Sino-ASEAN Network of Forestry Research Institutes (SANFRI)

Report of the Fourth Early Career Academics Forum

3-5 December 2025 Kuala Lumpur, Malaysia

Overview

Geographically neighboring and sharing similarities in natural resources, ASEAN economies and China possess a strong foundation for collaboration in sustainable forest management. Recognizing the vital role of scientific research and the substantial potential for forestry capacity building, APFNet established the Sino-ASEAN Network of Forestry Research Institutes (SANFRI) to strengthen institutional cooperation and support sustainable forest management in the region. Through its Early Career Academics Forum, SANFRI specifically aims to create a platform for young forestry scholars from ASEAN countries and China to share research findings and foster mutual learning. Since its establishment in 2018, thanks to the dedicated efforts of the SANFRI Steering Committee, the SANFRI Coordination Office (SCO), and the Young Scholar Team, three forums have been successfully held, facilitating meaningful exchanges in forestry research, strengthening professional networks among young scholars, and supporting the translation of innovative ideas into concrete research projects.

Building on this progress, the Fourth Early Career Academics Forum was successfully held from December 3 to 5, 2025, in Malaysia. The Forum was co-organized by the Forest Research Institute Malaysia (FRIM), the Asia-Pacific Network for Sustainable Forest Management and Rehabilitation (APFNet), and the Asia Pacific Association of Forestry Research Institutions (APAFRI). It was designed to strengthen regional research synergy by facilitating structured knowledge sharing on emerging forestry topics and showcasing expertise from participating institutions. A core objective was to accelerate youth-led collaboration by transforming innovative ideas into actionable initiatives, with the potential to develop joint research proposals for the 2026-2027 funding cycle.

Structured over three days to maximize engagement and outcomes, the forum commenced with an indoor session focused on research and collaboration showcases, including presentations from APFNet's Small Research Grant projects and reports delivered by young scholars, followed by an interactive member institutes and youth voices session aimed at identifying priority cross-border cooperation opportunities. The following days featured field visits to the Matang Mangrove Forest Reserve, charcoal and coffee processing facilities, etc., providing practical insights into local conservation and sustainable management practices.

Figure 1 Group Photo of the 4th SANFRI Early Career Academics Forum

Summary of the Agenda Items

This summary reflects the core discussions and findings from the forum's three main sessions, facilitated by Dr. Rochmayanto Yanto of Indonesia's National Research and Innovation Agency. The sessions included presentations on APFNet-funded research projects, young scholar reports, and an interactive dialogue identifying regional collaboration priorities. Key themes emerged around forest restoration, biodiversity conservation, and strengthening research capacity and data systems, highlighting the essential role of youth and science in advancing sustainable forest management across the region.

Opening Remarks

The forum began with opening addresses. Mr. Khairun Anuar Uyup, representing the Forest Research Institute Malaysia, welcomed participants and emphasized the session's focus on presentations and discussions by young scholars to identify synergies and collaborative initiatives for evidence-based sustainable forest management. Ms. Ratna Uli Damayanti Sianturi of the National Research and Innovation Agency of Indonesia stressed the strategic integration of young scholars in tackling complex forestry challenges and reaffirmed Indonesia's commitment to cross-border cooperation. Mr. Wang Chunfeng, Executive Director of APFNet, acknowledged SANFRI's role in nurturing the next generation of forestry leaders and reiterated APFNet's support for youth-led research aligned with regional priorities in sustainable forest management and restoration, encouraging scholars to pursue cross-border project opportunities. Collectively, the speakers highlighted the forum's

role in strengthening the SANFRI network and promoting collaborative, forward-looking forestry research.

Session 1: Small Research Grant Program Presentations - Key Findings and Implementation Progress

This session showcased both outcomes and progress updates from APFNet-funded Small Research Grant projects. Four scholars presented key findings and ongoing developments across a range of thematic areas, including policy analysis for natural forest restoration, modeling of tree seed supply systems, the ecological role of mycorrhizal fungi in plantation settings, and sustainable management practices for bamboo forests.

Presentation 1: Natural Forest Restoration in Vietnam and Lao PDR: Policies and Practices

Ms. Hoang Nguyen Viet Hoa from the Vietnamese Academy of Forest Sciences presented the joint research. The study examines policies and practices for natural forest restoration in Vietnam and Laos, with a focus on governance models, management challenges, and socio-economic dependencies. It employs a mixed-method approach, including literature review, statistical analysis, and field interviews to assess the status in selected provinces. Key findings highlight that about 5 million people rely on forest products for up to 40% of their income, with nearly 80% of the rural population in project areas depending on forests for subsistence. However, over-exploitation and weak legal frameworks have led to resource degradation, biodiversity loss, and regulatory conflicts. Forest land is nationally owned but managed locally, involving multiple stakeholders, though responsibility allocation often remains unclear, leaving around 7.5 million people outside formal forest protection systems.

