



ITTO-BMLEH Teak Newsletter

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The *ITTO-BMLEH Teak Newsletter* support and facilitates teak and other tropical species networking and information dissemination in the Asia Pacific and West Africa through ITTO member countries and partners, and support sharing lessons of the project through short news release, occasional papers, project related research and development information. The bi-monthly newsletter is released online through TEAKNET webpage www.teaknet.org and co-hosted by Kasetsart University, Thailand.

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Federal Ministry
of Food
and Agriculture



A short article

Training on "Production of Good Quality Plant Materials, Nursery Techniques, and Silvicultural Practices to Improve Stand Management of Teak Plantation and Other Valuable Timber Species"

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Background

With the financial and technical support of ITTO - BMLEH project ((PPA/54-331A), field training program has been organized in difference provinces of Cambodia to strengthen the technical understanding on producing good quality planting materials and silvicultural practices to improve stand management and value chain to make significant contributions to the development

of teak and other valuable timber plantations in the country. The training courses aimed to achieve three main objectives to: 1) enhance knowledge on production of good-quality plant material; 2) improve techniques on silvicultural practices for tree plantation; and 3) provide opportunities for exchange of learning experiences from field visits.



The training organized in Kampong Cham province, Cambodia in January 2025

The ITTO-BMLEH project “Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics (PPA/54-331A)” aims to improve value chain processes within the plantation timber industry, promoting the verification of the legality of sustainable timber utilization for both small and medium enterprises (SMEs) and plantation development.

Trainings organized

Between 2025 and 2026, there were 4 training events organized with the same title “Training on “Production of Good Quality Planting Materials, Nursery Techniques, and Silvicultural Practices to Improve Stand Management of Teak Plantation and Other Valuable Timber Species” in separate provinces in Cambodia, including Kampong Cham province (KPC) on 23-25 January 2025, Ratnakiri province- (RTK, 26-28 February 2025), Kampot province-KPT, 8-10 December 2025), and Kampong Speu province-KPS, (2-4 April 2026), with the number of participants of 26, 22, 29, 33, respectively. of which private sector and local communities participated were 9, 4, 7, and 3, respectively. The training consisted of 4 sessions:

- 1) good-quality plant material,
- 2) tree nursery techniques,
- 3) tree plantation establishment, and
- 4) silvicultural techniques.

Welcome Remarks

Mr. Chheang Dany, Deputy Director General of the General Directorate of Forestry and Wildlife (GDFO), and the National Project Coordinator of the ITTO project (PP-A/54-331A) delivered opening remarks. Mr. Dany said, the General Directorate of Forestry and Wildlife (GDFO) is currently implementing the ITTO-BMLEH project entitled “Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics,” spanning six countries- Cambodia, Thailand, Vietnam, India, Indonesia, and Togo. He expressed high appreciation to all participants in the trainings organized by the Department of Commercial Forest Plantation and Private Forest Management in collaboration with the ITTO-BMLEH project. He thanked the Ministry of Food and Agriculture and Regional Identity (BMLEH) of the Federal Republic of Germany through the ITTO Secretariat for supporting the project implementation in Cambodia.

Highlights of the Key Training Sessions

What is Good-quality planting material?

Quality is determined by choosing superior “Mother Trees” with high genetic value. This ensures healthy, fast-growing, robust seedlings with high survival rates and strong resistance to diseases and climate change.

Genetics in Seeds: Seeds inherit traits from both parent trees through pollination. Offspring variations depend on dominant/recessive genes and can be better or worse than the parents. In tree improvement programs, controlled breeding isolates these superior genes to produce “improved seeds” for high-yield plantations.

While teak naturally grows in India, Myanmar, Thailand, and parts of Laos, it has been introduced into Cambodia since 1930s. Some of other high value native timber species in Cambodia are Beng (*Azelia xylocarpa*), Chamriek (*Albizia lebbbeckoides*), Chhres (*Albizia lebbbeck*), Thnong (*Pterocarpus macrocarpus*), Kokoh (*Sindora cochinchinensis*).



Mr. Cheat Vichet explained trainees in the field practice with smallholder teak plantation in Kampot province (December 2025)

Seed Tree Selection & Seed Sources: Mother tree quality means seed quality that leads to seedling quality. The GDFO manages 10 key seed production areas (SPA) across Preah Sihanouk, Kampong Chhnang, and Siem Reap.

⇒ **Natural Forests:** Medium genetic quality; naturally occurring, designated forest boundaries adapted to local climates (~20 sites and 20+ species mapped across Cambodia);

- ⇒ **Seed Production Areas:** Established plantations managed for seeds. Low-quality trees are heavily thinned out (up to 50% max per thinning round) to leave 50–100 premium interbreeding trees per hectare;
- ⇒ **Seed Orchards:** Highest genetic quality. Established via high-performing families or clones (Clonal Seed Orchards yield seeds much faster than Seedling Seed Orchards).

Seed Harvesting Techniques

Maturity indicators can be determined by color changes (e.g., green to deep yellow in Dipterocarpaceae), scent, or trial cutting. Early collection prevents seed damage from insects. **Crown Harvesting:** Collect from the entire crown. Lower branches yield poorer seeds; upper crown branches yield the highest quality seeds.

- ⇒ **Floor Collection:** Easiest, but requires clearing undergrowth (grass/debris) first.
- ⇒ **Branch Shaking:** Shaking limbs to drop synchronous crops onto ground tarps.
- ⇒ **Pruning Tools & Tree Climbing:** Utilizing long pole cutters or skilled climbers equipped with safety lines to harvest high out-of-reach canopy fruits.
- ⇒ **Supplier Purchases:** Must verify collection date, geographic origin, storage method, packaging integrity, and germination rates.

Seed Extraction & Cleaning

Fleshy Fruits: Soak in water for 1–2 days until the pulp softens. Gently scrub by hand to remove pulp without bruising the seed coat. Float-test to discard hollow seeds, rinse, air-dry, and winnow away remaining debris;

Traceability & Data Recording: Field operators must log the collection date, seed zone, species, specific tree coordinates/IDs, volume collected, operators' names, temporary storage, and labelled bag/sack numbers.

