ASIA'S UNIQUE FORESTS AND TREES:

CONSERVING DIVERSITY, BUILDING RESILIENCE, ENHANCING PRODUCTIVITY

20 MAY 2025 | **INTERNATIONAL SYMPOSIUM**

APFORGEN
ASIA PACIFIC FOREST GENETIC RESOURCES PROGRAMME

Alliance Bioversity & CIAT

CGIAR

APAFRI

National Institute of Forest Science
Republic of Korea

Jointly organized by the College of Forestry and Natural Resources of the University of the Philippines, the Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT), and the Asia Pacific Association of Forestry Research Institutions (APAFRI).

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LANSIGAN AUDITORIUM, COLLEGE OF FORESTRY AND NATURAL RESOURCES | UNIVERSITY OF THE PHILIPPINES LOS BAÑOS

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Welcome message from Dr. Marlo Mendoza

On behalf of the College of Forestry and Natural Resources (CFNR), University of the Philippines Los Baños, I warmly welcome all our distinguished guests and participants to the APFORGEN Annual Meeting and International Symposium entitled *"Asia's Unique Forests and Trees: Conserving Diversity, Building Resilience, Enhancing Productivity."*

This event is a special gathering of minds and hearts committed to advancing forest conservation and sustainable use of forest genetic resources. We are honored to co-organize this symposium with APFORGEN, the Alliance of Bioversity International and CIAT, and the Asia Pacific Association of Forestry Research Institutions (APAFRI), with generous support from the National Institute of Forest Science (NIFOS) of the Republic of Korea.

There is truly no better venue to hold this international symposium—celebrated as part of the International Day for Biodiversity—than here, nestled in the heart of the tropical forests and embraced by the majestic Mt. Makiling. As the 33rd ASEAN Heritage Park, the Mount Makiling Forest Reserve stands as a living learning laboratory, offering an ideal setting to reflect on Asia's rich forest biodiversity and the urgent need to strengthen ecosystem resilience.

We welcome you to UPLB CFNR, the premier forestry education institution in the Philippines, and we hope your stay will be both enriching and inspiring. May this event deepen your knowledge, spark new ideas, and foster meaningful connections with fellow participants—and with nature itself

Dr. Marlo Mendoza
Dean, College of Forestry and Natural Resources
University of the Philippines Los Baños

Welcome message from Prof. Zheng Yongqi

Distinguished delegates,

Renowned experts in forest genetic resources,

Colleagues from APFORGEN member countries and partners,

A very warm welcome to the 2025 APFORGEN Annual Meeting and International Symposium! It is a significant event to convene this gathering of national coordinators of the APFORGEN members, thought leaders, researchers, policymakers, and practitioners united by a shared commitment to conserving and sustainably managing forest genetic resources across the Asia-Pacific region.

On behalf of the APFORGEN Board, it is my privilege to welcome you to this important gathering of minds dedicated to preserving the genetic heritage of Asia-Pacific forests. Today, we celebrate the culmination of rigorous scientific inquiry, as reflected in our Abstract Compendium.

We will exchange new developments made by member countries in implementation of APFORGEN's strategy since the last meeting, and discuss about future activity plan. The international symposium will share the ideas and research achievements in Conserving Diversity, Building Resilience, Enhancing Productivity of Asia's unique Forests and Trees, reflecting the urgency of our mission in a rapidly changing world. As custodians of Earth's most biodiverse forests, we face unprecedented challenges—from deforestation and habitat fragmentation to climate-induced stressors. Yet, through collaboration and innovation, we hold the tools to safeguard these ecosystems for future generations.

The insights provided by our speakers will illuminate pathways to integrate genetic diversity into national strategies and global frameworks like the FAO's global action plan on forest genetic resources. The field experiences and data of our participants are invaluable—let us ensure every voice is heard in our discussions.

As we begin, I invite you to reflect on APFORGEN's core principles: Equity (ensuring Indigenous and local knowledge is prioritized), Science-based action, and Transboundary cooperation. Together, we will address pressing issues such as documenting diversity at gene, species and ecosystem levels, and conserving diversity as well as building resilience, enhancing productivity.

Let's expect exciting presentations and successful meetings.

Thank you!

Prof. Zheng Yongqi
Co-chair, Asia-Pacific Forest Genetic Resources Programme

Programme overview

9:00-9:30	Opening and welcome remarks
9:30-10:00	**Keynote 1:** Dr. Rekha R. Warrier, ICFRE-Institute of Forest Genetics and Tree Breeding, India
10:00-10:30	Refreshments and poster session
10:30-12:00	Parallel Sessions 1
	Session 1A: Documenting diversity: Genetic diversity
	Session 1B: Documenting diversity: Species and ecosystems
12:00-13:30	Lunch
13:30-14:00	**Keynote 2:** Prof. Emeritus Edwino S. Fernando, University of the Philippines
14:00-15:30	Parallel Sessions 2
	Session 2A: Conserving diversity
	Session 2B: Building resilience, enhancing productivity
15:30-16:00	Refreshments and poster session
16:00-16:30	**Keynote 3:** Dr. Riina Jalonen, Alliance of Bioversity International and CIAT
16:30-17:00	Closing

Keynote speaker: Dr. Rekha R. Warrier

Dr. Rekha R. Warrier, Scientist G and Head of the Chemistry and Bioprospecting Division at ICFRE-Institute of Forest Genetics and Tree Breeding, Coimbatore, and Co-ordinator, Environment Information, Awareness, Capacity Building and Livelihood Programme (EIACP) has over 25 years of forestry expertise. Leading tissue culture innovations, she has pioneered commercial propagation and secondary metabolite studies in medicinal plants. Her contributions include genetic improvement of species like teak, melia and bamboo, establishing seed production systems for different tropical species, and heading impactful research projects. She holds leadership roles in Asia Pacific Forest Genetic Resources Programme (APFORGEN) and International Society for Tropical Foresters (ISTF). She is a member of the IUCN SSC Western Ghats Plant Specialist Group and Seed Conservation Specialist Group. With significant experience in tropical ecosystems, she has handled numerous research projects, authored 70 research papers, and contributed to 15 books/chapters. Dr. Warrier's work spans stress physiology, forest genetic resources conservation, and cutting-edge biotechnologies, significantly advancing sustainable forestry and restoration initiatives.

Keynote speaker: Dr. Edwino S. Fernando

Dr. Edwino S. Fernando is Professor Emeritus in the Department of Forest Biological Sciences, University of the Philippines – Los Baños, specialising in plant taxonomy and plant biodiversity studies, plant genetic resources, and conservation biology. Professor Fernando has *Bachelor of Science* and *Master of Science* degrees in *Forestry* from the University of the Philippines – Los Baños, a *Master of Science* degree in *Plant Taxonomy* from the University of Reading, England, and a *Doctor of Philosophy* degree in *Botany* from the University of New South Wales in Sydney, Australia. He has published many scientific papers, including several on rare new species of Philippine forest plants, and four books on the *Forest Formations of the Philippines, Flowering Plants and Ferns of Mt Makiling, Forest Flora of Dinagat Island*, and *Ultramafic Flora of the Philippines*. He continues to undertake research on Philippine plant biodiversity and nickel hyperaccumulators on ultramafic soils. He has a keen interest and advocacy in documenting and protecting Philippine threatened plants and mainstreaming biodiversity conservation in extractive industries, including restoration of mined-out and degraded areas using native tree species.

Keynote speaker: Dr. Riina Jalonen

Dr. Riina Jalonen joined the Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT) in 2009. In her work, she develops knowledge, technical and institutional capacities for forest and landscape restoration, using interdisciplinary approaches combining ecology, genetics, development and gender studies. She provides technical support to South and Southeast Asian countries in the conservation and management of forest genetic diversity through the Asia Pacific Forest Genetic Resources Programme (APFORGEN). She has a versatile background with PhD in Forest Sciences, MA in Educational Leadership and Management, and BSc in Development Studies.

SESSION 1A:

Documenting diversity: Genetic diversity

Session 1A | Documenting diversity: Genetic diversity

10:30-10:45	**Genetic Diversity Restoration Strategies for the Endangered Subalpine Conifer *Taxus cuspidata* in the Republic of Korea** *Hyoin Lim, Forest Bioinformation Division, National Institute of Forest Science, Republic of Korea*
10:45-11:00	**Unlocking Nature's Code: Genetic Signatures of DNA Barcodes and Fingerprints for Conserving the Philippines' Threatened Forest Trees** *Lerma S.J. Maldia, University of the Philippines Los Baños, Philippines*
11:00-11:15	**Advancing Forest Conservation Through Genetic Research and DNA Technologies** *Ng K.K.S., Tnah L.H., Lee C.T., Ng C.H., Nurul-Farhanah Z., Nur-Nabilah A. & Lee S.L.* *Forest Research Institute Malaysia*
11:15-11:30	**An Amazon giant losing its habitat: Genetic and performance patterns of the Brazil nut tree in Peru, a socio-economically valuable keystone species with restoration potential living under threat** *Chiriboga-Arroyo, Fidel; Jansen, Merel; Bardales-Lozano, Ricardo; Guariguata, Manuel R., Blomberg, Maxime; Miedema, Jolijn ; Schaaf, Jiska; Zuidema, Pieter A.; Velásquez Ramírez, Manuel Gabriel; Atapaucar Sánchez, Nils; Martins, Karina; Brouwer, Rens; Corvera Gomringer, Ronald; Kettle, Chris J.* *Alliance of Bioversity International and CIAT*
11:30-11:45	**Morphological and Molecular Variability Studies in *Canarium strictum* Roxb** *Shanthi Arunachalam, ICFRE-Institute of Forest Genetics and Tree Breeding, India*
11:45-11:50	**Flash Talk: Development and Application of Microsatellite Markers for Genetic Diversity Assessment and Construction of a Core Collection of *Myrciaria dubia* (Kunth) McVaugh Germplasm from the Peruvian Amazon** *Stalin Juan Vasquez Guizado, National University of San Agustin de Arequipa, Peru*
11:50-12:00	*Discussion*

