Terms of Reference

THE 7th INTERNATIONAL SUMMER COURSE ON FORESTRY AND ENVIRONMENT (ForSC2026)

Global South Summer Course

Beyond the Tree Line: Balancing Reforestation and Land Use in Mountain Ecosystem

FACULTY OF FORESTRY AND ENVIRONMENT
IPB UNIVERSITY
BOGOR
2026

A. PROGRAM THEME

Beyond the Tree Line: Balancing Reforestation and Land Use in Mountain Ecosystem.

B. BACKGROUND

Mountain regions are vital ecosystems that support life, provide water resources, and host high biodiversity. However, these areas are highly vulnerable to land degradation, erosion, and climate change impacts due to uncontrolled land-use conversion. Theoretically, mountain management requires a Sustainable Land Management (SLM) approach that balances productivity and environmental conservation. As an institution focused on agricultural and forestry innovation, IPB University, through the Faculty of Forestry and Environment and the Faculty of Agriculture, has a strategic responsibility to develop sustainable land-use models in mountain ecosystems.

The summer course, raising the theme 'Beyond the Tree Line: Balancing Reforestation and Land Use in Mountain Ecosystem', is presented as a manifestation of efforts to enhance the quality of internationally oriented and interdisciplinary learning. The program is designed to facilitate knowledge exchange among developing countries within the framework of South-South Cooperation by involving participants from Global South countries across South Asia, Southeast Asia, the Middle East, Africa, South America, and Archipelagic and Island States (AIS). This activity serves as a collaborative platform to discuss similar challenges faced in mountainous regions across participating countries.

Indonesia, particularly the mountainous regions of Java and Sumatra, represents a highly representative natural laboratory for studying sustainable land management practices in tropical mountain ecosystems. Indonesia's experience in managing conservation areas, agroforestry systems, forest rehabilitation, and conservation-based ecotourism provides highly relevant learning opportunities for students from developing countries.

This summer course program is designed to address the need for cross-country learning through an interdisciplinary approach that integrates forestry, conservation, dryland agriculture, landscape ecology, and ecotourism. The implementation of activities in the food estate areas around West Java is expected to provide participants with a comprehensive perspective on land-use dynamics, thereby strengthening IPB's international reputation as a center of excellence in natural resource management education.

C. OBJECTIVES

The objectives of this summer course include:

1. Provide comprehensive understanding to the participants regarding sustainable land use practices in tropical mountainous areas.
2. Enhance the international academic atmosphere at the Faculty of Forestry and Environment, IPB University, through multicultural learning activities.
3. Increase the number of inbound students and lecturers within the IPB

environment

4. Build international collaboration networks between the Faculty of Forestry and Environment, IPB University, and universities in Global South countries.
5. Produce case-based learning modules that can be further developed into joint modules in the future.

D. FORM OF ACTIVITY

The 7th Global South Summer Course activities will be conducted using a hybrid learning scheme that integrates online learning in participants' home countries and offline (onsite) learning in West Java with the following approaches*:*

- Lectures and interactive discussion
- Problem Based Learning (PBL)
- Case Study
- Field-Based Learning
- Group presentation and evaluation

This scheme is designed to equip participants with conceptual understanding before arriving in Indonesia, allowing onsite activities to be fully focused on real case analysis in the field.

E. TIME AND LOCATION

The summer course will be conducted in June 2026 (8-12 June for online course and 21 – 26 for field training). The course program will be carried out online via Zoom for five (5) days and field training onsite (face-to-face) for five (5) days, excluding travel time. The activities will be conducted in a hybrid format, combining online lectures with onsite/field visits to several strategic locations, namely:

a. Cibodas Botanical Garden
Cibodas Botanical Garden is located on the slopes of Mount Gede Pangrango and focuses on conservation and collection of tropical mountain plants. It serves as a center for research, education, and botanical science development, particularly related to highland flora.

b. Gunung Gede Pangrango National Park
Gunung Gede Pangrango National Park (TNGGP) represents a relatively intact tropical mountain ecosystem, covering elevation gradients up to near the natural tree line. It provides real context on ecological functions, conservation challenges, and the importance of balancing protection and land-use pressures.

c. Cibulao Puncak Coffee Plantation
A community-based coffee plantation area that applies sustainable cultivation practices in mountainous regions through a coffee agroforestry system. It highlights how integration between commodity production and conservation can balance local economic needs with reforestation and landscape protection.

d. Gunung Mas Tea Garden
Gunung Mas Tea Plantation represents large-scale land use in mountainous

areas. It serves as an example to understand trade-offs between land conversion for production and reforestation efforts, as well as opportunities for more sustainable landscape management practices.

e. Taman Safari Indonesia

Taman Safari Indonesia functions as an ex-situ conservation institution complementing in-situ conservation in mountain areas. It emphasizes integrated biodiversity conservation, including public education and species conservation as part of sustainable landscape management strategies.

f. Science and Technology Park - STP IPB

Science and Technology Park (STP IPB) is a research-based innovation and business incubation center developed by IPB University. It plays a role in downstreaming research results, particularly in agriculture, forestry, and biosciences, and supports applied technology development.