Storage & Quality Control

Storage Longevity: Room temperature should be viable for less than 2 years. If used sealed containers + cold storage (0 – 10 OC), it can maintain viability for over 7 years.

Laboratory Diagnostics:

- * **Cut Test:** Done on samples to verify internal embryo health.
- * **Purity Test:** Measures the percentage of clean, weed-free target seeds.
- * **1,000-Seed Weight:** Gauges seed size, density, and seedling vigour.
- * **Germination & Viability Tests:** Standard germination tests are used for non-dormant seeds, while Tetrazolium salt staining, embryo excision, or X-ray tests are applied to dormant species.



Tree seeds collected from seed sources, Cambodia

Nursery Techniques

Nursery should be planned on a flat, well-drained elevated land with a 1–3° slope to avoid flooding. It must have a year-round water source (ponds, streams, rivers, or groundwater) and reliable all-weather road access for vehicles. Proximity to the electricity grid and access to affordable local labor are highly advantageous. Soil Substrate Mixture should be a combination of high-quality topsoil (alluvial river soil, termite mound soil, or forest topsoil) with organic components.

Seed Treatments: To ensure rapid, uniform germination and eliminate surface pathogens, seeds must undergo specialized treatments based on their dormancy type:

- ⇒ Cold Water Soaking (For species like Kranhoung, Neang Nuon, Sokrom): Sun-dry seeds for 8–12 hours, soak them in ambient-temperature water for 12–18 hours, rinse thoroughly, and immediately sow or incubate;
- ⇒ Hot Water Soaking (For hard-coated seeds like Beng, Krakoh, Knguok): Sun-dry seeds for 12 hours. Immerse it in boiling water, stir continuously as it cools naturally, let them stand for 12 hours, air-dry in the shade for another 12 hours, and sow;
- ⇒ Mechanical Scarification/Cutting (For Teak, Thnong, Beng): Carefully nick, clip, or abrade the outer seed coat/shell without damaging the internal embryo to allow fast water penetration. Soak in water for 12–18 hours before sowing or bagging.



Arrangement of tree nursery infrastructure



Silvicultural Practices

Pruning refers to removing lower tree branches (both dead and alive) to stimulate growth, increase timber quality, and ensure straight, knot-free trunks. The best time to do pruning is during the dry season, specifically from years 1 to 5 after planting, when saplings grow fastest and lower branches expand. Execution Limit: Do not prune more than 1/3 of the total green canopy to avoid negatively impacting growth. Improper Pruning Hazards: Avoid flush-cutting or stripping bark, which exposes the vascular cambium and sapwood to cause decay or infection.

Technical Guidelines (Three-Cut Method for Larger Branches):

- ⇒ Step 1 (Undercut): Make an upward cut on the underside of the branch, about 30 cm away from the trunk, to prevent the bark from tearing.
- ⇒ Step 2 (Top Cut): Make a downward cut slightly further out (around 35 cm from the trunk) to safely remove the weight of the branch.
- ⇒ Step 3 (Stub Cut / Final Cut): Cut the remaining stub cleanly near the branch collar, ensuring you do not damage the main trunk wood.



Pruning practice demonstration by Mr. Phoung Sophea during field training at Teak Farm Company in Kampong Speu province

Forest Thinning Methods

- ⇒ Thinning Principles: Thinning involves removing poor-quality, crooked, crowded, or diseased trees to optimize for growing space, light penetration, and nutrient absorption for the remaining high-quality trees;
- ⇒ Indicators Denoting the Need to Thin: Slower trunk diameter growth or overly dense canopies restricting sunlight. Signs of dieback or disease in the understory layers;
- ⇒ Benefits: Mitigates pest outbreaks, provides intermediate timber revenue (e.g., poles, posts), and significantly reduces wildfire hazards.

Thinning Categories

- ⇒ Canopy-Based Thinning: Targets trees with large, overlapping crowns blocking understory light, allowing younger or lower layers to catch up in height and diameter;
- ⇒ Selective Thinning: Systematically screens and removes low-value, split, or diseased trees so that elite timber specimens flourish;
- ⇒ Mechanical Thinning: Systematic row or fixed-interval removal typically applied in uniform, single-age industrial plantations; not recommended for Teak plantations;
- ⇒ Free Thinning: Retains only high-value, straight, wide-diameter commercial trees. Ideal residual density is post-thinned at 400 to 600 trees per hectare.

Basal Area (BA) Calculation

- ⇒ Basal Area measures the cross-sectional area of a single tree trunk or all tree trunks per hectare (m^2/ha), serving as a crucial forest density indicator;

⇒ Single Tree Formula: $BA = (\pi \times DBH^2 / 4)$ (where DBH is the Diameter at Breast Height measured at 1.37 meters above the ground).

⇒ Stand Basal Area: Expanded using a plot sampling factor (e.g., a sample plot of 500 m^2 utilizes an expansion factor of 20 to scale data to 1 hectare).

Stump & Coppice Management:

Fast-growing species and several valuable local trees (e.g., Eucalyptus, Teak, Rosewood, Kranhung) can regenerate effectively via coppicing (sprouting new shoots from harvested stumps).

Stump Cleaning Procedure:

- ⇒ Clean cuts provide optimal sprouting conditions;
- ⇒ Cut newly harvested stumps very close to the ground (10 to 15 cm) with a slight slope to shed rainwater and prevent wood rot;
- ⇒ Never split the bark or root flare during cutting.

Coppice Selection (After 1 Year):

- ⇒ Stumps typically produce 2 to 4 shoots;
- ⇒ Inspect after one year and cull weak, crooked, or diseased shoots;
- ⇒ Retain only 1 to 3 of the straightest, healthiest, and fastest-growing shoots per stump. These regenerated shoots often grow much faster than newly planted seedlings.