Abstracts

	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
1A	Oral Presentation	**GENETIC DIVERSITY RESTORATION STRATEGIES FOR THE ENDANGERED SUBALPINE CONIFER *TAXUS CUSPIDATA* IN THE REPUBLIC OF KOREA** *Lim Hyoin* Forest Bioinformation Division, National Institute of Forest Science, South Korea The Korea Forest Service designated seven endangered subalpine conifer species growing at elevations above 1,000 m as priority conservation targets in 2016. Among them, *Taxus cuspidata* exhibits low seedling recruitment and poor seed production in its natural habitat, hindering natural regeneration. This study aimed to develop conservation and restoration strategies by assessing the genetic diversity of 12 Korean *T. cuspidata* populations using 15 nuclear simple sequence repeat (nSSR) markers. The average expected heterozygosity (He) was 0.490. AMOVA showed that 6% of genetic variation was due to differences among populations. PCoA, UPGMA, and Bayesian clustering analyses revealed that the Korean *T. cuspidata* populations were divided into four genetic clusters. Therefore, we recommend selecting restoration materials by considering these four clusters when developing genetic diversity restoration strategies for *T. cuspidata*. A spatial genetic structure analysis was conducted to select restoration material for the degraded *T. cuspidata* population in Mt. Gariwangsan. The results suggested that individuals within this population exhibited genetic similarity when located within a 40 m radius. Thus, we propose a restoration strategy involving the collection of propagation material while maintaining a minimum 40 m spacing to conserve genetic diversity in the *T. cuspidata* population of Mt. Gariwangsan.
1A	Oral Presentation	**UNLOCKING NATURE'S CODE: GENETIC SIGNATURES OF DNA BARCODES AND FINGERPRINTS FOR CONSERVING THE PHILIPPINES' THREATENED FOREST TREES** *Lerma S.J. Maldia* University of the Philippines Los Baños, College of Forestry and Natural Resources, Department of Forest Biological Sciences, Philippines The Philippines, recognized as one of the world's 18 megadiverse countries, hosts approximately two-thirds of global biodiversity. However, this rich biological heritage faces critical threats, with over 70% of the original forest cover lost and a significant doubling of threatened plant species as highlighted by the Philippine Redlist for Plants (DENR DAO 2017-11). Several national legislative measures, including the Forestry Reform Code and the National Integrated Protected Areas System (NIPAS), outline the framework for biodiversity conservation efforts. Despite these frameworks, the application of molecular data for genetic conservation remains underutilized. Genetic and molecular data provide powerful tools for assessing genetic diversity, elucidating evolutionary relationships, and inferring long-term adaptive potential of populations and species over changing climate, which can be used to guide and facilitate conservation strategies for threatened native species. This presentation discusses the applications of molecular markers in species identification and evaluation of genetic diversity in threatened native tree species in the Philippines, highlighting their implications for genetic conservation and development of conservation guidelines. By integrating molecular insights into conservation strategies, this approach aims to mitigate biodiversity loss and enhance the sustainable management of forest resources in the Philippines. Recommendations are provided to optimize both in situ and ex situ conservation efforts, emphasizing the need for a collaborative and informed approach to protect the country's unique forest genetic resources.

	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
1A	Oral Presentation	**ADVANCING FOREST CONSERVATION THROUGH GENETIC RESEARCH AND DNA TECHNOLOGIES** *Ng K.K.S., Tnah L.H., Lee C.T., Ng C.H., Nurul-Farhanah Z., Nur-Nabilah A. & Lee S.L.* Forest Research Institute Malaysia, Malaysia At the Genetics Laboratory of the Forest Research Institute Malaysia (FRIM), we focus on supporting the sustainable management, use, and conservation of forest genetic resources through scientific research. Genetic diversity is essential for the adaptability and evolutionary potential of plant species, and a major aspect of our work is conserving plant genetic resources. Tropical forests pose challenges in developing effective conservation strategies, so we propose grouping tree species by life history traits as a practical approach. We have gathered genetic and ecological data for various species, enabling us to apply findings to others with similar traits. We have also developed microsatellite DNA markers for key plant species to assess genetic diversity, aiding in conservation strategies like *in situ* and *ex situ* conservation, germplasm collection, and plant material transfer. Additionally, we created a DNA-based timber tracking system to combat illegal logging and established the Malaysia Barcode of Plants (MyBARCODE), a DNA barcoding system for plant species identification. Our research emphasizes the importance of DNA technologies in conserving and sustainably using forest genetic resources for future generations.
1A	Oral Presentation	**AN AMAZON GIANT LOSING ITS HABITAT: GENETIC AND PERFORMANCE PATTERNS OF THE BRAZIL NUT TREE IN PERU, A SOCIO-ECONOMICALLY VALUABLE KEYSTONE SPECIES WITH RESTORATION POTENTIAL LIVING UNDER THREAT** *Chiriboga-Arroyo, Fidel; Jansen, Merel; Bardales-Lozano, Ricardo; Guariguata, Manuel R., Blomberg, Maxime; Miedema, Jolijn ; Schaaf, Jiska; Zuidema, Pieter A.; Velásquez Ramírez, Manuel Gabriel; Atapaucar Sánchez, Nils; Martins, Karina; Brouwer, Rens; Corvera Gomringer, Ronald; Kettle, Chris J.* Alliance of Bioversity International and CIAT The Amazon's accelerating degradation threatens resilience in keystone species like the Brazil nut tree (*Bertholletia excelsa*), a critical carbon sink and socio-economic resource. This study integrates genomic tools to assess how habitat loss impacts genetic diversity, gene flow, and early seedling performance. We analysed adult and seedling populations along a degradation gradient using microsatellites (fine-scale genetic structure, pollen flow, inbreeding) and SNP loci (multilocus heterozygosity [sMLH] vs. seedling performance in nurseries and restoration sites over 2.5 years). Key findings: Seedlings in degraded areas showed reduced genetic diversity and elevated inbreeding, correlating with habitat loss severity. Pollen dispersal was limited, constraining gene flow and effective population sizes. Individual genetic diversity of seedlings predicted improved nursery-stage height, underscoring its role in early vigour. Post-outplanting, environmental factors (soil quality, land-use history) outweighed genetic advantages in survival and growth. Seed weight and maternal lineage further shaped early growth. Implications: Degradation disrupts genetic connectivity, eroding genetic diversity, while restoration success depends on both genetic resources and site-specific conditions. Conservation must prioritize protecting natural gene flow and integrating diverse genetic stock into restoration to improve resilience against climate and anthropogenic pressures. This highlights genetic diversity's critical role in sustaining Amazonian keystone species' ecological and socio-economic functions.

	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
1A	Oral Presentation	**MORPHOLOGICAL AND MOLECULAR VARIABILITY STUDIES IN *CANARIUM STRICTUM* ROXB.** *Arunachalam Shanthi* ICFRE-Institute of Forest Genetics and Tree Breeding, India *Canarium strictum* Roxb is a non-timber forest produce tree species distributed in the Eastern and Western Ghats of India. Its resin is commercially referred as "Dammar" has medicinal as well as therapeutic use. Due to its overexploitation, the taxa have become an endangered species and, therefore, recalls for urgent attention to document diversity for its conservation. In this context a study was conducted on the diversity assessment and gender specific DNA marker development of *Canarium strictum* with a collaboration of Tamil Nadu Forest Department. In this study an extensive survey was carried out in the Western and Eastern Ghats of Tamil Nadu for identification of Candidate Plus trees (CPTs). Sixteen Candidate Plus Trees (CPTs) from Eastern Ghats and twenty six Candidate Plus Trees (CPTs) from Western Ghats were identified for its diversity. Fruit morphology, bark morphology, soil physico-chemical properties and DNA marker studies were carried out. The soil profile study indicated significant variation in the micro and macro nutrients of the Western and Eastern Ghats populations. Fruit morphology study in Eastern and Western Ghats were highly significant. Bark morphology study revealed peeled bark structure in males and smooth bark structure in females indicating these character could be used to identify male and female trees of *Canarium strictum* in the field. Molecular marker study revealed moderate degree genetic diversity estimated in Western and Eastern Ghats populations of *Canarium strictum*. The both populations were genetically distinct based on the genetic structure assessed using ISSR DNA marker. New microsatellite DNA markers were developed from transcriptome sequence of *Canarium strictum* and identified two putative loci viz, SSR primer (GATTTG)4 and SSRprimer (GAAAA)4, for gender discrimination in *Canarium strictum*. The generated baseline morphological and molecular data will be useful for in situ and ex situ conservation of the species.
1A	Flash Talk	**DEVELOPMENT AND APPLICATION OF MICROSATELLITE MARKERS FOR GENETIC DIVERSITY ASSESSMENT AND CONSTRUCTION OF A CORE COLLECTION OF *MYRCIARIA DUBIA* (KUNTH) MCVAUGH GERMPLASM FROM THE PERUVIAN AMAZON** *Stalin Juan Vasquez Guizado* National University of San Agustin de Arequipa, Peru The Amazonian shrub *Myrciaria dubia* (camu-camu) produces vitamin C-rich fruits of increasing commercial interest. Sustainable utilization requires assessing and protecting the genetic diversity of available germplasm. This study developed and applied microsatellite markers to assess genetic diversity and construct a core collection of *M. dubia* germplasm from the Peruvian Amazon. Sixteen polymorphic microsatellite loci were developed using an enrichment approach. A total of 336 genotypes from 43 germplasm bank accessions, originating from eight river basins, were evaluated using these markers. Genetic diversity parameters, including observed and expected heterozygosity, were calculated. Molecular variance (AMOVA) was analyzed to assess genetic variation within and among accessions and river basins.