F. LEARNING OUTCOME AND CREDIT LEARNING SYSTEM

The summer course activities will generate several learning outcomes. These learning outcomes (course learning outcomes) refer to the IPB EC guidelines. The total academic load of this program is 180 hours, equivalent to 4 credits, which in IPB could be converted into the 3 credit Summer Course - IPB301 (3(0-3)) and 1 credit of competition. After participating, students will be able to:

a) Analyze land-use problems in tropical mountainous areas in an interdisciplinary manner
b) Evaluate agroforestry, forest conservation, and sustainable ecotourism practices
c) Identify land-use conflicts between production and conservation
d) Develop solutions based on real case studies in TNGGP and Upland Bogor
e) Communicate analysis results in multicultural academic presentations

The next stage includes the implementation of the credit-earning program through various activities, accompanied by the issuance of certificates recognizing participants' involvement, as well as the evaluation of the achievement of several key performance indicators of higher education institutions. These steps aim to improve the quality of education, provide recognition for students' active participation in both academic and non-academic activities, and support continuous improvement in the performance of higher education institutions through measurement and evaluation.

The learning materials for the 2026 summer course and their conversion into 4 credits (SKS) are presented in **Table 1.**

Tabel 1. Summer course learning materials 2026 and conversion into 4 credits (SKS)

No	Subjects	Learning Hours (Hours)
A.	**LECTURES**	
1	**Day 1**	**3,5**
	Opening and introduction to the 2026 summer course with the theme: ***Beyond the Tree Line****: Balancing*	

No	Subjects	Learning Hours (Hours)
	Reforestation and Land Use in Mountain Ecosystem	
	Lecture 1: Biodiversity: Genetic Resources Management (GRM) and Global Convention	
	Lecture 2: Genetics and Plant Breeding	
	Lecture 3: Genetic Diversity and Climate Adaptation for Mountain Forest Restoration	
2	**Day 2**	2,5
	Lecture 4: Environment: The Dynamics of Soil and Climate at the Tree Line	
	Lecture 5: Renewable Materials and Sustainable Construction, Wood Engineering	
3	**Day 3**	2,5
	Lecture 6: Social Economics: Food Crop Agricultural Policy in Mountainous Areas	
	Lecture 7: Sustainable Recreation and Ecotourism	
4	**Day 4**	2,5
	Lecture 8: Social Economics: Theories of Social Forestry and Land Conflict Management	
	Lecture 9: Forest Vegetation Ecology & Species Diversity	
5	**Day 5**	4
	Lecture 10: Nature-Based Solutions for Mountain Landscape Restoration and Sustainable Land Use	
	Sub-total lectures	**15**
B	**OFFLINE LEARNING ACTIVITIES:**	
	Sustainable Land Use Management Concepts	5
	Agronomy and Forest Genetics	5
	Biodiversity and Silviculture	5
	Social Forestry and Project Based Learning	5
	Sub-total offline learning activities	**20**
C	**FIELD TRIP**	
	Day 1**:** Innovation of Research and Technology	6
	Day 2 :	
	a. Mountainous Tropical Rain Forest	6
	b. Ex-Situ Conservation : Flora	6
	Day 3:	
	a. Agroforestry and Coffee	6
	b. Horticulture and Agricultural Landscape	6
	Day 4: Biodiversity and Wildlife	6
	Sub-Total Field Trip	**36**
D	**ASSIGNMENTS AND COMPETITION**	
	Youth Initiative Contest (YIC)	45
	Project Based Assignment	54
	Sub-total assignments/competition	**99**
	Total Learning Hours	**180**
	1 Credit	**45**
	Total Credit	**4.00**

G. SCHEDULE

The following is the detailed schedule of the summer course from 8 to 12 June 2026:

Day, Date	Time	Activity	Location	Resource Person
Monday, June 8, 2026	09.00 - 09.05	Opening	Zoom meeting	MC
	09.05 - 09.15	Report fro=m the Chairman of the Committee		Chairman
	09.15 - 09.35	Welcoming speech, introduction to the Faculty of Forestry and Environment IPB University, and official opening by the Dean		Dean
	09.35 - 11.40	**Lecture 1:** Biodiversity: Genetic Resources Management (GRM) and Global Convention		Prof. Dr. Iskandar Z. Siregar
	11.40 - 12.00	Young Initiative Contest introduction		YIC Chairwoman
	12.00 - 13.00	Break		-
	13.00 - 15.05	**Lecture 2:** Genetics and Plant Breeding		Dr. Willy Bayuardi
	15.05 - 19.00	Independent study (assignments)		-
	19.00 - 21.05	**Lecture 3:** Genetic Diversity and Climate Adaptation for Mountain Forest Restoration		Prof. Dr. Oliver Gailing
	21.05 - 21.10	Closing		MC
Tuesday, June 9, 2026	09.00 - 09.05	Opening	Zoom meeting	MC
	09.05 - 11.10	**Lecture 4:** Environment: The Dynamics of Soil and Climate at the Tree Line		Dr. Rahadian Pratama
	11.10 - 13.00	Break		-
	13.00 - 15.05	**Lecture 5:** Renewable Materials and Sustainable Construction, Wood Engineering		Prof. Dr. Lina Karlinasari
	15.05 - 15.10	Closing		MC
	15.10 - 20.00	Independent study (assignments)		-
Wednesday, June 10, 2026	09.00 - 09.05	Opening	Zoom meeting	MC
	09.05 - 11.10	**Lecture 6:** Social Economics: Food Crop Agricultural Policy in Mountainous Areas		Prof. Dr. Dodik Ridho N.
	11.10 - 13.00	Break		MC
	13.00 - 15.05	**Lecture 7:** Sustainable Recreation and Ecotourism		Prof. Dr. Azlizam Aziz