Visit to smallholder teak plantations in Kampong Cham province (KPC) and Ratanakiri province (RTK), 2025

Demonstration Plots (from previous Phase- 1 ITTO project): From the previous phase 1 of the ITTO teak Mekong project, the demonstration plots were re-evaluated for growth trajectory projections over a 10 to 30-year horizon:

- ⇒ Kampong Speu (Spacing: 2.5 m X 4.0 m): The pruned plots demonstrated superior diameter outcomes over 30 years compared to unpruned baselines. Tree diameters can exceed 50 cm past 30 year if pruned early. Growth trajectories match closely before age 10, proving pruning must occur before year 10 for maximum efficacy.
- ⇒ Kampong Cham (Spacing: 2.0 m X 2.0 m): Unpruned, overcrowded plots showed severely stagnant diameter expansion due to dense canopy closure and deficient sunlight penetration. The recommended solution for such dense layouts is immediate structural pruning combined with thinning interventions.

Pre and Post-Training Tests

Ten (10) key questions were used for scoring the understanding level of each participant for all the training sessions organized.

The results indicated substantial increasing levels of knowledge gained by trainees in each training, scoring by 2.15, 1.94, 2.67, and 3.19, for the 1st (KPC), 2nd (RTK), 3rd (KPT), and the 4th training (KPS), respectively as shown in the spider diagram below.

Conclusion

The training events contributed significant development of teak and other valuable timber plantation development in Cambodia. Despite relatively high score of post-training tests of enhanced knowledge learned by trainees, producing good-quality plant material and field silvicultural practices remained a critical constraint and technical barrier to the development of teak and other valuable timber plantation in Cambodia. Hence, further research efforts and capacity building would be very crucial for the value chain process.



Spider diagram for pre- and post-training scoring test

9th Webinar: Pest Insects in Teak Plantations and Natural Teak Forests

9 July 2026 2:00 – 3:30 PM



The webinar, titled “Pest Insects in Teak Plantations and Natural Teak Forests” held on 9 July 2026, is the 9th in a series of 12 webinars jointly organized by the International Tropical Timber Organization (ITTO) and Germany’s Ministry of Food, Agriculture and Regional Identity (BMLEH). The webinar was organised as part of the ongoing second phase of the ITTO-BMLEH teak project, “Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics (PP-A /54-331A).” It featured discussions from Dr T.V. Sajeev from India and Dr Zar Chi Hlaing from Myanmar, with Professor Yongyut Trisurat of Kasetsart University in Thailand moderated the discussion.

Dr. Tetra Yanuariadi, Project Manager of Trade and Industry Division of ITTO in his opening message, stated that apart from poor planting stock quality, inadequate silvicultural practices, and weak marketing and value chains, insect pests pose severe problem in teak monoculture plantations in Thailand, Myanmar, India, and Lao PDR, where teak is an economically valuable native species and is a primary challenge to teak productivity.

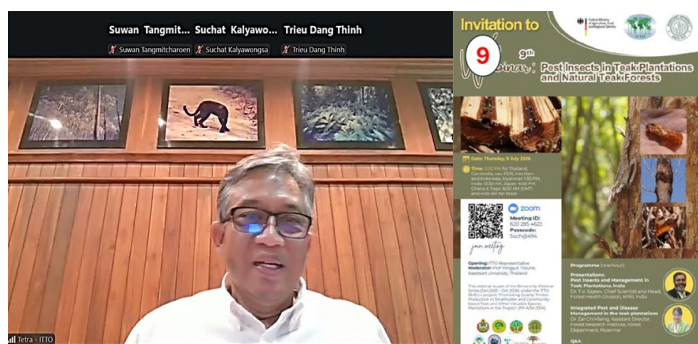
Pest insects and Management in teak plantations- Insights from Kerala, India

Dr. T. V. Sajeev, Chief Scientist at the Kerala State Council for Science, Technology, and Environment of India’s Kerala Forest Research Institute, discussed the four major pests associated with teak in the forests of Kerala in southern India and the management methods employed to control their population and prevent further spread.

Speaker 1

Dr. T. V. Sajeev
Chief Scientist
Kerala State Council for Science
Technology and Environment (KSCSTE)
Kerala Forest Research Institute (KFRI), India

“Pest Insects and
Management in Teak
Plantations, India”



Pests of the Teak tree

Defoliators

Teak Defoliator
Hyblaea puera (Cramer)

Teak Skeletonizer
Eutectona machaeralis (Walker)

Shoot Borers

Teak Trunk Borer
Alcortogystia cadambae (Moore)
Dervishya cadambae

Teak Sapling Borer
Sahyadrasus malabaricus (Moore)

The four types of pests associated with teak plantations

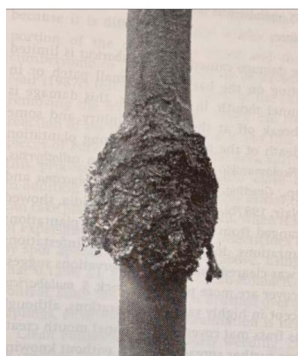
Teak skeletonizer (*Eutectona machaeralis*), a type of moth that feeds on teak leaves except for the veins, does not require any management. This is because the insect feeds on the leaf just before leaf fall occurs and consequently poses no significant economic repercussions on teak productivity, said Dr. Sajeev. In the case of teak sapling borers (*Alcaterogystia cadambae* Moore), which bore into the stems of teak, spot application of an insecticide called Chlorpyrifos is used to control infestation.

Meanwhile, no control methods are possible for teak trunk borers (*Cossus cadambae* Moore) since their larvae are embedded inside the trunk and are inaccessible for any kind of application. At last the teak tree dies and the heartwood is no more usable for any type of furniture making (see teak heartwood planks below right). Teak trunk borers also do not have natural predators.