	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
1A	Flash Talk	*Continues* **DEVELOPMENT AND APPLICATION OF MICROSATELLITE MARKERS FOR GENETIC DIVERSITY ASSESSMENT AND CONSTRUCTION OF A CORE COLLECTION OF *MYRCIARIA DUBIA* (KUNTH) MCVAUGH GERMPLASM FROM THE PERUVIAN AMAZON** Population structure was inferred using Bayesian clustering analysis. A core collection was constructed to maximize allelic richness. High genetic diversity was observed, with heterozygosity ranging from 0.468 to 0.644 (observed) and 0.684 to 0.817 (expected) at the river basin level. AMOVA indicated significant genetic variation within accessions (73–86%), compared to among accessions and river basins (14–27%). Bayesian clustering detected ten genetic clusters, with varying degrees of admixture across river basins, except for the genetically homogeneous Putumayo basin. A core collection of 84 plant genotypes (25% of the collection) was established, capturing 90.82% of total allelic diversity. These results have critical implications for *M. dubia* conservation and breeding, highlighting the need to promote genetic connectivity between populations while preserving unique genetic resources in isolated basins. Thorough genetic characterization remains essential for effective ex situ germplasm management.

SESSION 1B:

Documenting diversity: Species and Ecosystems

Session 1B

Documenting diversity: Species and Ecosystems

10:30-10:45	**Long Term Ecological Research Plots: Documenting Plant Diversity in Montane and Mossy Forests of Mount Makiling Forest Reserve ASEAN Heritage Park** *Leilani A. Castillo, University of the Philippines Los Baños, Philippines*
10:45-11:00	**Ecosystem Condition and Extent Analysis of the Pantabangan-Carranglan Watershed Forest Reserve** *Jess Riel R. Terbio, University of the Philippines Los Baños, Philippines*
11:00-11:15	**Beyond the Surface: Biodiversity and Carbon Stock Potential of Uacon Lake, Candelaria, Zambales, Philippines** *Kyle Adrian B. Cancino, University of the Philippines Los Baños, Philippines*
11:15-11:30	**Beyond the National Conservation Review (NCR) (1997) in Sri Lanka, Designing an optimum protected areas system for Sri Lanka's Natural Forests** *Maddagama Arachchige Thulani Ruchika Kularatne, Department of Forest Conservation, Sri Lanka*
11:30-11:45	**Biodiversity and Regeneration Dynamics in Dry Peninsular Sal Forests: An Ecological Assessment** *Mishra Shambhu Nath, ICFRE-Institute of Forest Productivity, Ranchi, India*
11:45-11:50	**Flash Talk: Quantitative Study of the Ethnobotanical Medicinal Plant Resources of Zanskar Valley, Ladakh, India** *Ankush Moran, ICFRE-Himalayan Forest Research Institute, Shimla, India*
11:50-11:55	**Flash Talk: High-Altitude Plant Diversity: A Comparative Study on Structure and Composition in Subalpine Zones of Kinnaur, Himachal Pradesh-NW Himalaya** *Monika Chauhan, ICFRE-Himalayan Forest Research Institute, Shimla, India*
11:55-12:00	**Flash Talk: Documentation of the Diversity, Endemism and Ecological Significance of Myrsinaceae Family in the Western Ghats of Kerala State, India** *M. Bheemalingappa, KSCSTE-Kerala Forest Research Institute, India*

Abstracts

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
1B	Oral Presentation	**LONG TERM ECOLOGICAL RESEARCH PLOTS: DOCUMENTING PLANT DIVERSITY IN MONTANE AND MOSSY FORESTS OF MOUNT MAKILING FOREST RESERVE ASEAN HERITAGE PARK** *Castillo, Leilani A.* University of the Philippines Los Baños, Philippines The Long Term Ecological Research (LTER) plots are designed to document, monitor and understand the ecosystem changes and impacts of climate change across diverse forest types. For this purpose, LTER plots were established in the Molawin-Dampalit Watershed (montane) and Sipit Watershed (mossy) of the Mount Makiling Forest Reserve ASEAN Heritage Park. The paper presents the results of the growth dynamics of both forest types based on its 2014 and 2019 measurements. All trees with a minimum diameter at breast height of 10.0 cm were inventoried. Results showed a decline in floristic composition, with a 2% decrease in the montane forest and 3% decrease in the mossy forest. Meanwhile, the Shannon diversity index (H') showed a 0.1 minimal change with no change in evenness value of the montane forest while the mossy forest showed an increase of 0.10 and 0.13 in H' values and evenness, respectively. These minor fluctuations potentially brought by natural calamities and anthropogenic factors indicate resiliency in both forest types in terms of biodiversity and floral composition despite typhoon impacts. On-going re-measurements in both LTER plots are being done and is crucial for the continuous documentation and monitoring of the long-term climate change effects on these vital ecosystems.
1B	Oral Presentation	**ECOSYSTEM CONDITION AND EXTENT ANALYSIS OF THE PANTABANGAN-CARRANGLAN WATERSHED FOREST RESERVE** *Terbio, Jess Riel, R.* IRNR-CFNR-UPLB, Philippines The Pantabangan-Carranglan Watershed Forest Reserve (PCWFR), a 96,475.06-hectare critical watershed in northern Philippines, provides essential ecosystem services, including carbon sequestration, soil erosion control, recreation, and water for domestic use, agriculture and hydropower generation. However, its ability to sustain these services depends on its extent and overall condition. Hence, this study conducted a holistic assessment of the ecosystem extent and condition of PCWFR. To assess the ecosystem opening and closing extent of PCWFR, land use and land cover maps from NAMRIA for years 2015 and 2020 were processed. Results showed a 27% decline (8,205 ha) in brush/shrublands, mainly converting into grasslands (+7,275 ha). Closed forests had a net loss of 507 ha, while open forests expanded by 508 ha. These shifts impact on ecosystem stability, biodiversity, and sustainability. Meanwhile, ecosystem condition was evaluated using SEEA-EA Ecosystem Condition Typology. Abiotic indicators included the Normalized Difference Water Index (NDWI) and Soil Organic Carbon (SOC), while biotic indicators used Leaf Area Index (LAI) and Normalized Difference Vegetation Index (NDVI). Lastly, forest connectivity was assessed at the landscape level. The overall ecosystem condition of PCWFR improved from 0.24 in 2015 to 0.27 in 2020, with better vegetation health and water availability as indicated by rising NDVI and NDWI values. However, declines in forest connectivity and LAI suggest ongoing pressures on forest integrity. These trends provide crucial insights for a research-driven decision-making to support the sustainable management of PCWFR.

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
1B	Oral Presentation	**BEYOND THE SURFACE: BIODIVERSITY AND CARBON STOCK POTENTIAL OF UACON LAKE, CANDELARIA, ZAMBALES, PHILIPPINES** *Cancino, Kyle Adrian, B.* College of Forestry and Natural Resources, UPLB, Philippines Uacon Lake, an estuarine lake in Candelaria, Zambales, Philippines, is a critical resource that supports mangrove ecosystem. Despite its significance, comprehensive data on its biodiversity and carbon stock remains limited. This study assessed the lake's floral and faunal composition, stand characteristics, carbon stock capacity, and conservational status to guide conservation and sustainable management efforts. A belt transect method, employing 38 quadrats (10m x 10m) was used for floral diversity and carbon stock assessment, while faunal diversity was documented through visual and auditory surveys, complemented by mist netting and live trapping. Results identified 31 floral species, primarily mangroves, with *Rhizophora apiculata* Blume (IV=90.375) as the most dominant species. Floral diversity was low (H'=2.28). The lake's mangrove biomass reached 1,448.32 Mg, sequestering 2,505.18 Mg of CO_2 and storing 683.23 Mg of carbon. One species was classified as Vulnerable, and another as Near Threatened. The faunal survey recorded 42 terrestrial faunal species, including 37 birds, with 49% endemic to the Philippines. Faunal diversity index was high (H°=3.104). Evidence of mangrove cutting, burning, waste accumulation, and human encroachment poses a threat to the lake's ecosystem. Targeted habitat protection/restoration and sustainable resource management strategies are crucial to protecting Uacon Lake's biodiversity and ecological functions.
1B	Oral Presentation	**BEYOND THE NATIONAL CONSERVATION REVIEW (NCR) (1997) IN SRI LANKA, DESIGNING AN OPTIMUM PROTECTED AREAS SYSTEM FOR SRI LANKA'S NATURAL FORESTS** *Maddagama Arachchige Thulani Ruchika Kularatne* Department of Forest Conservation, Sri Lanka Sri Lanka comprises high biodiversity and endemism. National Forestry sector Master Plan in 1986 was criticized due to failure to address the conservation aspects properly. It has been redeveloped in 1995 with the inclusion of conservation aspects. Parallel to that NCR is carried out to define a national system for conservation of forests to ensure the protection of forests for biodiversity, soil and hydrology. The forest surveys are conducted all natural forests of 200 hectares or more except the north and east provinces in the country due to ongoing activities of the LTTE, the Tamil separatist movement. In this study, a total of 204 forests were surveyed for biodiversity and 281 forests were assessed for the importance in soil and water conservation. This is a very comprehensive study that attempts to provide a basis for system planning. Assessments reported of 1,153 species of woody plants and 410 species of species of selected animal groups. Number of 85 forests out of 281 surveyed had identified as extremely important for soil and water conservation, specially, forests in south central massif for protecting the headwaters of the major rivers originate from there. After the LTTE, the Tamil separatist activities are over, north and east became more focused on improved facilitation and developments. Therefore, It is required a detail comprehensive conservation study especially in north and east provinces to ensure the sustainability. As well as, there is rapid demand for the lands and resources with the development needs in the country. Reevaluation of inclusion of prioritized forests into the protection network is essential.