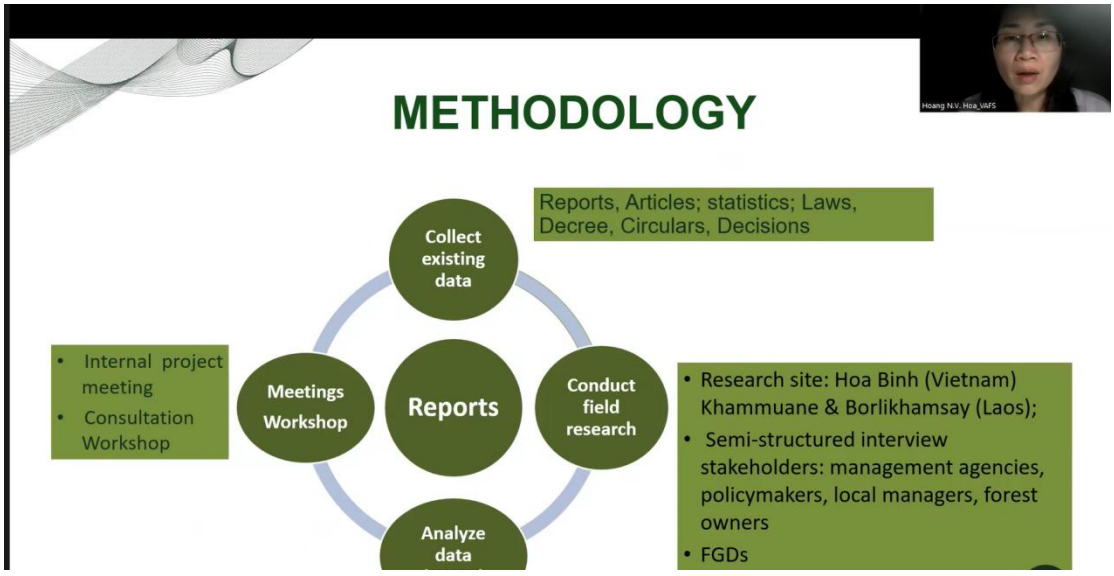

Figure 2 The Comprehensive Methodologies Used for the Joint Research Project

Policy priorities in both economies include improving natural forest conditions, fire

management, and site restoration, with objectives to increase forest coverage to 70% (relative to a 1935 baseline) and enhance forest quality by specified percentages over recent years. To address existing gaps, the study recommends integrated policy reforms that recognize multi-value ecosystem services and ensure equitable benefit-sharing, scaling up funding for restoration, piloting ecological compensation schemes, strengthening monitoring systems to track progress, and enhancing community participation in forest management to improve accountability and effectiveness.

In conclusion, achieving sustainable forest restoration in Vietnam and Laos requires coordinated policy action, science-based management, and inclusive governance. Lessons drawn from current practices will contribute to fostering resilient and sustainably managed forest landscapes in the region.

Presentation 2: Tree Seed Supply Management Model and Policy for Supporting Forest and Landscape Restoration in Indonesia

Ms. Desmiwati, researcher from the National Research and Innovation Agency of Indonesia presented her project addressing critical barriers in the national seed supply system, which currently hinder Indonesia's commitment to restore 12 million hectares of degraded land and 2 million hectares of peatland by 2030. The research, conducted across five provinces (West Java, South Sumatra, South Kalimantan, South Sulawesi, and Yogyakarta) through interviews, focus group discussions, and stakeholder analysis, identified key challenges including insufficient seed supply, variable seed quality, and fragmented institutional coordination. Findings indicate that certified seeds currently meet less than 30% of forest landscape restoration (FLR) demand, contributing to low germination and seedling survival rates, while institutional roles distributed among multiple entities such as BPTH, BPDAS, DLHK, and private actors have resulted in coordination gaps and system inefficiencies.

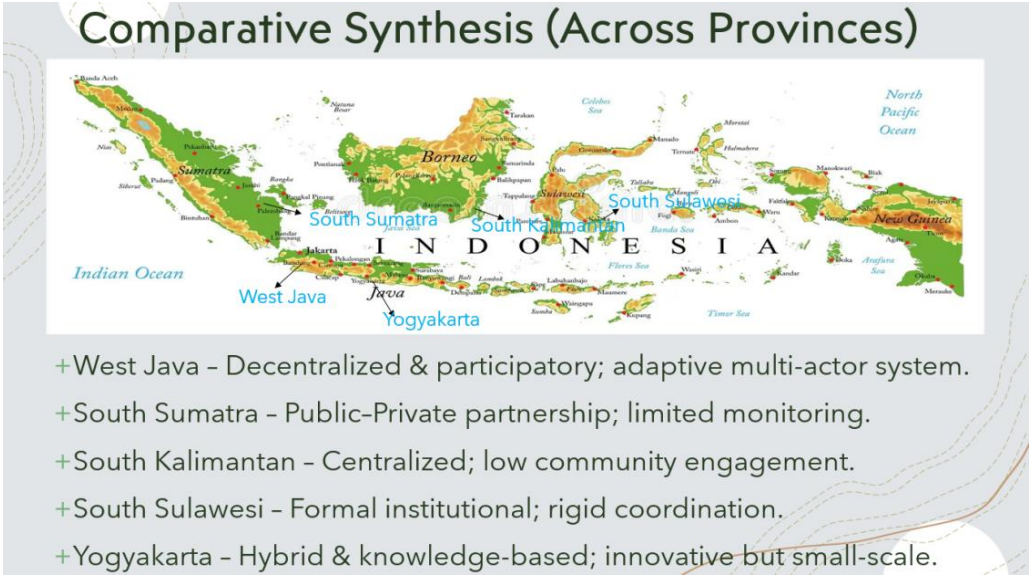

Figure 3 Comparative Synthesis (Across Provinces) of the Project

A comparative provincial analysis further revealed distinct governance models influencing restoration outcomes. Polycentric and adaptive systems in West Java and Yogyakarta demonstrated stronger collaboration and responsiveness, whereas centralized and rigid structures in South Kalimantan and South Sulawesi proved less effective in meeting restoration needs. Based on these insights, the study proposes an Integrated Seed Supply Governance (ISSG) model, comprising (1) a harmonized national policy framework, (2) provincial coordination hubs led by BPTH, (3) support for community-based nurseries, (4) a digital seed traceability system, and (5) a multi-stakeholder forum for monitoring and evaluation.