Teak Skeletonizer *Eutectona machaeralis* (Walker)



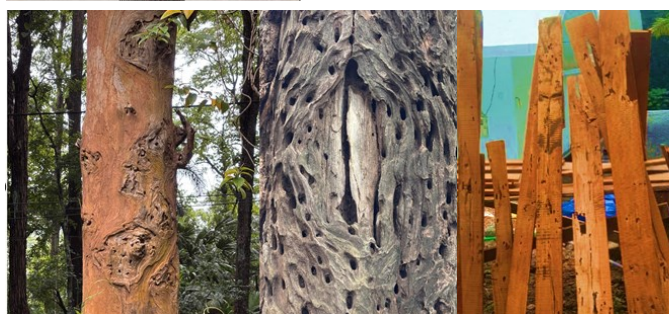
Management method : Not needed



Teak Sapling Borer
Alcaterogystia cadambae
(Moore)
Dervishiya cadambae

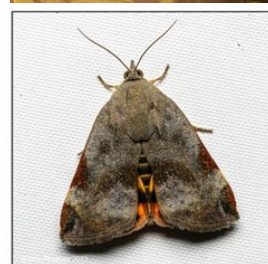
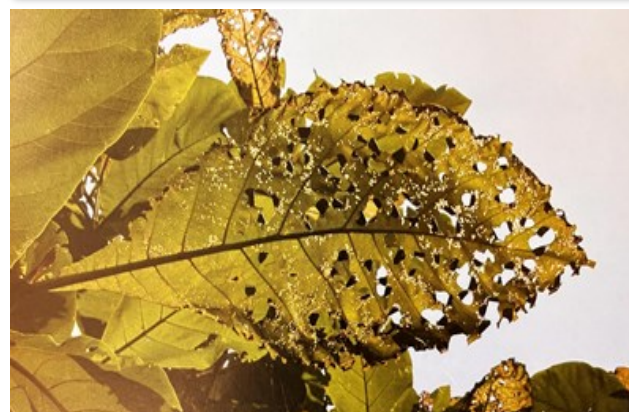


Management method : Spot application of Chlorpyrifos



Teak Trunk Borer (*Cossus cadambae* Moore)

Teak defoliators (*Hyblaea puera* Cramer) pose the most serious threat to teak plantations in India, according to Dr. Sajeev. These small moths feed on teak foliage for a period of two weeks, at least three to six times before natural defoliation occurs in teak. Teak plantations that are three to nine years old could incur damages of up to 3m³ per hectare per year, equivalent to INR 75,000 (USD 780) per hectare per year.



Different stages of *Hyblaea puera* infestation in teak plantation

Teak defoliators are managed using the nuclear polyhedrosis virus (HNPV), a biological pesticide that is absolutely target specific to this species of insect, and can be transmitted both in vertical and horizontal direction and passed on from parent to offspring via the egg. KFRI possess patent to the development of biopesticide formulation against this teak defoliator.

Dr. Sajeev pointed out that teak in natural forests do not often experience pest problems, and when they do, these are often very sporadic and subside eventually. In monocultures such as teak plantations, however, pest infestations can be a major threat affecting productivity. In India, for instance, teak plantations experience regular annual teak defoliator outbreaks. He concluded his talk by emphasizing maximizing natural remedies to pest infestation. "To manage pests, we need to work with nature, not against it," he said. "Pests are made, not born", Dr. Sajeev concluded.

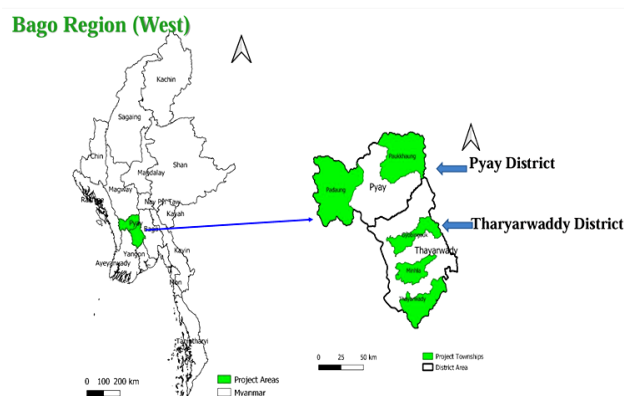
Teak associated pest problems in Myanmar

Dr Zar Chi Hlaing, Assistant Director, Forestry Research Institute of Myanmar's Forestry Department, Yezin, who spoke next elaborated the results of their investigation to systematically document the insect pests affecting teak plantations in Bago Region as well as the occurrence of natural enemies of the major pests in this region.

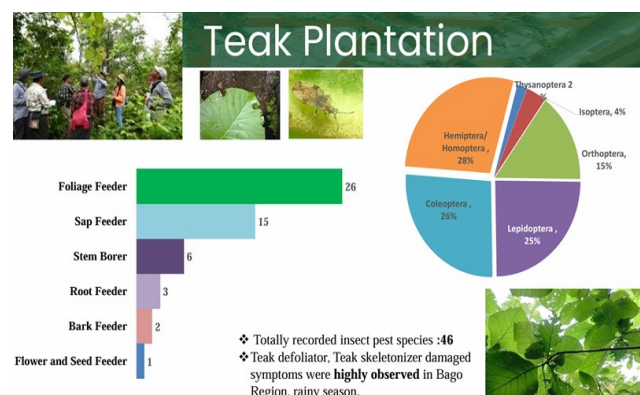


Teak, which is a highly prized construction material and multi-purpose timber species, has been an economically important forest product in Myanmar since the British colonization of the country, according to Dr. Hlaing. In Myanmar, large area of teak plantations have been established since 1980. Despite the significance of teak timber, information gaps concerning insect pests and diseases infesting teak and the occurrence of their natural enemies remain.

As stated by the previous speaker, teak plantations in Myanmar also suffer severe damage from insect attack and outbreak of infestation occasionally reported. Shoot borer (*Zeuzera coffeae* Nietner), leaf feeder (*Eutectona machaeralis* Walker), sap sucking bug (*Tingis* sp.), stem borer (*Acalolepta cervinus* Hope), sapling borer (*Sahyadrassus malabaricus* Moore) and termite (*Copotermes curvignathus*) infested young teak plant from an experiment conducted in Nyaung Chae Thawk Reserve Forest, Bago Region and in Pa-Lway Reserve Forest, Nay Pyi Taw, Myanmar has been reported. The total number of insect pests infesting teak was not reported in forest trees protection in Myanmar.



The ongoing study recorded a total of 46 insect pest species during the rainy season, as well as 19 species of natural enemies of these insect pests. Damages from teak defoliators and teak skeletonizers were highly observed in the study sites, according to Dr. Hlaing. The three dominant pests identified in the study are teak defoliators, teak skeletonizers, and red borers (*Zeuzera coffeae*).



