมบูรณาการไทย หลักสูตรอบรมนานาชาติประจำปี 2566

“Forest-Based Solutions for Climate Change Mitigation and Adaptation”

ระหว่างวันที่ 10-28 กรกฎาคม 2566

รายการ	อัตราค่าใช้จ่ายตามระเบียบสำนักงาน	งบขอม		งบจัดสรรให้	
	ความร่วมมือ	รายละเอียดที่ขอ	บาท	บาท	รายละเอียดการจัดสรรให้
1. ค่าบรรยายภาคต่างประเทศ (สำหรับวิทยากรเป็นข้าราชการ รัฐวิสาหกิจ และภาคเอกชน)	ไม่เกินวันละ 2,000 บาท	วิทยากร (2,000 บาท x 3 ชม x 23 คน)	138,000		
		วิทยากรกะบนगर (2,000 บาท x 2 คน x 3 ชม x 6 คน)	72,000		
		วิทยากรกะบนगर (2,000 บาท x 2 คน x 5 ชม)	20,000		
2. ค่าสอนฝึกภาคปฏิบัติ (การบรรยาย)	อัตราทั้งหมดของค่าบรรยายภาคทฤษฎี (ภาคอังกฤษ)	-	-		
3. ค่าตอบแทนเจ้าหน้าที่ประสานงานนอกเวลา	วันทำการ ชมละ 50 (ไม่เกิน 4 ชม)	(200 บาท x 2 คน x 15 วัน)	6,000		
	วันหยุด ชมละ 60 (ไม่เกิน 9 ชม)				
4. กรณีเดินทางไปอบรม/ดูงาน	-	-	-		
5. ค่าอาหารว่างและเครื่องดื่มระหว่างจัดหลักสูตร	หน่วยงานราชการ 50 บาท/คน/ครั้ง	-	-		
	หน่วยงานเอกชน 80 บาท/คน/ครั้ง	-	-		
6. ค่าเลี้ยงรับรอง (1 ครั้ง)		-	-		
7. ค่าตกแต่งสถานที่ในพิธีเปิดเปิด	เท่าที่จ่ายจริงครั้งละไม่เกิน 1,000 บาท (เบิกได้เพียง 1 ครั้ง)	(1000 บาท x ครั้ง สำหรับห้องถ่ายทอดสอนออนไลน์)	1000		
8. ค่าเช่ารถดูงาน	ไม่เกินวันละ 15,000 บาท	-	-		
9. ค่าวัสดุอุปกรณ์ที่เกี่ยวข้องและจำเป็นในการจัดรายการ (แจกรายละเอียด)	ค่าใช้จ่าย internet	(ประมาณ 5000 บาท)	5,000		
	ค่าอุปกรณ์คอมพิวเตอร์ และระบบออนไลน์	(ประมาณ 30000 บาท)	30,000		
10. ค่าใช้จ่ายอื่นๆ (แจกรายละเอียด)	ค่าห้องประชุมอบรมสำหรับถ่ายทอดระบบออนไลน์	(15 วัน x 3000 บาท)	45,000		
	ค่าตอบแทนสำหรับจัดทำเอกสารประกอบการอบรมแบบอิเล็กทรอนิกส์ 23 เรื่อง	(1000 บาท x 23 เรื่อง)	23,000		
	ค่าจ้างเหมาจัดทำสื่อวีดิโอ แนวปฏิบัติที่เป็นเลิศ ณ สถานที่เกษตรกรรมต่างๆ	(ประมาณ 100000 บาท)	100,000		
	ค่าอำนวยความสะดวกวิทยากร 15%		77,647		
รวมทั้งสิ้น			517,647		