In conclusion, the research underscores that transitioning toward polycentric governance is essential to improve seed quality, ensure system reliability, and achieve Indonesia's FLR targets. Policy recommendations emphasize integrating sectoral policies, incentivizing certified seed production, and strengthening local institutional capacity. By adopting the proposed ISSG model, Indonesia can address systemic inefficiencies in its seed supply system and effectively support its restoration commitments.

Presentation 3: Preliminary Findings on the Study of Mycorrhizal Fungi Community Structure in Eucalyptus Hybrid Plantation Forest (E. grandis X E. urophylla)

Ms. Thi Bee Kin from the Forest Research Institute Malaysia, in collaboration with the Yunnan Academy of Forestry and Grassland, presented the study titled "Preliminary Findings on the Study of Mycorrhizal Fungi Community Structure in Eucalyptus Hybrid Plantation Forest (E. grandis × E. urophylla)". The research investigates the critical role of mycorrhizal fungi in reforestation efforts involving fast-growing Eucalyptus hybrids, which are used in Malaysia's restoration initiatives amid significant forest cover loss. Conducted across two sites (Selandar, Melaka, and Segamat, Johor) in a 0.5-hectare plantation established in December 2021, the study employed field sampling, morphological identification, and metagenomic analysis to examine the diversity and occurrence of arbuscular mycorrhizal fungi (AMF) and ectomycorrhizal fungi (ECM) in the tree rhizosphere.

Preliminary results indicate high mycorrhizal fungal diversity associated with the Eucalyptus hybrid. Soil analysis revealed acidic conditions (pH 3.8-4.2) with sandy clay textures. Key AMF genera identified included Entrophospora, Gigaspora, and Rhizophagus, along with spores of Glomus sp. and *Septoglomus constrictum*. Root colonization was extensive, with hyphal colonization reaching 100% at both sites, although arbuscule formation showed a negative correlation with soil electrical conductivity, organic matter, and phosphorus content. For ECM fungi, morphological and molecular data identified genera such as Thelephora (representing about 20% of Basidiomycota sequences in Segamat), *Thelephora vialis*, *Thelephora sinopalmata*, and *Pisolithus albus*.

Figure 4 Study Site (Field Sampling, Morphological Identification and Metagenomic Analysis)

The study concludes that the Eucalyptus hybrid demonstrates a strong dependence on mycorrhizal fungi. These preliminary findings advance the understanding of fungal interactions in plantation ecosystems and highlight the potential for applying mycorrhizal technologies to enhance seedling establishment and improve overall forest management outcomes, supporting more resilient and productive restoration efforts.

Presentation 4: Research on Best Practices of Natural Bamboo Forest Management - Enhancing Sustainable Utilization and Local Livelihood

Ms. Ei Ei Swe Hlaing, Assistant Director of the Forest Research Institute of Myanmar, presented collaborative research on best practices for natural bamboo forest management, which will be jointly conducted with the Yunnan Academy of Forestry and Grassland. This study highlights the globally recognized role of bamboo in poverty reduction, climate change mitigation, and sustainable development, emphasizing its significance in Myanmar—the world's third-largest bamboo-growing nation, with annual production reaching 301,973 million units and bamboo supporting the livelihoods of approximately 76% of the population. Focusing on Pinlaung Township, which encompasses 827,792 km² of reserved and protected public forests, the research addresses unsustainable harvesting practices under an open-access system, where annual bamboo shoot extraction exceeds 300,000 viss, leading to resource depletion and increased competition between local communities and external harvesters.

The research objectives include assessing the extent and condition of natural bamboo forests, reviewing effective management practices from Yunnan Province, identifying user groups and extraction methods, and developing actionable policy recommendations. A mixed-methods approach was employed, combining participatory tools such as interviews and focus group discussions with scientific field

surveys that measured bamboo culm density, shoot production, and harvesting patterns. The study is expected to yield evidence-based policy briefs, strengthen forest protection measures, improve community livelihoods, and foster multi-stakeholder collaboration.