A grid of eight photographs showing different insects. The first row contains four images: a ladybug (Coccinella transversalis) on a green leaf, a praying mantis (Mantisa religiosa) on a yellow background, an assassin bug (Zelus renardii) on a yellow background, and a green lacewing (Chrysoperla sp.) on a blue background. The second row contains three images: a ladybug (Coccinella undecimpunctata) on a yellow background, a damselfly (Sympetrum foncolombii) on a white background, and a rove beetle (Cycloneda munda) on a white background.

Treatments = 5

- i. **Biological control**
(Disease –Trichoderma and Pest – Wasp)
- ii. **Chemical control**
(Disease - Dithean M 45, 0.1% (or) Mancozeb 75% WP and Pest - Carbaryl and Deltamethrin)
- iii. **Mechanical control** (People and materials- Silvicultural operations)
- iv. **IPDM** (i + ii+ iii)
- v. **Control**

The diagram illustrates the components of IPDM (Integrated Pest Management) and the practices associated with each. A central purple oval labeled "IPDM Components" is connected to four surrounding ovals by arrows:

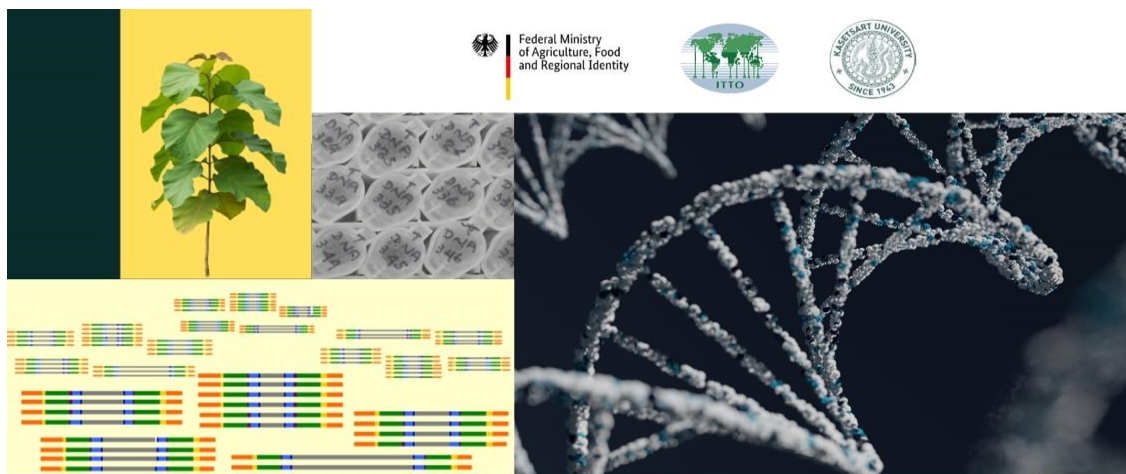
- Top (Blue oval):** Light trap, Sticky trap, Molasses trap, removal of pests. Connected by a blue arrow pointing upwards.
- Left (Orange oval):** Weeding, Cleaning. Connected by an orange arrow pointing to the left.
- Right (Green oval):** Trichogramma (wasp) released, Cover nylon mesh. Connected by a green arrow pointing to the right.
- Bottom (Light Green oval):** Using pesticides. Connected by a light green arrow pointing downwards.

Watch the full webinar video in the [project website](#) and download the presentations.

PK Thulasidas, Yongyut Trisurat and
Tetra Yanuariadi
ITTO Teak project team

Invitation to the 10th Webinar

Thursday, 20 August 2026



Federal Ministry
of Agriculture, Food
and Regional Identity



ITTO-BMLEH Teak and Other Valuable Species Plantations Project

Invitation to Webinar: 10th Teak DNA Barcoding and Forensic Investigation

Date: Thursday 20 August 2026

Time: 2:00 PM for Thailand,
Cambodia, Lao PDR, Viet Nam
and Indonesia, Myanmar: 1:30 PM,
India: 12:30 PM, Japan: 4:00 PM,
Ghana & Togo: 8:00 AM (GMT)
and 4:00 AM for Brazil



join meeting



Meeting ID:
620 285 4622
Passcode:
5uch@494

Opening: ITTO Representative
Moderator: Prof. Yongyut Trisurat
Kasetsart University, Thailand

This webinar is part of the Bimonthly Webinar Series (Jan 2025 – Oct 2026) under the ITTO-BMLEH project, "Promoting Quality Timber Production in Smallholder and Community-based Teak and Other Valuable Species Plantations in the Tropics" (PP-A/54-331A).



Presentations:

DNA barcoding for valuable species in Indonesia

Prof. Ulfah Siregar, IPB University, Indonesia



Forensic Tools for Tracing Timber Theft and Geographic Origin in Legal Teak Supply Chains

Dr. Suma Arun Dev, Senior Principal Scientist and Head, Dept. of Forest Biotechnology, KFRI, India



Q&A

More Details of the Webinar

Topic : Teak DNA Barcoding & Forensic Investigation
Date & Time : Aug 20, 2026 02:00 PM (Bangkok Time)
Join Zoom Meeting : [Click here for Meeting Link](#)



A Brief Report of

ITTO's Project Monitoring & Review Mission to Vietnam and India: “Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics” (PP-A/54-331A)

Date of visit: 25 June – 4 July 2026

Yongyut Trisurat¹, and Tetra Yanuariadi²

¹Kasetsart University, Bangkok, Thailand; ²ITTO, Yokohama, Japan



ITTO team in Vietnam



Monitoring team with IFGTB, India



Visit to the UNESCO World Heritage Site at Mahabalipuram, Tamil Nadu, India

Background

The ITTO project monitoring team comprising Project Manager Dr. Tetra Yanuariadi and Prof. Yongyut Trisurat, Regional Project Manager conducted a visit to Vietnam and India during 25 June – 4 July 2026 for the Activity D01 (Monitoring and Review) as stipulated in the project, ITTO–BMLEH Teak Project Phase II, entitled “*Promoting Quality Timber Production in Smallholder and Community-based Teak and Other Valuable Species Plantations in the Tropics*” (PP-A/54-331A), which runs from November 2023 to December 2026. The monitoring mission aims to gather on the ground implementation activities, challenges and give directions for the successful implementation of the activities for the remaining project period.