Day, Date	Time	Activity	Location	Resource Person
	15.05 - 15.10	Closing		MC
	15.10 - 18.30	Independent study (assignments)		-
Thursday, June 11, 2026	09.00 - 09.05	Opening	Zoom meeting	MC
	09.05 - 11.10	**Lecture 8:** Social Economics: Theories of Social Forestry and Land Conflict Management		Prof. Dr. Dodik Ridho N.
	11.10 - 13.00	Break		MC
	13.00 - 15.05	**Lecture 9:** Forest Vegetation Ecology & Species Diversity		Prof. Dr. Cecep Kusmana
	15.05 - 15.10	Closing		MC
	15.10 - 18.30	Independent study (assignments)		-
Friday, June 12, 2026	09.00 - 09.05	Opening	Zoom meeting	MC
	09.05 - 12.00	Technical Preparation for On-site & Field Learning		Field committee
	12.00 - 13.00	Break		-
	13.00 - 14.40	Independent study (assignments)		-
	19.00 - 21.05	**Lecture 10:** Nature-Based Solutions for Mountain Landscape Restoration and Sustainable Land Use		Prof. Brent Doberstein
	21.05 - 21.10	Closing		Field trip committee

H. SPEAKER

The main speakers in this activity are lecturers from the Faculty of Forestry and Environment, IPB University, and overseas institutions who have expertise in forest genetics, environmental science, tropical forestry, forest ecology, agroforestry, and mountain landscape conservation, as listed in **Table 2**.

Table 2. List of speakers in the summer course program

No	Speaker Name (and Title)	Field of Expertise	Affiliated Institution	Social Media Account (Linkedin/ ResearchGate /IG/Facebook/others)
1	Prof.Azlizam Aziz	Recreation and Ecotourism	Universiti Putra Malaysia	https://scholar.google.com/citations?user=LzUYCZEAAAAJ&hl
2	Prof. Brent Doberstein	Resource and Environmental Management	University of Waterloo	https://www.researchgate.net/profile/Brent-Doberstein
3	Prof. Cecep Kusmana	Biodiversity: Species Diversity	IPB University	https://www.researchgate.net/profile/Cecep-Kusmana

No	Speaker Name (and Title)	Field of Expertise	Affiliated Institution	Social Media Account (Linkedin/ ResearchGate /IG/Facebook/others)
4	Prof. Iskandar Z Siregar	Forest Genetic Resources and Silviculture	IPB University	https://scholar.google.com/citations?hl=en&user=2Zzi-c4AAAAJ
5	Prof. Dodik R Nurrochmat	Forestry Socio-Economics and Social Forestry	IPB University	https://scholar.google.com/citations?hl=en&user=ITv7pkwAAAAJ
6	Dr. Rahadian Pratama	Microbial Genetic Resources and Bioinformatics	IPB University	https://scholar.google.com/citations?hl=en&user=gH6CfY0AAAAJ
7	Prof. Lina Karlinasari	Wood Enginering, Renewable Materials, and Sustainable Construction	IPB University	https://www.researchgate.net/profile/Lina-Karlinasari/3
8	Dr. Willy Bayuardi	Plant Genetics and Breeding	IPB University	https://scholar.google.com/citations?user=5SmNMzkAAAAJ&hl
9	Prof. Dr. Oliver Gailing	Genetic Diversity and Climate Adaptation	University of Gottingen	

In addition, supporting speakers may come from managers of the Herbal and Horticulture Science and Technology Park, community-managed benzoin forests, and agricultural commodity cultivation areas.

I. TARGET PARTICIPANTS

The target participants of this program are approximately 20 international students from Global South countries who are exempted from the summer course fee. The students are from study programs in forestry, agriculture, environment, or related fields and have an interest in issues of sustainable land use, conservation, and mountain area management.

The funding scheme in the form of support includes:

All participants will receive:

1. Free program (course fee waived)
2. Accommodation during the program

Student from IPB University may be selectively involved to create a multicultural academic atmosphere.