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
1B	Oral Presentation	**BIODIVERSITY AND REGENERATION DYNAMICS IN DRY PENINSULAR SAL FORESTS: AN ECOLOGICAL ASSESSMENT** *Mishra Shambhu Nath* Indian Council of Forestry Research And Education - Institute of Forest Productivity, India This study assesses forest regeneration and biodiversity dynamics within the Dry Peninsular Sal Forest of Harbul, Bundu, Ranchi, highlighting critical ecological trends and conservation priorities. *Shorea robusta* (Sal), the dominant species, exhibited a survival rate of 25.40%, raising concerns about long-term forest stability. Biodiversity assessments across 31 transects recorded 58 tree species from 32 families, with key contributors including *Shorea robusta*, *Diospyros melanoxylon*, and *Lagerstroemia parviflora*. Temporal analysis using LANDSAT imagery revealed a fluctuating forest cover trend, declining from 511.01 km^2 in 2012 to 417.90 km^2 in 2020, before recovering to 469.27 km^2 in 2024, indicating ongoing anthropogenic pressures and climate variability. A 25-year climatic dataset further revealed rising temperatures and erratic rainfall patterns, exacerbating regeneration challenges. These findings underscore the interdependence of species survival, biodiversity resilience, and environmental stressors, emphasizing the urgent need for targeted conservation strategies to sustain ecosystem integrity amid climate change.
1B	Flash Talk	**QUANTITATIVE STUDY OF THE ETHNOBOTANICAL MEDICINAL PLANT RESOURCES OF ZANSKAR VALLEY, LADAKH (INDIA)** *Moran, Ankush* Himalayan Forest Research Institute, India The urgent need for ethnobotanical studies arises from the critical role they play in preserving indigenous knowledge and native biodiversity, which are crucial for sustainable development and the conservation of medicinal plants in a rapidly changing environment. This study, explores the ethnomedicinal knowledge of indigenous communities in the remote Zanskar Valley of Ladakh, specifically examining the medicinal plant species used in their traditional healing practices. In total, 203 informants took part in the study, comprising 66.50% females and 33.50% males, representing a range of age groups and educational background. The research identifies 55 medicinal plant species, belonging to 50 genera and 28 families, with herbs (78.18%) being the most common growth form. Leaves (43.64%) formed the most commonly utilized plant part, followed by entire plants (36.36%) and roots (18.18%). A significant variation in plant knowledge was observed between key and general informants, with key informants demonstrating better knowledge. The use value (UV), relative frequency citation (RFC), and relative importance index (RI) were calculated to assess the cultural significance of plants, revealing *Corydalis govaniana* and *Carum carvi* as most valued species. Informant consensus factor (ICF) and fidelity level (FL) indices highlighted the popularity of certain plants for specific ailments, such as *Podophyllum hexandrum* for menstrual irregularity and *Cicer microphyllum* for skin disorders. The study shows that, regardless of education levels, both young and old generations possess a strong knowledge of medicinal plants, with a clear preference for traditional healing practices over modern medicine.

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
1B	Flash Talk	**HIGH-ALTITUDE PLANT DIVERSITY: A COMPARATIVE STUDY ON STRUCTURE AND COMPOSITION IN SUBALPINE ZONES OF KINNAUR, HIMACHAL PRADESH-NW HIMALAYA** *Chauhan, Monika* ICFRE-Himalayan Forest Research Institute Shimla, India Subalpine zones, sandwiched between treeless alpine regions and temperate forests, provide crucial ecosystem services for climate regulation, fauna, and local tribal communities. However, due to harsh environmental conditions and remote locations, their structure and composition remain understudied in the Himalayas. Hence, this study was conducted to examine tree and shrub diversity in two subalpine sites (Rakchham-Chhitkul and Kalpa) located in Kinnaur district, Himachal Pradesh. Total 86 plots along 2800–3800 amsl, across various slopes and aspects, were surveyed. Results recorded 59 species (21 trees, 48 shrubs) in R-C and 48 species (11 trees, 37 shrubs) in Kalpa. 14 tree communities (10 in R-C, 4 in Kalpa) and 5 subalpine shrub communities (3 in R-C, 2 in Kalpa) were identified based on IVI and relative density respectively. Tree density ranged from 150 Ind ha^{-1} (*Betula utilis - Salix alba* mixed community) to 510 Ind ha^{-1} (*Betula utilis* community), with total basal area (TBA) lowest as 11.93 m^2 ha^{-1} (*Pinus wallichiana - Prunus cornuta*) and highest as 41.11 m^2 ha^{-1} (*Betula utilis - Abies spectabilis*). In Kalpa, tree density ranged from 382 Ind ha^{-1} (*Cedrus deodara*) to 440 Ind ha^{-1} (*Pinus wallichiana*), with TBA between 37.69 m^2 ha^{-1} (*Cedrus deodara - Pinus wallichiana* mixed) and 47.02 m^2 ha^{-1} (*Cedrus deodara*). It was observed that species richness was higher in moist habitats and northern aspect-dominated sites in R-C, which support evergreen coniferous and broadleaved mixed forests. In contrast, dry habitats and eastern aspects in Kalpa showed lower species richness, supporting only evergreen coniferous forests. The presence of subalpine shrub communities further reinforces the evidence of fragmented treelines in the region. Hence, it can be concluded that subalpine forest composition in Kinnaur is shaped by altitude, aspect, and habitats, leading to distinct plant communities.
1B	Flash Talk	**DOCUMENTATION OF THE DIVERSITY, ENDEMISM AND ECOLOGICAL SIGNIFICANCE OF MYRSINACEAE FAMILY IN THE WESTERN GHATS OF KERALA STATE INDIA** *M. Bheemalingappa* KSCSTE-Kerala Forest Research Institute (KFRI) Peechi, Thrissur Kerala India, India Myrsinaceae, a subfamily of Primulaceae under the order Ericales (APG IV-2016), is widely distributed across temperate and tropical regions, including Europe, Siberia, Japan, Mexico, and South Africa. Generally, the family comprises mesophytic trees, shrubs, and climbers, with several species holding economic and medicinal value. *Ardisia humilis* and *Ardisia blatteri*, for instance, are traditionally used to treat ailments such as diarrhea and rheumatism due to their bioactive compounds, including alkaloids and flavonoids. This study provides a comprehensive taxonomic assessment of Myrsinaceae in the Western Ghats of Kerala, a globally recognized biodiversity hotspot. Based on extensive field surveys and secondary data, we identified 29 species under six genera, with *Ardisia* emerging as the most species-rich genus, followed by *Myrsine* and *Embelia*. Notable endemics include *Antistrophe glabra*, *Antistrophe serratifolia*, *Ardisia amplexicaulis*, *Ardisia blatteri*, *Ardisia nayarii*, *Ardisia rhomboidea*, *Ardisia sonchifolia*, *Ardisia stonei*, *Embelia adnate*, and *Embelia gardneriana*. This study highlights the significance of Myrsinaceae in regional biodiversity and conservation efforts, emphasizing the need for continued taxonomic exploration to safeguard these ecologically and economically valuable species.

SESSION 2A:

Conserving diversity

Session 2A | **Conserving diversity**

14:00-14:15	**Ex-Situ Conservation of *Litsea glutinosa*: An Endangered Tree of North-West Himalayas** *Gopal Ram , North Eastern Hill University, India*
14:15-14:30	**Reintroducing the Critically Endangered *Polyspora dasanayakei* and Restoring the Associated Habitat** *S. H. Bandumala, Department of Forest Conservation, Sri Lanka*
14:30-14:45	**Conservation and Utilization of Forest Genetics in the Era of Restoration in Indonesia: Forest Tree Seed Supply System** Vivi Yuskianti, Dede Sudrajat, National Research and Innovation Agency, Indonesia
14:45-15:00	**Securing the Future of Forest Genetic Resources: Strategies for Documentation, Conservation, and Utilization** *Vijay Manish Kumar, ICFRE-Tropical Forest Research Institute, Jabalpur, India*
15:00-15:15	**Conservation and Restoration of the Critically Endangered *Madhuca insignis* in the Southwestern Ghats of India** *Geeta Joshi, Anurag Dhyani, Arunkumar A.N., Indian Council of Forestry Research and Education, India*
15:15-15:30	*Discussion*

Abstracts

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
2A	Oral Presentation	**EX-SITU CONSERVATION OF *LITSEA GLUTINOSA*: AN ENDANGERED TREE OF NORTH-WEST HIMALAYAS** *Gopal Ram* North Eastern Hill University, Tura Campus, Tura, Meghalaya-794002, India *Litsea glutinosa* (Lour) C.B. Robinson is a semi-evergreen, multi-purpose, drought-resistant tree of Lauraceae family. It is found in many parts of Asia, including Bhutan, China, Nepal, Myanmar, the Philippines, Thailand, and Vietnam. The IUCN has classified the species under endangered category. Excessive removal of species from natural populations occurred at an alarming rate, thus conservation measures were devised to conserve the species, and species propagation was accomplished using seeds, air-layering, juvenile branch cuttings, and root cuttings via macro-propagation procedures. Seeds were used to propagate species, and 30.04 percent germination was recorded. Propagation by air-layering callus was developed; however rooting was not formed, whereas propagation through juvenile shoot cutting resulted in 43% rooting. Poor seed setting, poor germination percentage, sterility and rooted problems in branch cuttings necessitated propagation by macro-proliferation. Macro-proliferation approach generated 35-50 plants from a single root cutting (thong), and it is a cost-efficient and novel technique of propagation.
2A	Oral Presentation	**REINTRODUCING THE CRITICALLY ENDANGERED *POLYSPORA DASANAYAKEI* AND RESTORING THE ASSOCIATED HABITAT** *S. H. Bandumala* Department of Forest Conservation, Sri Lanka *Polyspora dasanayakei*, a critically endangered tree species endemic to Sri Lanka, faces imminent extinction due to habitat loss, low population density, and limited natural regeneration. This study focuses on the conservation and reintroduction of *P. dasanayakei* through a multi-faceted approach involving seed collection, propagation, and habitat restoration. Seeds from the last remaining wild tree were germinated and propagated using advanced tissue culture techniques, ensuring genetic fidelity and enhancing the survival rate of seedlings. A total of four viable seedlings have been successfully cultivated, marking a significant step toward species recovery. Additionally, the associated habitat, degraded by deforestation and invasive species, is being restored through targeted reforestation and soil improvement practices. Community engagement and awareness programs are integrated to ensure the long-term success of conservation efforts. This initiative provides a replicable model for conserving critically endangered plant species, contributing to biodiversity conservation and ecosystem restoration in Sri Lanka.