ITTO-BMLEH Teak Project Monitoring Mission to Vietnam: 25-29 June 2026

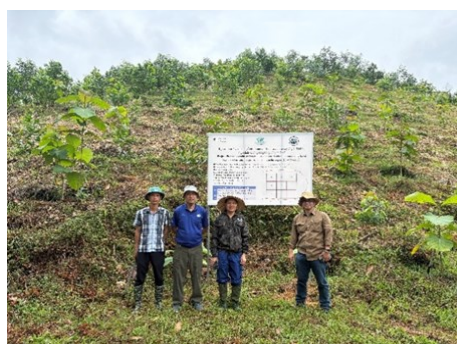
The Vietnam component imported 9,000 teak tissue culture plantlets from Thai Orchids Lab Co., Ltd., and the VAFS subsequently established four demonstration plots in Yên Bái Province, Sơn La Province, Bắc Ninh Province and Bình Phước Province. The monitoring team had the opportunity to visit two of the demonstration plots.

1) Teak plantation in Bắc Ninh province (80 km from Ha Noi), Northern Vietnam : This demonstration plot was jointly established by the Vietnamese Academy of Forest Sciences (VAFS) in collaboration with the Government Forest Company in Bắc Ninh Province. The site had previously been planted with Acacia for four to five rotations, each rotation lasting approximately five years. Bắc Ninh Province has a warm, humid subtropical climate, with an annual average temperature of around 24°C and annual rainfall ranging from 1,400 to 1,600 mm.

The experiment consisted of three treatments with four replications in the demonstration plot as detailed below:

- Treatment 1: Application of 5kg of farm manure, 300 g of phosphate fertilizer (16.5% P_2O_5), and 500 g of lime.
- Treatment 2: Application of 400g of NPK fertilizer (5-10-3).
- Treatment 3: Control (no manure or fertilizer).

Preliminary observations indicate that seedlings under Treatment 1 exhibited better growth than those receiving NPK fertilizer or the control treatment. This improved performance is likely attributed to poor soil conditions, including low nutrient availability and soil compaction. The addition of farm manure and lime improved the soil fertility. However, the plantation has experienced technical problems, suffering approximately 30% shoot dieback and emergence of coppice shoots. Possible causes of the dieback include exposure to low temperature (below 15°C) approximately for two weeks during the previous year or damage caused by insect pests or inappropriately mixed NPK fertilizer with soil. Further investigation is required before drawing any definitive conclusions.



Coppice shoot



Dieback

2. Teak plantation in Binh Phuoc province (about 70 km from HCMC): The second demonstration plot was established by Tan Phu Forest Experiment Station of VAFS in Binh Phuoc province. Binh Phuoc province experiences a tropical monsoon climate with a stable average annual temperature around 26.5°C to 27°C and no cold winters. The region generally receives an annual rainfall between 2,110 mm and 2,470 mm. Similar to the demonstration plot in Bắc Ninh Province, the experiment site had previously been planted with Acacia for four to five rotations, each rotation lasting approximately five years. But soil conditions was better. The experiment here also consisted of three treatments with four replications in the demonstration plot:

- Treatment 1: Application of 5 kg of farmyard manure, 300g of phosphate fertilizer (16.5% P_2O_5), and 500 g of lime.
- Treatment 2: Application of 200g of NPK fertilizer (16-16-8).
- Treatment 3: Control (no manure or fertilizer).

Preliminary observations indicate that tissue culture seedlings imported from Thailand exhibits better growth than those from Vietnam. Among the three treatments, Treatment 1 (the application of mixed manure, fertilizer, and lime) shows better performance than the other two treatments. No shoot dieback was observed.



Demonstration plot in southern Vietnam



Overall, the demonstration plot situated in southern Vietnam shows better performance than the one in northern Vietnam due to more favorable climatic conditions and the ecological zone. In addition, the demonstration plot in Binh Phuoc Province is managed by the Tan Phu Forest Experiment Station of VAFS, who has more comprehensive experience in silvicultural practices and research exposure than the Government Forest Company in Bac Ninh Province.

3. Visit to Teakwood Processing company in Dong Nai Province (50 km from HNMC) : Tan Vinh Cuu Joint Stock Company established in 2001 by Mr. Vo Quang Ha is located in Dong Nai Province. It is the only largest timber log processing company in Vietnam, processing roundwood to sawn wood and distributes to middle stream processing companies. It is recognized as a leading hardwood supplier in Vietnam. The wood processed by the company are of white oak, red oak, ash, beech, cherry, poplar, basswood and teak with the total volume around 250,000 m³. Imported wood include both FSC certified and without certification. Main suppliers include Latin America such as Brazil, Panama, Ecuador, Canada, USA and Europe. Teak sources are from Latin America and Africa, as well as Vietnam (5-10%), none from Asia.

Note that Lam Viet Company is the main wood furniture company in Vietnam that imports round wood and ask Tan Vinh to do preliminary process from roundwood to sawn wood and deliver to Lam Viet. Each year lam Viet imports about 25,000 – 30,000 m³. With cooperation and support from Dr. Tran Lam Dong (DDG of VAFS), Tan Vinh Timber and Lam Viet have shown interest to import teak from Forestry Industry Organization (FIO), and finger jointed rubber sawn wood from Thailand.





4. Lam Viet Joint Stock Company in Binh Province (50 km from HNMC)

<https://www.lamvietfurniture.com>

Lam Viet was founded by Mr. Nguyen Liem in Binh Duong Province, Vietnam. The company has gained international recognition in the furniture industry as one of the largest manufacturers of outdoor teak furniture and as a trusted supplier of high-quality indoor furniture exported to the United States, the United Kingdom, and Europe. Lam Viet employs approximately 1,000 workers and operates on an 85,000 m² manufacturing site equipped with advanced machinery and professional finishing lines. The company's annual sales peaked at approx. USD 41 million during 2021–2022 and have since declined slightly to around USD 31 million. Lam Viet also operates two furniture showrooms in the United States, each with an annual maintenance cost of approx. USD 300,000. Lam Viet has developed a computerized traceability system that tracks the origin of legally sourced raw materials, processing activities (including those at Tan Vinh Timber), and other stages throughout its supply chain.