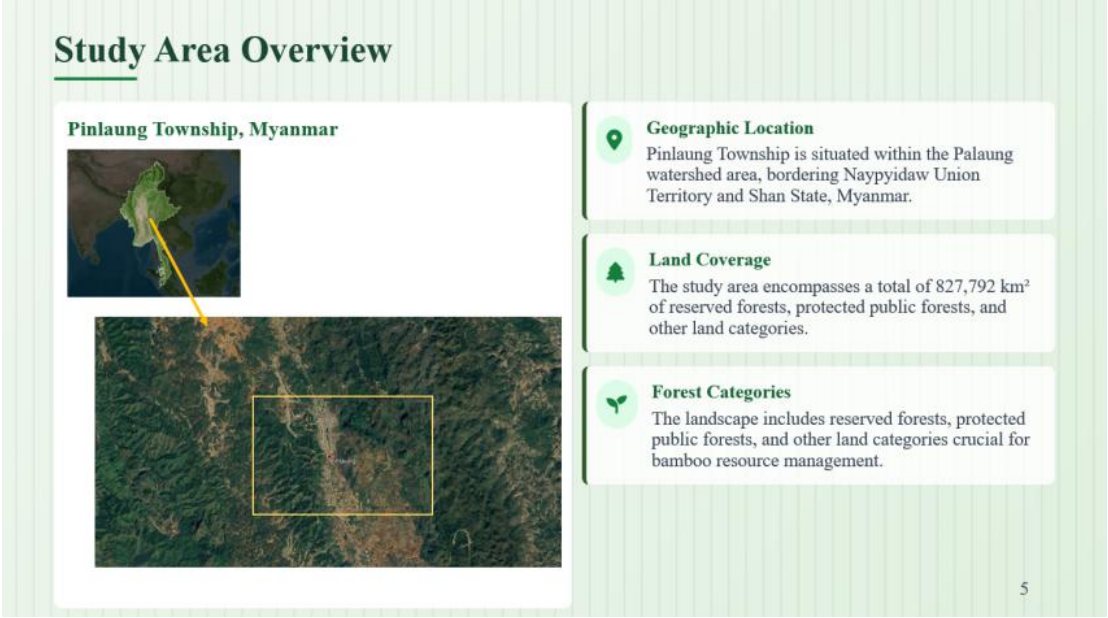

Figure 5 Project Study Area Overview

Through this partnership, the project aims to balance ecological conservation with local socio-economic needs, ensuring the long-term sustainability and resilience of bamboo forest ecosystems in Myanmar. By integrating scientific assessment with participatory management insights, the initiative seeks to transition from open-access exploitation to sustainable utilization models, ultimately supporting both forest health and community well-being.

Session 2 Young Scholar Research Reports - Emerging Innovations and Academic Contributions

This session featured three reports that showcased the cutting-edge research contributions of SANFRI's early-career scholars, covering a range of pressing forestry challenges and innovative approaches

Report 1: Protecting Forests from Invasive Beetles

Ms. Ong Su Ping from the Forest Research Institute Malaysia presented a pilot surveillance program targeting high-risk entry points in Peninsular Malaysia to address the threat of invasive wood-boring beetles. The study focuses on three beetle families of major biosecurity concern: Curculionidae (bark and ambrosia beetles), Cerambycidae (longhorn beetles), and Bostrichidae (powderpost beetles), which are commonly transported via wood packaging and traded commodities. With global losses from invasive species estimated at US$373 million, and international trade serving as a primary invasion pathway, the introduction and establishment of these

pests are heightened by favorable climatic conditions and the absence of natural enemies.

Surveillance was conducted at major transportation hubs, including Port Klang (Northport and Westport) and the Kuala Lumpur International Airport cargo terminal, using intercept panel traps and 1.5-L PET bottle traps baited with ethanol, alpha-pinene, and cerambycid lures. Samples were collected every two weeks and processed through morphological identification and DNA barcoding. Preliminary results from a four-month sampling period documented 156 individuals representing 29 species, with bottle traps capturing 65% of species and panel traps with ethanol and multi-lure combinations capturing 51% and 58% respectively. Dominant species included the bark beetle Hypothenemus spp. (46 individuals) and the ambrosia beetle Xyleborus perforans (30 individuals).

Beetle family	Flight intercept trap + ethanol + alpha-pinene + cerambycid lure	Flight intercept trap + ethanol	Bottle trap + ethanol
Cerambycidae	2	0	1
Curculionidae	34	49	60
Bostrichidae	6	2	2
Total individuals	42	51	63

- 29 species recorded from 156 individuals sorted
- 65% (19) species intercepted in bottle trap + ethanol
  51% (15) intercept panel trap + ethanol
  58% (17) intercept panel trap + alpha-pinene, ethanol, cerambycid
- High abundance of *Hypothenemus* (bark beetle) (46 individuals) and *Xyleborus perforans* (ambrosia beetle) (30 individuals) in all traps

Xyleborus perforans

Figure 6 Preliminary Results of the Study (4 months)

The project aims to establish a sustainable surveillance framework, develop science-based monitoring tools, and strengthen stakeholder capacity through training modules and citizen-science initiatives. Collaboration with national and international institutions remains essential to effectively address biosecurity risks intensified by global trade and climate change, thereby protecting Malaysia's forest ecosystems from the ecological and economic impacts of invasive wood-boring beetles.

Report 2: Research Center for Applied Botany

Ms. Ratna Uli Damayanti Sianturi, researcher from the National Research and Innovation Agency of Indonesia presented ongoing research conducted by the Plant Genetic Resources and Functional Genomics groups at the Research Center for Applied Botany. The study focuses on two economically important native timber species in Indonesia, *Neolamarckia macrophylla* and *Neolamarckia cadamba* (commonly known as Jabon), which are prioritized for reforestation and agroforestry due to their fast growth and high-quality wood. The primary objective is to apply whole-genome sequencing to assemble complete chloroplast genomes and identify microsatellite markers, with additional use of transcriptomic data analysis to develop

single nucleotide amplified polymorphism (SNAP) markers linked to growth-related traits.