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
2A	Oral Presentation	**CONSERVATION AND UTILIZATION OF FOREST GENETICS IN THE ERA OF RESTORATION IN INDONESIA: FOREST TREE SEED SUPPLY SYSTEM** *Vivi Yuskianti, Dede Sudrajat* National Research and Innovation Agency of the Republic of Indonesia, Indonesia As one of the countries with the highest biodiversity in the world, Indonesia is experiencing deforestation and land degradation which has an impact on the decline in biodiversity and also threats to the environment. To address this, Indonesia has launched various programs, one of which is a commitment to rehabilitate 12 million hectares of degraded land and forests and restore 2 million hectares of peatlands by 2030 as part of the Nationally Determined Contribution (NDC), as well as other efforts such as the presidential decree to rehabilitate 600,000 ha of degraded mangroves. To support these planting programs, the provision of millions of quality seeds along with the conservation and utilization of forest genetic resources of various tree species is important. Therefore, this presentation will discuss the conservation and utilization of forest genetic resources in providing quality tree seeds for restoration programs in Indonesia. Various facts and challenges faced will also be discussed in this presentation.
2A	Oral Presentation	**SECURING THE FUTURE OF FOREST GENETIC RESOURCES: STRATEGIES FOR DOCUMENTATION, CONSERVATION, AND UTILIZATION** *Vijay Manish Kumar* ICFRE-Tropical Forest Research Institute, Jabalpur, India Forest Genetic Resources (FGR) are a vital component of biodiversity, serving as the genetic base for tree improvement through the development of improved varieties, clones, and hybrids. Unlike agricultural species, FGR germplasm is often scattered or restricted to specific locations, making conservation challenging. India currently lacks a dedicated custodian for FGR conservation, emphasizing the need for systematic documentation, collection, and preservation. To address this, the Indian Council of Forestry Research and Education (ICFRE), through its nine institutes, launched a 10-year program (2018–2028) under CAMPA, MoEF&CC, Government of India funding. The initiative focuses on documenting, collecting, characterizing, and conserving priority FGR species. Key efforts include distribution mapping, seed source identification, and seed bank conservation. Since 2020, ICFRE-Tropical Forest Research Institute (TFRI), Jabalpur, has identified 65 priority species, primarily Rare, Endangered, and Threatened (RET) species of central India. Over 300 seed germplasm accessions of 35 orthodox species have been preserved in an ex situ gene bank, while 10 species are conserved in in situ and field gene banks. This initiative strengthens conservation efforts to mitigate climate change impacts and ensure the long-term viability of FGR, integrating scientific advancements with sustainable forestry strategies to secure biodiversity for future generations.

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
2A	Oral Presentation	**CONSERVATION AND RESTORATION OF THE CRITICALLY ENDANGERED *MADHUCA INSIGNIS* IN THE SOUTH WESTERN GHATS OF INDIA** *Geeta Joshi, Anurag Dhyani, Arunkumar A.N.* Indian Council of Forestry Research and Education, India *Madhuca insignis*, an evergreen tree species, is critically endangered and endemic to South Western Ghats of India. Once declared extinct, after a gap of 120 years, it was rediscovered in 2004 in the Dakshina Kannada district of Karnataka. The species remains under severe threat due to limited population size and extremely low regeneration. In a survey, only 25 individual trees, 15 in Kaup, Udupi, and 10 in Nadoli, Mangalore, could be located, with three fruit-bearing trees in Kaup and four in Nadoli. Seeds from Kaup were larger in size as compared to those from Nadoli. As seeds are recalcitrant, seed biology presents a major challenge for conservation. Seeds stored at 15°C with moisture contents of 20.77% and 6.38% had 15% and 55% viability, respectively, by 75th day, and complete loss of viability by 90th day. To support ex-situ conservation, 300 seeds were sown in nursery, seeds germinated within 15 to 20 days. 100 saplings were restocked in their natural habitat at Kesarukonda, Karnataka. After five years, 60% of the seedlings survived, with 50–60 cm height. Our research enabled its categorization as Critically Endangered under the IUCN Red List Criterion D, which emphasizes that urgent conservation measures are imperative.

SESSION 2B:

Building resilience, enhancing productivity

Session 2B | Building resilience, enhancing productivity

14:00-14:15	**The Identification of Sustainable Intensification Options in Silvopastoral Farming Systems in Northern Laos** *Simone Vongkhamho, Forest Research Centre, National Agriculture and Forestry Research Institute*
14:15-14:30	**Integrating Calliandra Cultivation into Secondary Forests for Sustainable Wood Pellet and Livestock Feed Production in East Kalimantan** Titiek Setyawati, National Research and Innovation Agency, Indonesia
14:30-14:45	**A Blockchain-based Tracking of Origin and Managing Variety Rights in the Seeds/seedlings** Supply Chain *Zheng Yongqi, National Center for Forestry and Grassland Genetic Resources, Chinese Academy of Forestry, China*
14:45-15:00	**MyFarmTrees: Digital Innovation for Empowering Community-Led Forest Landscape Restoration** *Fidel Chiriboga-Arroyo, Anton Eitzinger, Marius Ekue, Francis Oduor, Christian Feil, Riina Jalonen, Nadia Guettou Djurfeldt, Barbara Vinceti, Francesca Grazioli, Smitha Krishnan, Florian Doebler, Simeon Max, Chris Kettle, Alliance of Bioversity International and CIAT*
15:00-15:15	**Integrating Participatory Mangrove Rehabilitation to Strengthen Socio-Ecological Resilience in Teluk Lengung's Degraded and Polluted Coastal Areas, Indonesia** *Alawy Fauzan, Serindit Philosophy Centre, Indonesia*
15:15-15:20	**Flash Talk: Genomic Selection for Fast-growing Teak Genotypes with Enhanced Heartwood Content** *Maheswari Patturaj, ICFRE-Institute of Forest Genetics and Tree Breeding, India*
15:20-15:25	**Flash Talk: Woody Species diversity, management and socioeconomic importance of Agroforestry practices** *Achamyeleh Anteneh Kassahun, University of Gondar, Ethiopia*

Abstracts

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
2B	Oral Presentation	**THE IDENTIFICATION OF SUSTAINABLE INTENSIFICATION OPTIONS IN SILVOPASTORAL FARMING SYSTEMS IN NORTHERN LAOS** *Vongkhamho, Simone* Forest Research Centre, National Agriculture and Forestry Research Institute, Lao PDR This study investigates sustainable intensification options for beef cattle production in northern Laos through the adoption of silvopastoral farming systems. Laos possesses significant natural grassland resources, and government policy aims to increase cattle production. However, current expansion practices driven by fallow land conversion are unsustainable and lead to deforestation. Silvopastoral systems, integrating trees with pastures, offer a potential solution. This research conducted with 72 experienced farmers in Phonxay and Nonghet districts identified five existing pasture management practices: rotational free grazing, integrated trees with rotational grazing, mixed free-ranging and grazing, free grazing, and cut and carry. Additionally, workshops revealed common challenges faced by farmers, including seasonal feed shortages, cattle diseases, soil erosion, and limited labor and capital. To address these challenges, researchers propose a multi-pronged strategy: rotational grazing for improved forage, integrating trees for shade, shelter, and supplementary feed, planting drought-resistant grasses and fodder trees alongside silage production, developing water sources, and knowledge sharing through training programs. Financial incentives can further encourage adoption. District-specific recommendations include establishing silvopastoral demonstration plots and promoting specific practices based on local needs. This research offers a roadmap for sustainable beef cattle production in northern Laos. By integrating silvopastoral systems and addressing farmer challenges, this approach can balance economic development with environmental protection. Further research on optimal tree density and species selection can further refine these practices for long-term success.
2B	Oral Presentation	**INTEGRATING *CALLIANDRA* CULTIVATION INTO SECONDARY FORESTS FOR SUSTAINABLE WOOD PELLET AND LIVESTOCK FEED PRODUCTION IN EAST KALIMANTAN** *Setyawati, Titiek* National Research and Innovation Agency, Indonesia Enhancing forest productivity while maintaining ecological balance is a key challenge in sustainable land use. This study explores the cultivation of *Calliandra calothyrsus* in secondary forests of East Kalimantan for wood pellet and livestock feed production. The species was selected for its high calorific value and ability to regenerate through the coppice system, allowing for continuous harvesting every 6–7 months over a 15-year cycle. To align with PEFC certification requirements, which prohibit forest conversion, *Calliandra* is planted under existing forest canopies or in naturally open spaces. Limited selective tree cutting is conducted to ensure sufficient light penetration while preserving biodiversity. Preliminary trials indicate that *Calliandra* can thrive under 40–60% canopy shade without fertilization, making it a viable option for integrating sustainable forestry and biomass production. This approach reduces emissions by preventing large-scale deforestation, supporting Indonesia's FOLU Net Sink 2030 target. Furthermore, maintaining forest cover ensures carbon sequestration and protects biodiversity while providing economic benefits through sustainable biomass production. The study demonstrates that integrating *Calliandra* cultivation within forest ecosystems can enhance land productivity, promote sustainable wood pellet supply, and contribute to climate change mitigation.