Mr. Nguyen Liem, Chairman of Lam Viet, will participate in the ITTO Business-to-Business (B2B) mission to Thailand in mid-October 2026 to establish long-term business partnerships with Thai stakeholders. The ITTO–BMLEH Teak Project greatly appreciates Mr. Nguyen Liem's outstanding support and valuable contributions to the project.



ITTO-BMLEH Monitoring Mission to India

Visit to TEAKNET Secretariat at Kerala Forest Research Institute (KFRI): 30 June 2026

Prior to undertaking the field monitoring of ITTO-BMLEH project activities, the ITTO team visited the TEAKNET Secretariat at Kerala Forest Research Institute on 30 June 2026 and had held a project review meeting with Dr. Sandeep, TEAKNET Coordinator and KFRI authorities on the on-going ITTO supported SWU project activities (PD933/23 R.2 (M)) now under implementation in India for 2 years (2025-2027) financed by MAFF, Japan. TEAKNET is also a partner in information management of the ITTO-BMLEH teak project phase 1 and 2 and is continuously releasing the bimonthly ITTO-BMLEH Teak Newsletter online through their website www.teaknet.org and through BMLEH project website.



Visit to TEAKNET and KFRI

1. Project implementation by IFGTB, Coimbatore: 30 June -4 July 2026

The ITTO monitoring team, including Dr. Tetra Yanuariadi and Prof. Yongyut Trisurat, Dr. Sandeep and Dr. P.K. Thulasidas (Observers), had the opportunity to meet Dr. Rabi Kumar IFS, Director of Institute of Forest Genetics and Tree Breeding (IFGTB), the project national coordinators and team members, senior scientists, and two consultants recruited under the ITTO-BMLEH Teak Project at the IFGTB office in Coimbatore, Tamil Nadu in the afternoon on 1 July 2026.

As per the project agreement, ITTO signed a Memorandum of Understanding (MoU) with the ICFRE – Institute of Forest

Genetics and Tree Breeding (IFGTB) to implement the project on 6 November 2024, approximately one year after the project had commenced in Thailand. The activities include:

- 1.1 Conserving the genetic variation of teak and other valuable species through improved management of existing seed production areas, seed orchards, provenance/progeny trials, and clonal plantations; and
- 1.2 Supporting smallholders and local communities in improving the management of existing demonstration plots through various training sessions.

Dr. Nagarajan, Group Coordinator (Research), welcomed the ITTO monitoring team to IFGTB and invited them to discuss the project's progress. As of 30 June 2026, the progress of project implementation activities in India exceeded 90%. It is anticipated that all planned project activities will be successfully completed by December 2026. With financial support from the project, IFGTB has maintained four existing seed orchards/clonal plantations, improved the management of three demonstration plots, and monitoring three smallholder teak trials. Approximately 45 clones are being maintained as genetic resources to produce high-quality planting materials for smallholders and teak growers. Four training sessions were conducted, with a total of 1,025 participants, including representatives from State Forest Departments (SFDs), farmers, and timber merchants.



Monitoring Mission with IFGTB project team

Prof. Yongyut Trisurat, the Regional Project Manager, expressed his appreciation for the dedication and commitment of the Indian project team in implementing the project activities effectively and successfully. Dr. Rabi Kumar, Director of IFGTB, elaborated that the project objectives are well aligned with both federal and state government policies to promote large-scale teak plantations and increase domestic timber production as well as the export of value-added wood products. He noted that the Indian government currently produces millions of teak seedlings from largely unknown genetic sources and distributes to smallholders. However, many farmers lack adequate knowledge of teak cultivation and silvicultural practices. The knowledge sharing and regional networking facilitated through the ITTO-BMLEH Teak Project have made significant contributions to supporting the government's mission. On behalf of ITTO, Dr. Tetra Yanuariadi expressed his sincere appreciation to IFGTB, particularly the tireless efforts of Dr. R. Yasodha and Dr. Rekha in implementing the project.

2. Visit to Teak CSO at Walayar, Vattapara in Coimbatore

Dr. Nagarajan, Group Coordinator (Research) of IFGTB, presented that the Teak Clonal Seed Orchard (CSO) in Walayar in Coimbatore was established around 1970's. The site is located in a moist mixed deciduous forest where teak is the

dominant species, together with other valuable tree species such as *Dalbergia spp.* and *Terminalia spp.* The teak trees found in this area are natural, more than 150 years old and serve as an important source of high-quality seeds, valuable genetic resources for tree improvement, and germplasm conservation.



Visit of ITTO team to CSO in Walayar, Tamil Nadu, India

3. Smallholder teak plantation in Sulakkal, Pollachi

The monitoring team visited a 1.5 acre (0.45 ha) plantation owned by Mr. Ponraj, a part-time farmer who lives in Pollachi. In addition to teak, he cultivates other commercial crops, including papaya, sugar palm, mango, and applies drip irrigation to his plantation during the dry season in the initial two years. Mr. Ponraj established the teak plantation approximately seven years ago using seedlings and clones supplied free of charge by the government and the IFGTB. He planted 507 teak trees on a 4,500 m (0.45 ha) plot at a spacing of 3 × 3 m. The site is relatively deep and fertile. Teak trees are relatively small at the age of 7 years, with girths ranging from 25 to 30 cm only, and the crowns are closely spaced, indicating need for thinning.



Visit to the smallholder farmer, Mr. Ponraj plantation at Sulakkal

Mr. Ponraj began pruning, weeding, and watering the plantation after the fourth year at the instance of Dr. R. Yasodha, Dr. Rekha, and their colleagues, who regularly visit the plantation to provide technical advice on teak plantation management. The ITTO monitoring team also shared experiences and good management practices from other participating countries. However, Mr. Ponraj remains reluctant to adopt thinning practices. He was encouraged to visit to a nearby plantation demonstrating good silvicultural practices (the next site visited) that may serve as an effective strategy suggested to be followed.

4. Teak plantation in Jamin Uthukuzhi post, Pollachi (Mr. Nataraj Kalingarayar)

This plantation is owned by a wealthy farmer (landowner) who owns more than 120 ha of land. He resides in a luxurious teak house featuring an exceptionally large teak

entrance door (picture below), which, according to local belief, welcomes the Hindu deities and symbolizes prosperity for his family.