Key activities within the project include: (1) Genome Sequencing and Annotation, aiming to produce high-quality reference genomes to resolve structural variations and facilitate comparative genomics; (2) Chloroplast Genome Assembly, supporting phylogenetic analysis and improving understanding of evolutionary relationships within the Rubiaceae family; and (3) Microsatellite Marker Development, focused on identifying polymorphic loci for genetic diversity assessment and marker-assisted selection. These genomic resources are essential for advancing breeding programs, supporting conservation initiatives, and enabling population genetics studies.

Figure 7 Field Collection of Transcriptomic Data from Jabon Trees at the Study Site

This research aligns with national goals to strengthen forest genetic resources and promote sustainable timber production. The outcomes are expected to contribute to optimized silvicultural practices, improved seed quality, and enhanced biodiversity conservation. By integrating bioinformatics and molecular tools, the project reflects the research center's commitment to addressing key challenges in plant science and supporting evidence-based forest management in Indonesia.

Report 3: Forest Research and Development Office of Thailand

Ms. Thanida Phakdee, Forestry Technical Officer of the Forest Research and Development Office (FRDO) in Thailand, presented the "Plantation Project to Increase Green Areas for Carbon Dioxide Absorption at the Silvicultural Research Center 6 in Nakhon Ratchasima". As part of FRDO's broader role in managing and conserving Thailand's diverse forest ecosystems, including evergreen, deciduous, mangrove, and pine forests, the project aims to contribute to national forest conservation, reforestation, and climate objectives. This initiative involves planting

both slow-growing species (such as Dipterocarpaceae) and fast-growing species (like Acacia and Casuarina) to improve seed quality for public distribution, support local livelihoods through non-timber forest products like mushroom foraging, and enhance carbon sequestration in line with the Thailand's Low Emission Support Scheme (LESS).

The project follows a structured data collection and certification process in collaboration with the Thailand Greenhouse Gas Management Organization (TGO). Techniques such as GPS mapping, tree height and diameter measurements, and biomass calculations are used to quantify carbon storage, with support from private sector partners including HMC Polymers Company Limited, MJets, and the Thai Credit Guarantee Corporation, which contribute funding and implementation assistance.

Figure 8 Recording the Experimental Plot Corners Geographical Coordinates

Looking forward, Thailand emphasizes the importance of regional collaboration in forest restoration research, capacity building, knowledge sharing, and the adoption of advanced technologies such as LiDAR for forest inventory. These efforts are designed to promote sustainable forest management, climate resilience, and evidence-based policymaking across the region, reinforcing Thailand's commitment to integrating forestry initiatives with climate mitigation and sustainable development goals.

Session 3: Youth Dialogue and Priority Alignment - Mapping Pathways for Regional Collaboration

This interactive session was designed to map the collective priorities, representatives from SANFRI member institutes delivered concise lightning talks. Each presentation provided a brief overview of their institute's strategic focus, followed by a young scholar's perspective on pressing regional collaboration needs. This successfully bridged institutional agendas with the innovative viewpoints of early-career researchers, offering fresh and actionable insights for future cross-border scientific cooperation. Following the talks, a guided interactive discussion allowed the

participants to synthesize these inputs and collectively identify the top three potential areas for collaborative projects.

Figure 9 Young Scholars' Perspectives on Pressing Regional Collaboration Needs

(1) Cambodia (Institute of Forest and Wildlife Research and Development)

Institute of Forest and Wildlife Research and Development oversees 3,000 hectares of research forests and operates facilities including a tissue culture laboratory and seed production areas. Its collaborative projects with organizations such as APFNet and YAFG focus on species conservation and clonal seed orchards. Future priorities include expanding partnerships to advance forest genetic resource conservation and restoration techniques.

(2) China (Yunnan Academy of Forestry and Grassland)

Yunnan Academy of Forestry and Grassland leads research in ecosystem restoration, economic forests, and rare species conservation, hosting key laboratories and maintaining international partnerships. Notable recent studies include telomere-to-telomere genome sequencing of Juglans sigillata and gut microbiota analysis of Asian elephants. Youth initiatives have highlighted the Visiting Scholar Program as an effective model for regional capacity building.

(3) Indonesia (National Research and Innovation Agency)

National Research and Innovation Agency's policy research prioritizes food, energy, and water security within a bioeconomy framework. Key research themes include peatland restoration cost analysis, biodiversity connectivity, and carbon accounting. Proposed collaborations focus on developing integrated forest inventory systems for Shorea species and land-use modeling for disaster mitigation.

(4) Laos (National Agriculture and Forestry Research Institute)

National Agriculture and Forestry Research Institute aligns its strategy with the national Vision 2050, emphasizing sustainable forest resource utilization and restoration. Key challenges include land encroachment, unsustainable harvesting of non-timber forest products (NTFPs), and low economic returns from raw bamboo and medicinal herbs. Proposed research integrates forest restoration with sustainable NTFP value chains, with a focus on bamboo, rattan, and medicinal plants. Youth perspectives underscore the need for localized, cost-effective restoration models such as Assisted Natural Regeneration.