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
2B	Oral Presentation	**A BLOCKCHAIN-BASED TRACKING OF ORIGIN AND MANAGING VARIETY RIGHTS IN THE SEEDS/SEEDLINGS SUPPLY CHAIN** *Zheng Yongqi* National Center for Forestry and Grassland Genetic Resources, Chinese Academy of Forestry, China With rapid economic and social development, the commercial market of plant seeds/seedlings is extensively appearing, leading to increasing demands for tracking of the origins of seeds or seedlings and for effective controlling of plant variety rights in the (PVR) supply chains. We employed the concept and technologies of blockchain to develop a system of tracking the origins of seeds and seedlings in the supply chain, the system is decentralized database management, it consists of 3 types of interfaces, a mobile APP, a Website and a micro program of WeChat, which is the most popular mobile APP in China. Databases of description data of seeds and seedlings were established and readily accessible by the tracking APP, all transactions of seeds/seedlings in the supply chain were recorded using the distributed data storage and encryption technologies. The description data of the seeds and seedlings traded in the supply chain are also uploaded to the blockchain as long as an transaction is completed. Another function of the tracking system is that it enables PVR holders to have entire power of controlling their PVR by issuing digital authorization to the downstream users. The system substantively enhances the quality of traded seeds and seedlings and provide an ultimate solution to PVR enforcement.
2B	Oral Presentation	**MYFARMTREES: DIGITAL INNOVATION FOR EMPOWERING COMMUNITY-LED FOREST LANDSCAPE RESTORATION** *Chiriboga-Arroyo, Fidel; Eitzinger, Anton; Ekue, Marius; Oduor, Francis; Feil, Christian; Jalonen, Riina; Guettou Djurfeldt, Nadia; Vinceti, Barbara; Grazioli, Francesca; Krishnan, Smitha; Doebler, Florian; Max, Simeon; Kettle, Chris* Alliance of Bioversity International and CIAT MyFarmTrees is a digital platform tackling major barriers to scaling forest landscape restoration, including limited involvement of local communities in seed systems, significant gaps in native tree seed supply, urgent needs for capacity building and investment in seed and nursery systems, untapped entrepreneurial opportunities for farmer-led nurseries, and persistent social inequalities in access to land, technology, and restoration benefits. By equipping communities with mobile apps for seed collection, nursery management, and tree monitoring, and by providing digital economic incentives, MyFarmTrees empowers local actors to drive restoration, diversify livelihoods, foster entrepreneurship, improve nutrition, recover biodiversity, sequester carbon, and promote social inclusion. To date, pilots in Kenya and Cameroon have benefited over 5,600 farmers and nearly 30,000 app users, supported restoration in more than 2,600 hectares, and distributed over 220,000 seedlings, with substantial digital payments supporting ongoing engagement. Building on these results, MyFarmTrees is now scaling across Africa, Asia, and Latin America, demonstrating a replicable model for community-driven, technology-enabled landscape restoration with lasting socio-environmental co-benefits.

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
2B	Oral Presentation	**INTEGRATING PARTICIPATORY MANGROVE REHABILITATION TO STRENGTHEN SOCIO-ECOLOGICAL RESILIENCE IN TELUK LENGUNG'S DEGRADED AND POLLUTED COASTAL AREAS, INDONESIA** *Alawy, Fauzan* Serindit Philosophy Centre, Indonesia Teluk Lengung, Batam, Indonesia, is experiencing severe coastal degradation and pollution due to rapid industrial runoff, nearby landfills, and sedimentation from unregulated development. Since 1997, these pressures have led to habitat loss, declining water quality, and reduced coastal resilience, threatening both biodiversity and local livelihoods. Between August 2024 and February 2025, a restoration initiative was carried out to establish a mangrove green belt aimed at protecting this coastal area with active participation from the local community. This effort integrated community involvement in site zonation, ecological assessments, and the application of planting methods aligned with the natural landscape and local knowledge, to support traditional fishing routes and livelihoods. This rehabilitation concerning in using native and associated mangrove species planted included *Bruguiera gymnorrhiza*, *Bruguiera cylindrica*, *Ceriops tagal*, *Rhizophora apiculata*, *Rhizophora mucronata*, *Xylocarpus granatum*, *Calophyllum inophyllum*, and *Dillenia* sp., focusing on high-impact zones affected by runoff and sedimentation. A February 2025 survival assessment sampled 3% of 12,000 seedlings, recording 256 live and 169 dead—reflecting a 60.2% survival rate, with mortality largely caused by algal blooms, seasonal runoff, and waste accumulation, highlighting the complex challenges of restoring degraded and polluted coastal ecosystems through community-driven efforts.
2B	Flash Talk	**GENOMIC SELECTION FOR FAST-GROWING TEAK GENOTYPES WITH ENHANCED HEARTWOOD CONTENT** *Maheswari Patturaj, Adwaith Manikantan, Sivakumar Veerasamy, Ani A. Elias, and Yasodha Ramasamy* ICFRE-Institute of Forest Genetics and Tree Breeding, Coimbatore, India Teak (*Tectona grandis*) is a commercially valuable timber species that requires genetic and genomic advancements to enhance its productivity. As global wood demand rises, particularly in response to sustainability commitments, there is a societal need to produce high-quality timber with shorter rotation cycles. A smart plantation of teak can be established using genetically improved propagules, tissue culture, and seed orchards. The improved plantation ensures both higher economic returns and earlier market availability of quality timber. The first step in this process is producing superior propagules by evaluating the genetic composition of parent trees. This approach to tropical timber tree improvement significantly reduces breeding time, expediting the establishment of elite teak plantations. Genomic selection (GS) plays a crucial role in improving teak by identifying genotypes with higher heartwood formation rates and early heartwood production. We established a tree improvement pipeline to develop short-rotation, high-heartwood-content teak genotypes for smart plantations. A diverse set of teak clones representing India's genetic diversity was studied to assess heartwood formation rates. With whole-genome sequencing, a single nucleotide polymorphism (SNP) dataset was obtained, enabling the identification of key genetic markers. Features such as heartwood length, earliest production time, and sapwood-to-heartwood ratio were evaluated. Phenotypic evaluations identified candidate genotypes that initiate heartwood formation earlier, as well as those that begin later and develop at a quicker rate. Details on use of SNP markers for GS in teak will be discussed.

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
2B	Flash Talk	**WOODY SPECIES DIVERSITY, MANAGEMENT AND SOCIOECONOMIC IMPORTANCE OF AGROFORESTRY PRACTICES IN THE UNEXPLORED AREAS OF NORTH-WESTERN ETHIOPIA** *Kassahun, Achamyeleh Anteneh* University of Gondar, Ethiopia Agroforestry is a common land use practice which integrating crops, trees, and livestock on farmland. However, in the Quara district, of Ethiopia agroforestry practices remain unexplored and poorly documented as compared to the country's southern parts. This study aims to address this by assessing the diversity of woody species, tree management, and the socio-economic importance of woody plant species in the highlands of Quara district. Two representatives Kebeles were selected for the study and households were sampled using simple random sampling, comprising 5% of the total households in the selected Kebeles. Structured questionnaires were used for household interviews, and the data were analyzed using frequency, mean, and percentage. Additionally, vegetation inventories were conducted in agroforestry, with different plot sizes for each agroforestry type: 20m x 25m for coffee shade, 40m x 40m for grazing land, 30m × 30m for homegarden, and 50m × 50m for parkland. Data on species abundance and diversity were collected and analyzed using different diversity indices. The findings revealed a total of 31 woody species belonging to 20 families, showcasing significant variations in diversity and evenness across different agroforestry systems. Homegarden exhibited higher diversity, attributed to effective management practices. Many of the identified woody species served as food sources, with some serving dual roles such as shade and fodder for animals. The study emphasized the importance of supporting farmers engaged in agroforestry, particularly through indigenous knowledge practices like pruning, pollarding, and thinning. Furthermore, government intervention is deemed crucial to improving farmers; access to transportation infrastructure, thereby enabling efficient market linkages.

Posters

Abstracts

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
1B	Poster	**THE MAKILING BOTANIC GARDENS: A SANCTUARY AND REPOSITORY OF THREATENED PHILIPPINE PLANTS** *Castillo, Leilani A.* University of the Philippines Los Baños, Philippines Botanic gardens play a crucial role in plant conservation. The inventory of plants listed as Philippine threatened was conducted inside the Makiling Botanic Gardens (MBG) within the Mount Makiling Forest Reserve ASEAN Heritage Park, Philippines from August 2019 to September 2020. MBG is mandated to serve as a training laboratory for instruction, research, and extension. The inventory aimed to provide a list and showcase MBG's living collections of threatened Philippine plants based on DENR Administrative Order 2017-11. A total of 110 threatened Philippine plant species (42% are endemic) from 78 genera belonging to 37 families were found in the initial inventory. Of these, 11 species are classified as critically endangered (CR), 21 as endangered (EN), 53 as vulnerable (VU), and 25 as other threatened species (OTS). This represents about 11% of the 984 species in the threatened Philippine plant list and is still way below the Global Strategy for Plant Conservation Target 8 of 75%. As MBG houses crucial species, there is a need to prioritize botanic gardens in the Philippines for local and global conservation and restoration. Long-term programs for the protection and restoration of these threatened plants must be developed to safeguard and save them from possible extinction.
2B	Poster	**ASSESSMENT OF PHENOTYPIC PLASTICITY OF *DRYNARIA QUERCIFOLIA* (L.) J.SM. IN URBAN AND NATURAL ENVIRONMENTS BASED ON FUNCTIONAL LEAF TRAITS** *de Galicia, Danica, A* De La Salle University Manila, Philippines Phenotypic plasticity is a strategy which allows the plants to respond to diverse habitats. Among these plants that may exhibit phenotypic plasticity are epiphytes such as *Drynaria quercifolia*. The present study investigated the phenotypic plasticity of *D. quercifolia* based on functional leaf traits in urban (Metro Manila) and natural (Mount Makiling) environments. The study described and compared the vegetative leaf traits namely moisture content, stipe length, lamina length, leaf width, leaf area, leaf thickness, cuticle thickness, specific leaf area, stomatal density and physiological leaf traits such as δ13C and δ15N in the study sites. The variations of temperature, relative humidity, and light intensity were also measured and analyzed to determine if these had significant effects on the leaf traits. Lastly, degree of phenotypic plasticity of the leaf traits was analyzed to understand how individual traits can change in response to extreme conditions. The results showed that *D. quercifolia* exhibited significant differences in stipe length, cuticle thickness, specific leaf area, and δ13C as a response to relative humidity and light intensity in urban and natural settings. Likewise, relative humidity and light intensity were significantly correlated to these vegetative leaf traits. These vegetative and physiological leaf traits are therefore considered as functional leaf traits that respond to environmental conditions in urban and natural environments. Among the functional leaf traits, stipe length and specific leaf area exhibited high plasticity. These leaf traits allow *D. quercifolia* to thrive in urban and natural environments.