(5) Malaysia (Forest Research Institute Malaysia)

Established in 1929 on reclaimed mining land, Forest Research Institute Malaysia has developed into a leading tropical forestry research center, managing 545 hectares of restored forest. Its research spans six divisions, including biodiversity conservation, biotechnology, and forest product development. The mass flowering event documented in 2025 recorded 81 species across 28 families, enhancing seed supply for reforestation. Youth recommendations include structured short-term scholar exchanges and specialized training workshops to strengthen regional knowledge sharing.

(6) Myanmar (Forest Research Institute)

Forest Research Institute of Myanmar is dedicated to sustainable forest management and biodiversity conservation, supported by 50 researchers specializing in genetics, biotechnology, and soil science. The institute operates a tissue culture laboratory focused on teak, Dalbergia, and medicinal orchids, alongside water and soil laboratories for ecological monitoring. Regional collaboration priorities include technical exchanges on mangrove species utilization, soil mycorrhizal research, and capacity building in advanced research methodologies.

(7) Thailand (Royal Forest Department)

The Forest Research and Development Office of Thailand leads research in silviculture, biodiversity, and forest technology transfer. Its key divisions address urban forest management, wood certification, and climate-resilient practices. Youth delegates have emphasized the need for collaborative demonstration sites focusing on forest restoration and economic plantations, as well as training in advanced technologies such as LiDAR for forest inventory.

(8) Vietnam (Vietnamese Academy of Forest Sciences)

Vietnamese Academy of Forest Sciences manages over 10,000 hectares of research forests and operates advanced laboratories for tree breeding, wood science, and genetic conservation. Key achievements include a gene bank of 4,000 seedlots and the establishment of the Vietnam Forest Certification Scheme. Youth perspectives highlight the importance of transboundary collaboration to address pests, climate change, and illegal logging, alongside the expansion of visiting scholar programs and

joint small research grants.

(9) Interactive Discussion: Research Needs for International Collaboration

During the interactive session, delegates documented their economies' research needs for international collaboration. The discussion revealed broad common concerns alongside distinct regional characteristics. The primary demands were summarized into three overarching themes:

Figure 10 Young scholars' Perspectives on Regional Collaboration Needs

Forest Restoration and Landscape Rehabilitation: The most prominent common need, emphasized by nearly all economies. Specific demands span demonstration plots, silvicultural techniques, and forestry economic development.

Biodiversity Conservation and Genetic Resource Management: Focusing on local species and NTFP conservation, as well as botanical garden and arboretum development.

Improvement of Data Systems and Joint Research Capacity Building: A cross-border priority involving enhanced forest inventory technologies, information systems, and human resource capacity through training, scholar exchanges, and collaborative research programs.

The specific research needs, challenges, and collaboration opportunities for each economy are detailed in the following table:

Comparative Table: Economies' Research Needs for International Collaboration

Institution	Main Research Focus	Key Challenges and Needs	Collaboration Opportunities
Cambodia - Institute of Forest and Wildlife	Forest & wildlife R&D, restoration plots, genetic	Need stronger capacity for young	Forest restoration trials, REDD+

Research and Development	conservation, community forestry	officers, restoration of degraded lands	collaboration, livelihood research capacity building
China - Yunnan Academy of Forestry and Grassland	Six research institutes: restoration, economic forests, forest protection, industry, information systems, arboretum	Classification of low-function forests, ecological assessment methods	Joint ecological zoning studies, forest naturalness evaluation, technology exchange
Indonesia - National Research and Innovation Agency	Biodiversity, sustainable forest management, ecosystem restoration, social forestry	Need integrated data systems, policy strengthening, bioeconomy frameworks	Forest inventory system (e.g., Shorea), climate-risk land models, food-energy-water nexus, human-wildlife coexistence
Laos - National Agriculture and Forestry Research Institute	Sustainable management, protection, conservation, climate adaptation	Large degraded forestland, encroachment, resource depletion, low economic return	NTFP model development (bamboo, rattan, medicinal plants), plantation socio-ecological studies
Malaysia - Forest Research Institute Malaysia	Biodiversity, biotechnology, natural products, arboreta and botanical gardens	Need long-term ecological monitoring, public science outreach	Joint arboretum development, mass-flowering studies, workshops and bulletin publications
Myanmar - Forest Research Institute	Forest development, wood utilization, seed and soil labs, landscape restoration	Limited capacity in proposal writing and advanced research methods	Native species seed quality, watershed restoration, researcher training
Thailand - Royal Forest Department	Silviculture, forest utilization, forest biodiversity, technology transfer	Need advanced data tools for forest inventory and climate resilience	Technology sharing, data analysis software, climate-resilient restoration
Vietnam -Vietnamese Academy of Forest Sciences	Tropical rainforest research, transboundary issues (climate, illegal logging)	Need financing for research mobility, regional info exchange	Visiting Scholar Program (VSP), small research grants, regional climate-forest collaboration

Wrap-up and Closing

The session facilitator provided a concise summary of the day's discussions, emphasizing the promising research avenues presented and the tangible collaborative pathways identified during the interactive dialogue. Throughout the forum, young scholars showcased innovative projects spanning policy analysis, seed system governance, mycorrhizal ecology, sustainable bamboo management, forest genetics, invasive species surveillance, and carbon-oriented afforestation, each contributing actionable insights toward regional forest sustainability.

The forum reaffirmed the vital role of youth-led research in addressing transboundary forestry challenges and highlighted shared regional priorities, including forest restoration, biodiversity conservation, and capacity building in data systems and genetic resource management. Cross-economy exchanges underscored the value of SANFRI in facilitating joint research, scholar mobility, and the co-development of practical solutions.

In closing, sincere appreciation was extended to the co-organizers — the Forest Research Institute Malaysia (FRIM), the Asia-Pacific Network for Sustainable Forest Management and Rehabilitation (APFNet), and the Asia Pacific Association of Forestry Research Institutions (APAFRI) — as well as to all participants for their engaged contributions. The Fourth Early Career Academics Forum successfully strengthened the SANFRI network, fostered meaningful academic exchange, and laid a collaborative foundation for future youth-driven initiatives in sustainable forest management across the region.

Field Visits

The field visits provided delegates with an immersive exposure to Malaysia's integrated approaches to sustainable ecosystem management, wildlife conservation, and heritage industries. Through carefully selected visits, the program highlighted models of ecological stewardship that harmonize environmental protection, community livelihoods, and cultural preservation.

Figure 11 Field Visits on Sustainable Ecosystem Management in Malaysia

The first segment included a visit to the Matang Mangrove Forest Reserve in Kuala Sepetang, Perak, which is the largest and best-managed mangrove ecosystem in Malaysia. Delegates observed sustainable harvesting practices such as systematic thinning and replanting, followed by a tour of the nearby charcoal factory, where they learned about the traditional conversion of mangrove wood into charcoal. This segment underscored a community-involved management model based on rotational harvesting and licensee-led reforestation, demonstrating how ecological sustainability can support local industry.

The second part of the trip featured the Night Safari at Zoo Taiping, offering a close look at nocturnal wildlife and the zoo's role in conservation education. On the return journey to Kuala Lumpur, delegates also stopped at the Antong Coffee Mill in Taiping. Established in 1933, the mill preserves traditional wood-fired roasting techniques and provided insights into Malaysia's coffee heritage, rounding out a trip that bridged natural resource management, biodiversity awareness, and cultural tradition.

Annexes

Annex I - Meeting Agenda

Annex II - List of Participants

Annex I - Meeting Agenda

The 4th SANFRI Early Career Academics Forum

Agenda

Day 2 - 3 December 2025		
Time	**Agenda**	**Facilitator**
13:30 - 13:45	**Opening remarks:** • Forest Research Institute Malaysia (SANFRI Chair) • National Research and Innovation Agency of Indonesia (SANFRI Vice-Chair) • APFNet (SANFRI Sponsor)	Mr. PIN Kar Yong, Executive Secretary of Asia-Pacific Association of Forestry Research Institutions
Session 1: Research & Collaboration Showcase (13:45 - 15:30)		
13:45 - 14:45	**Small Research Grant Program Highlights** • *10-min presentations × 4 projects* • *5-min Q&A after each* 1. Natural Forest Restoration in Vietnam and Lao PDR: Policies and Practices （Hoang Nguyen Viet Hoa, VAFS & Chaloun BOUNITHIPHONH, NAFRI） 2. Tree Seed Supply Management Model and Policy for Supporting Forest and Landscape Restoration (FLR) in Indonesia (Desmiwati et al. – BRIN) 3. Preliminary Findings on the Study of Mycorrhizal Fungi Community Structure in Eucalyptus Hybrid Plantation Forest (E. grandis X E. urophylla) (Thi Bee Kin, FRIM) 4. Assessment of multiple ecosystem services of a typical forest in Yunnan Province (Ei Ei Swe Hlaing)	Mr. ROCHMAYANTO Yanto, Principal Researcher of National Research and Innovation Agency
14:45 - 14:55	**Young Scholar's Report 1** Protecting Forests from Invasive Beetles - by Ong Su Ping (Malaysia)	
14:55 - 15:05	**Young Scholar's Report 2** Whole genome sequencing of Neolamarckia macrophylla (Roxb.) Bosser and Neolamarckia cadamba (Roxb.) Bosser from Indonesia: a	

	vital resource for completing chloroplast genomes and mining microsatellite markers - by Ratna Uli Damayanti Sianturi (Indonesia)	
15:05 - 15:15	**Young Scholar's Report 3** Plantation project to increase green areas to absorb carbon dioxide at Silvicultural Research Center 6 (Nakhon Ratchasima) - by Thanida Phakdee (Thailand)	
15:15 - 15:30	Coffee Break and Group Photo	
Session 2: Member Institutes & Youth Voices (15:30 - 17:30)		
15:30 - 16:50	**Lightning Talks: SANFRI Member Priorities** • *8 economies × 10 mins each* • *Structured as:* *- 4 mins: Institute overview* *- 6 mins: Young scholar perspective on Regional collaboration needs*	Mr. ROCHMAYANTO Yanto, Principal Researcher of National Research and Innovation Agency
16:50 - 17:20	**Interactive Discussion** • *Top 3 cross-border opportunities identified*	
17:20 - 17:30	**Wrap-up and closing**	
18:30 - 20:00	**Welcome Dinner**	
Day 3 - 4 December 2025		
Time	**Agenda**	**Organizer**
	Field visit to Matang Mangrove Forest Reserve	FRIM & APAFRI
07:30 - 08:00	Gather at the hotel lobby (Impiana KLCC Hotel)	
08:00 - 12:00	Travel from hotel to Matang, Perak (by bus)	
12:00 - 13:00	Arrive at Matang Mangrove Forest Reserve Briefing by Larut Matang District Forest Officer	
13:00 - 14:00	Lunch	
14:00 - 17:00	Site visit to mangrove forest plot in Kuala Sepetang (by boat) Visit to **Kuala Sepetang Charcoal Factory**	
17:00 - 18:00	Depart to Taiping and check in Novotel Hotel, Taiping	
18:00 - 20:30	Free time / Dinner on your own	