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
1A	Poster	**FLORA ASSESSMENT OF THE LOBOC-BILAR MAHOGANY *(SWIETENIA MACROPHYLLA* KING.*)* PLANTATION AND A SECONDARY FOREST IN RAJA SIKATUNA, BOHOL, PHILIPPINES** *Manarin, Faith Anne, A.* Ecosystems Research and Development Bureau, Philippines The Loboc-Bilar Mahogany Plantation (LBMP) in Bohol, Philippines, is known for its scenic pathway and unique microclimate. However, concerns have arisen about the area's biodiversity due to the invasive nature of mahogany. This study compares the flora biodiversity of LBMP with a secondary growth forest in Raja Sikatuna Protected Landscape (RSPL) in Sikatuna, Bohol. Flora was assessed through a 100% inventory using a belt transect method. The study revealed that there are 185 plant species belonging to 54 families, with 69 species endemic to the Philippines, 105 native, and 13 exotic species, indicating moderate diversity (SWDI=2.88) in LBMP. Meanwhile, a total of 185 species from 55 families were identified, including 74 endemic species, 117 native species, and 13 exotic species for RSPL indicating high biodiversity (SWDI=3.26). Using Rstudio, two tailed t-tests revealed that there is no significant difference in species diversity (p=0.354) between LBMP and RSPL, however, species evenness was significantly higher in RSPL (p=0.0066), likely due to LBMP's monocultural reforestation approach.
2A	Poster	**EFFECTS OF FOREST DISTURBANCE ON SOIL AND LITTER ARTHROPOD ASSEMBLAGES** *Almazan, Veronica, L* College of Forestry and Natural Resources, UPLB, Philippines Forest disturbance continues to be a concern, primarily driven by human activities such as plantation establishment, posing considerable impact on biodiversity. Soil-litter arthropods are an example, playing crucial roles in a healthy forest ecosystem. Despite their ecological importance, these arthropods are often under-studied, particularly their responses to habitat conversion. This study aims to investigate forest disturbance effect on soil-litter arthropod assemblages by comparing sites with varying degrees of disturbances: natural forests (NF), monoculture plantations (MP), and mixed species plantations (MSP). Methodology involves extracting arthropods from soil samples collected during the wet season. Analysis of assemblages tackles species composition, abundance, richness, and diversity. The findings reveal that NF exhibited the highest species abundance, richness, and diversity. Abundant group includes Hymenoptera, and species-rich groups differ among sites. Non-metric multidimensional scaling further indicated that species composition among sites were similar. The arthropods were categorized into functional groups, showing that detritivores and herbivores predominated the natural forest, while omnivores were prevalent in plantation sites. The overall findings underscore the intricate nature of arthropod assemblages and their critical role in forests. Furthermore, results indicate that disturbances significantly impact these communities, suggesting that research of this nature should be utilized for their protection and conservation.

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
2A	Poster	**FOREST TREE HEALTH ASSESSMENT AND TREE DISEASE INCIDENCES ALONG THE MAIN TRAILS IN MAKILING BOTANIC GARDENS, LOS BAÑOS, LAGUNA** *Mendoza, Elisha Immanuel L.* University of the Philippines Los Baños, Philippines The incidence of forest diseases is increasing globally due to climate change and anthropogenic disturbances, threatening biodiversity and conservation efforts. Makiling Botanic Gardens (MBG), an ex-situ conservation site, houses 428 tree species, including 110 threatened species, 42% of which are endemic to the Philippines. Despite its importance, no tree health assessments or disease incidence surveys have been conducted within MBG. This study evaluates tree disease incidence and severity along the main trails, documents observed symptoms and identifies key factors influencing disease progression. Trees with a diameter at breast height (DBH) of ≥5 cm within a 100-m buffer from main trails were recorded. Data collected include DBH, taxa, affected area (root/stem, leaf/crown), and disease severity percentages. Nearly all 300 surveyed trees exhibited disease symptoms, mainly on stems and leaves. Among 45 identified species, 60% were native and 33% endemic. Notable cases include basal rot in *Tectona philippinensis*, exudates on *Syzygium* sp. and *Shorea contorta*, and root rot in old-growth trees. Several endemic species with limited populations exhibited severe disease symptoms, with a 40% severity rate. These findings establish baseline data for MBG's management plans and highlight its role as a sentinel site for early disease detection and conservation.
2A	Poster	**INVESTIGATING ROOT-ASSOCIATED FUNGI IN *BRACKENRIDGEA FOXWORTHYII* FOR BIODIVERSITY CONSERVATION AND ECOSYSTEM RESILIENCE** *Santiago, Janella T.* University of the Philippines Los Baños College of Forestry and Natural Resources, Philippines The study of root-associated microorganisms in *Brackenridgea foxworthyii*, a nickel hyperaccumulator endemic to Palawan, Philippines, offers valuable insights into biodiversity conservation and ecosystem resilience. These unique microbial communities, particularly root endophytic fungi, contribute to plant adaptation in metal-rich soils while influencing phytoremediation and environmental management. This study identified two dominant root endophytes from *B. foxworthyii*, *Acremonium* sp. and *Phomopsis asparagi*, using molecular techniques, including DNA extraction, ITS amplification, and BLASTn analysis. Dual culture assays revealed that *P. asparagi* exhibited superior antagonistic effects against soil-borne pathogens, inhibiting *Fusarium oxysporum* by 66.67% to 75.86% and *Sclerotium* sp. by 44.44% to 50.00%, while *Acremonium* sp. showed lower inhibition rates of 59.57% to 66.67% and 29.41% to 34.29%. Further biochemical characterization revealed that *P. asparagi* possesses enzymatic activities, including amylase production, which may indicate its capacity to degrade complex polysaccharides and enhance nutrient availability for plant growth. These findings highlight the role of root endophytes in hyperaccumulator plants as major contributors to ecosystem balance and biodiversity conservation. Given *P. asparagi*'s biocontrol and metabolic potential, further research is warranted to explore its enzymatic pathways and symbiotic interactions, with implications for managing metal-contaminated ecosystems and conserving microbial diversity.

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
2B	Poster	**SUSCEPTIBILITY OF ENDANGERED PHILIPPINE NATIVE EBENACEAE SPECIES IN AN EX-SITU COLLECTION TO BLACK LEAF SPOT DISEASE** *Gudao, Kasandra Ortezze B.* University of the Philippines Los Baños, Philippines Ebenaceae species are among the endangered native trees of the Philippines, with only a few species conserved at the University of the Philippines Los Baños - Energy Development Corporation (EDC) Binhi Biodiversity Park, Laguna. In May 2024, all five *Diospyros pilosanthera* trees in the ex-situ collection exhibited black leaf spots. Infected leaves initially developed dark brown to black circular spots (dia. 2.4 mm- 3.3 mm) surrounded by chlorotic halos. Symptomatic tissues cultured on potato dextrose agar, produced white, cottony mycelium with simple, transverse septate hyphae with clamp connections. Molecular identification using ITS1/ITS4 primers yielded a 215 bp sequence, showing 100% identity to *Ceriporia* sp. To prove pathogenicity of the isolate to *D. pilosanthera* and determine the susceptibility of other Ebenaceae species at Binhi Biodiversity Park, detached leaf assays were conducted on *D. pilosanthera*, *D. mindanensis*, and *D. longiciliata*. After 14 days, *D. pilosanthera* exhibited the most severe symptoms, with lesions ranging from 62.7-90.4 cm^2 (ave. 75.5 cm^2). In comparison, *D. mindanensis* developed lesions measuring between 9-38 cm^2 (ave. 18.7 cm^2), while *D. longiciliata* had the smallest lesion sizes, ranging from 14.3-23.2 cm^2 (ave. 17.83 cm^2). Control leaves remained asymptomatic throughout the experiment. The fungus was successfully re-isolated, fulfilling Koch's postulates. Findings from this study emphasize the importance of disease management in ex-situ conservation efforts for endangered species in the Philippines.
2A	Poster	**MODELING POTENTIAL DISTRIBUTION OF *D. SISSOIDES* WIGHT & ARN. IN TAMIL NADU AND KERALA –A VULNERABLE TREE SPECIES** *D. Thangamani, P. Devamanikandan, S. Lalitha & Rekha R. Warrier* Institute of Forest Genetics and Tree Breeding, India *Dalbergia sissoides* Wight & Arn. commonly called Malabar rosewood is a medium-sized to large deciduous tree belonging to the pea family (Fabaceae). It is native to India, particularly in the Western Ghats grows in seasonally dry tropical forests. It is significant to highlight that the natural distribution of *D. sissoides* has been fragmented and populations are falling due to substantial degradation of natural regeneration, which may be the reproductive restrictions exhibited by these tree species due to self-incompatibility and insufficient recruitment. Lack of information on current distribution necessitates using models to predict suitable habitat for conservation measures. In this study, Maximum entropy distribution modeling (MaxEnt) was used for predicting the potential habitat suitability of *D. sissoides* in Tamil Nadu and Kerala. For prediction modeling, 45 occurrence records of the species along with 15 climate prediction variables were used. The model-generated AUC accuracy of 0.916 indicating that the prediction result of this model was a good and informative for the habitat suitability of *D. sissoides*. The variables Bio 05 (Max Temperature of Warmet month), Bio 04 (Temperature seasonality), elevation, aspect and Bio 19 (Precipitation of Coldest quarter) were the most important variables for predicting the occurrence of this species contributing 28.3%, 20.1%, 10.3%, 9%, and 6.7%, respectively. The result of the jackknife test indicated that the prediction is significantly better than at random ($p<0.05$). The jackknife test also reveals that the distribution of *D. sissoides* was mainly influenced by the Mean maximum temperature of the Warmest Month (Bio 05). For the accuracy of the model, kappa coefficient (K), Normalized Mutual Information (NMI) n(s), and True Skill Statistic (TSS) were also derived from the confusion matrix. (Fielding and Bell 1997, Allouche et al., 2006). The method described here is very promising for identifying adequate habitat for vulnerable/Red listed species, and it can be a useful tool for managing, planning, and monitoring biodiversity conservation.

Theme	Type	Title of Presentation/Author(s) name(s)/Institute(s)/Abstract(s)
1A	Poster	**EVALUATION OF GENETIC VARIATION AMONG *MADHUCA LONGIFOLIA* (J. KOENIG EX L.) J.F.MACBR. TREES (*MADHUCA*) FROM TAMIL NADU, INDIA** *D. Thangamani, S. Lalitha & Rekha R. Warrier* Institute of Forest Genetics and Tree Breeding, India *Madhuca longifolia* (belongs to Sapotaceae) is one the crucial natural resources in forest and urban areas; it's commonly called as Mahua. Flowers and fruits are used as food and also in preparation of value added products. From the seed, oil is prepared for various industries including biodiesel and in medicinal field. SSR markers were designed using transcriptome analysis and using krait software based on nucleotide repeat, the polymorphic SSR markers were developed that were applied to the identification of 56 madhuca accessions. The genetic characteristics and relationships of these madhuca accessions were evaluated based on the developed SSR markers. ICFRE-IFGTB has collected and 114 accessions across 30 districts of Tamil Nadu, India, and assembled them as VMGs. 100 polymorphic SSR markers were applied to the identification of 56 madhuca accessions. These SSR markers could well distinguish all 56 accessions, confirming their effectiveness. DNA fingerprints of the 56 madhuca accessions were constructed based on the 9 polymorphic SSR markers. The dendrogram divided the accessions into five major clusters based on a visual cut-off point around the dissimilarity index = 0.6–0.7. These clusters indicate natural groupings among the CPTs. The dendrogram shows that there is significant diversity within the *Madhuca* CPTs. Clusters with high diversity were found in Cluster IV and V, prioritized for conservation, as they may harbour rare or unique alleles. Distantly placed clusters IV vs. I suggest a broad genetic base ideal for hybridization to create heterosis or hybrid vigor. In conclusion, the results shows that madhuca trees in Tamil Nadu are highly diverse, providing valuable information for future breeding programs, germplasm conservation, and taxonomic classification.
1A	Poster	**GENETIC VARIATION IN MYRISTICA *MALABARICA* POPULATION USING SSR MARKERS AND ITS CONSERVATION** *D. Thangamani, S. Lalitha & R. Anandalakshmi* Institute of Forest Genetics and Tree Breeding, India Genetic variation in *Myristica malabarica* has been conducted utilizing SSR primers to evaluate conservation initiatives. This study, carried out in the Western Ghats, emphasized ecological niche modeling for this species due to its susceptibility and economic significance. Over a span of three years, field surQveys were undertaken to document the distribution of *M. malabarica*. The genetic diversity of this species was analyzed using SSR primers, which are markers for assessing genetic diversity. The findings contribute to understanding the population structure of *M. malabarica* and aid in conservation strategies for this vulnerable species. The threats to the conservation of *Myristica malabarica* include habitat loss due to human activities like agricultural expansion, climate change impacting the *Myristica* swamps, and the drying up of water bodies essential for the species' habitat. These threats endanger the unique biodiversity of the *Myristica* swamps, which are crucial habitats for endemic and endangered plant species like *Myristica malabarica*. ICFRE-IFGTB has taken conservation efforts and included this species in in situ FGR tree species and collected the 37 accessions from 20 Forest Divisions and explored the variation using 9 SSR primers. The Jaccard Dissimilarity Coefficient was utilized for clustering, which quantifies genetic differences among the samples. The resulting dendrogram was categorized into three primary clusters, revealing the most distinct groupings and indicating significant genetic divergence. A factorial analysis plot illustrates the various populations collected from different locations, categorizing them based on their genetic similarities. The findings highlight the diversity of populations for conservation and genetic enhancement.


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- Bachelor of Science in Forestry
- Master in Forestry
- Master of Science in Forestry
- Master of Science in Natural Resources Conservation
- PhD in Forestry

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The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT) delivers research-based solutions that address the global crises of malnutrition, climate change, biodiversity loss, and environmental degradation.

The Alliance focuses on the nexus of agriculture, nutrition, and environment. We work with local, national, and multinational partners across Africa, Asia, and Latin America and the Caribbean, and with the public and private sectors and civil society. With novel partnerships, the Alliance generates evidence and mainstreams innovations to transform food systems and landscapes so that they sustain the planet, drive prosperity, and nourish people in a climate crisis.

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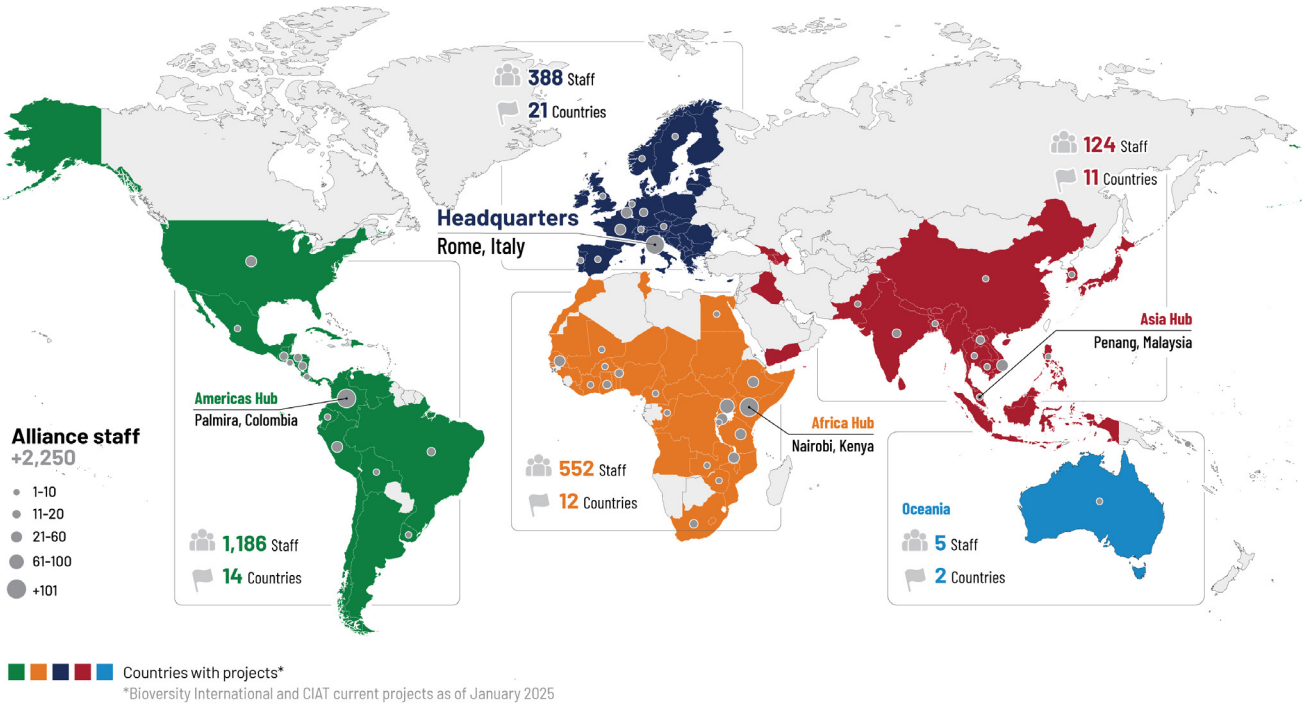

Asia-Pacific Forest Genetic Resources Programme (APFORGEN) is a regional programme and network that brings knowledge and use of Asia's forest biodiversity to a new level – from a traditional focus on ecosystems and species to include genetic diversity that underlies ecosystem functioning, productivity, and adaptive capacity in a changing environment. APFORGEN brings relevant genetic knowledge from laboratories and specialists to forest managers, conservationists, restoration practitioners and policy-makers in an easily understandable form, helping them to manage the region's tree diversity for environmental and socio-economic benefits.

Through its network of geneticists, forestry professionals and funding partners in 15 Asian countries, APFORGEN shares knowledge and good practices, implements multi-country research and development projects, operates a Regional Training Centre and serves as a one-stop-centre on forest genetic resources (FGR) information and initiatives in the Asia-Pacific.

Our objectives:

1. Mobilize political and financial support for integrated management of forest genetic resources in land use, biodiversity and climate policies, strategies and programmes
2. Make information about the region's forest and tree genetic resources available and accessible to support their sustainable management and research
3. Develop conservation and sustainable use strategies for regionally important and threatened tree species
4. Strengthen tree seed systems to facilitate ecosystem restoration, support local livelihoods and climate change adaptation and mitigation

Visit APFORGEN's website at www.apforgen.org to learn more about our activities.

APAFRI

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What is APAFRI?

The Asia Pacific Association of Forestry Research Institutions (APAFRI) is an association of institutions with an active interest in forestry research, conservation, management and other forestry related matters in the Asia-Pacific region. APAFRI's objective is to promote collaborative exchange among institutions to strenghten the forestry research and conservation capacity in the Asia-Pacific region.

APAFRI was formally launched in Bogor, Indonesia in 1995 during a regional meeting of heads of forestry research organizations in the Asia Pacific region. In 1998, APAFRI was registered as a non-government organization (NGO) in Malaysia.

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