Annex I - Meeting Agenda

20:30 - 21:30	**Night Safari at Zoo Taiping**	
21:30	Back to Novotel Hotel, Taiping	
Day 4 - 5 December 2025		
Time	**Agenda**	**Organizer**
	Back to Kuala Lumpur from Matang Mangrove Forest Reserve	FRIM & APAFRI
09:00 - 09:30	Gather at the hotel lobby and check out.	
09:30-10:00	Stop by **Antong Coffee Mill** (the oldest coffee mill in Malaysia)	
10:00-14:00	Travel from hotel to Kuala Lumpur (by bus)	
14: 00	Arrive at Impiana KLCC Hotel	
Day 5 - 6 December 2025		
Departure		

Annex II - List of Participants

The 4th SANFRI Early Career Academics Forum

List of Participants

Asia-Pacific Network for Sustainable Forest Management and Rehabilitation (APFNet)			
No.	**Organization**	**Position**	**Name**
1	APFNet	Executive Director	WANG Chunfeng
2	APFNet	Director, Policy Dialogue Division	WANG Jiayi
3	APFNet	Program Officer, Policy Dialogue Division	LUO Xinyi
SANFRI Coordination Office (SCO)			
4	SCO	Director	ZHANG Jinfeng
Cambodia			
5	Institute of Forest and Wildlife Research and Development	Deputy Director	Ma Vuthy
6	Institute of Forest and Wildlife Research and Development	Chief of Forest Development and Botanical Research Center	SRENG Syneath
7	Institute of Forest and Wildlife Research and Development	Staff Officer in Forest Development and Botanical Research Center	SEM Rida
China			
8	Yunnan Academy of Forestry and Grassland	Associate Research Fellow	WANG Lei
9	Yunnan Academy of Forestry and Grassland	Assistant Research Fellow	SUN Zhenhua
Indonesia			
10	National Research and Innovation Agency	Director of Environment, Maritime, Natural Resources, and Nuclear Policy	DAMAYANTI Ratih

Annex II - List of Participants

11	National Research and Innovation Agency	Principal Researcher	ROCHMAYANTO Yanto
12	National Research and Innovation Agency	Young Resercher	RATNA Uli Damayanti Sianturi
13	National Research and Innovation Agency	Researcher	Desmiwati
Laos			
14	National Agriculture and Forestry Research Institute	Director of Forestry Research Centre	Simone Vongkhamho
15	Department of Forestry	Technical official staff, Protected Area Management Division	KHAMPHOUMI Bounpasakxay
16	National University of Laos	Lecturer	SOUKPHAXAY Khonethong
17	National University of Laos	Lecturer	KEOTHOUMMA Khamsing
Malaysia			
18	Forest Research Institute Malaysia	Director General	Ismail Parlan
19	Forest Research Institute Malaysia	Division Director	Mohd Khairun Anwar Uyup
20	Forest Research Institute Malaysia	Research Officer	Thi Bee Kin
21	Forest Research Institute Malaysia	Research Officer	Nurul Farhanah Zakaria
22	Forest Research Institute Malaysia	Forest Entomologist	Ong Su Ping
Myanmar			
23	Forest Research Institute	Assistant Director	Ei Ei Swe Hlaing
24	Forest Research Institute	Assistant Research Officer	Cho Cho Myint
25	Forest Research Institute	Assistant Research Officer	TUN Swe Swe

26	Forest Research Institute	Range Officer	Chu Yadana
Thailand			
27	Royal Forest Department	Director of Silvicultural Research Division	Staporn Duriya
28	Royal Forest Department	Forestry Technical Officer, Forest Research and Development Office	TEDSORN Narin
29	Royal Forest Department	Forestry Technical officer Practitioner Level	PHAKDEE Thanida
30	Royal Forest Department	Scientist, professional level, Forest research development office	CHAYAPORN Pinyarat
Vietnam			
31	Vietnamese Academy of Forest Sciences	Vice President	Tran Lam Dong
32	Vietnamese Academy of Forest Sciences	Researcher	HOANG Nguyen Viet Hoa
33	Vietnamese Academy of Forest Sciences	Researcher	VO Dai Nguyen
Asia Pacific Association of Forestry Research Institutions (APAFRI)			
34	APAFRI	Executive Secretary	PIN Kar Yong
35	APAFRI	Information Officer	SYUQIYAH Abdul Hamid
36	APAFRI	Administrative Officer	Nazratul RAUDZAH Abd Rahman