Teak entrance door to the luxuriously furnished teak home

The landowner cultivates a wide range of commercial crops, including papaya, sugar palm, coconut, mango, bamboo, teak, and casuarina. Irrigation is applied throughout the plantation during the dry season. In addition, he raises cattle and poultry on the property, providing farmyard manure used as organic fertilizer for the crops. The teak plantation was established in 2022 and is approximately 4 years old. It was planted using 11 high-quality teak clones supplied by IFGTB free of charge.

A total of 771 teak trees were planted on 1.7 acres at a spacing of 4×4 m. The site has relatively deep and fertile soil, equipped with an irrigation system, and has been managed using appropriate cultivation and silvicultural practices since planting.



Based on field observations, the teak trees have relatively few knots along the stems. In addition, the trees are relatively large for their age, with girths ranging from 32 to 45 cm, and the crowns are well spaced, indicating good stand management adopted. This plantation demonstrates good silvicultural practices and has strong potential to serve as a demonstration site for smallholders. Subject to the landowner's permission, IFGTB should consider organizing field visits for smallholders, such as Mr. Ponraj, to observe the plantation's management practices and performance. Such exposure would likely encourage them to adopt improved silvicultural practices and other best management practices in their own teak plantations.



5. Smallholder teak plantation in Molasuer, Tindivanam, Tamil Nadu

This smallholder plantation is owned by Mr. Ramanathan, a full-time farmer who lives in Tindivanam, Villupuram district of Tamilnadu. Mr. Ramanathan established the teak plantation (0.5 ha) approximately seven years ago in 2019 using seedlings provided free of charge by the government. A considerable number of seedlings remained unused and eventually died. He planted 507 teak trees at a spacing of 3 × 3 m and practiced intercropping during the first three years with crops such as blackgram, banana and, more recently, agarwood. IFGTB provided four (4) teak clones. The site has relatively deep and fertile soil. Similar to Mr. Ponraj, he was initially unaware of the importance of proper cultivation and silvicultural practices after planting, apart from routine weeding and watering.



The 4-yr old smallholder teak plantation



Mr. Ramanathan interacting with IFGTB Scientist Dr. Bhuvaneshwaran

Based on field observations, many trees have numerous knots along their stems, and the crowns are closely spaced and have a lot of branches, indicating that thinning and pruning are required. In addition, the teak trees planted in the middle rows are relatively small for their age due to light competition, whereas teak grows along the borders are considerably larger because of reduced competition for light and growing space.



Intercropping with Red sander- *Pterocarpus santalinus* offer additional earning

In addition to teak, he cultivates several commercial crops and tree species, including papaya, mango, red sander (*Pterocarpus santalinus*), casuarina, and other valuable trees (mixed planting). Irrigation is provided during the dry season. Income generated from the farm has enabled him to support the education of his three children, who are now well educated and reside in the United States and Tamil Nadu. The red sander trees shows faster growth probably due to its inherent drier area adaptability like its natural range of occurrence in the eastern western ghat's drier areas of India. Govt of India banned its export trade by private parties except through government timber depots as it is a restricted IUCN red listed species.

During the field visit, Dr. R. Yasodha, Dr. Rekha, and the ITTO monitoring team shared experiences and good management practices from other participating countries and strongly encouraged Mr. Ramanathan to adopt thinning as part of his plantation management. A study visit to the well-managed teak plantation in Jamin Uthukuzhi Post, Pollachi, to observe good silvicultural practices is highly recommended

6. Visit to UNESCO heritage site at Mahabalipuram: 3 July 2026

The ITTO monitoring team and IFGTB officials had an opportunity to visit Mahabalipuram, a UNESCO World Heritage Site, one out of the 24 UNESCO World Heritage Sites in India. The monitoring team expressed its sincere appreciation to IFGTB for the excellent arrangements made for the visit and for providing valuable insights into the historical and cultural significance of the World Heritage Site. The ITTO monitoring mission completed its project review activities in India and returned to Bangkok from Chennai on 4th July 2026.



In front of the marvelous shore temple at Mahabalipuram, believed to be built on a single stone by the Pallava dynasty during the 7th century AD

Upcoming Events

2nd Regional Workshop on “Microfinancing support for smallholders and community-based teak farming systems in the tropics towards high quality timber production”

14 – 16 October 2026

Hotel Grand Zuri, Yogyakarta, Indonesia

The second Regional Workshop on “*Microfinancing support for smallholders and community-based teak farming systems in the tropics towards high quality timber production*” is being jointly organized by the Ministry of Forestry, Indonesia, Kasetsart University, and ITTO during 14-16 October 2026 at Hotel Grand Zuri, Yogyakarta, Indonesia

in collaboration with the six participating countries in Asia-Pacific and Togo in West Africa. The workshop is organised as part of the second phase of ITTO-BMLEH Project aiming to support policies and strategic goals that promote the sustainable management of teak resources and plantation efforts on public and private land.

The overall goal of this workshop focuses on the planning and implementation of research and development activities of good quality timber production along with enhanced value chain processes in the wood industry and promoting carbon-supported plantation development. The specific objectives are:

- i) Review status of smallholder and community-based teak and other valuable species plantations and management in the Asia-Pacific and West Africa regions
- ii) Review policy and institutional arrangements for legal and sustainable supply chains and financial mechanisms for longer rotation towards good-quality timber production, and nature positives.

- iii) Review and share experiences on project implementations, case studies, good practices and policy options in the Asia-Pacific and West Africa regions to promote local communities and smallholders in planted teak and other valuable species, and agroforestry systems to support sustainable livelihoods

A one day Post-Workshop field excursion to community-based teak wood industries and teak plantations and agroforestry in Yogyakarta, Indonesia will be organized on 17 October 2026.

For more information and to download the provisional agenda, please [click here](#)

Participation by invitation only

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Technical Session: Processing and Efficient Utilisation of Plantation Timbers for Legal Supply Chains and Sustainable Wood Use

Session Chair:

Prof. Mario Tomazello Filho, Dy. Coordinator, IUFRO Div5.06.02 (Planted Teak), Brazil

Session Co-chairs

Dr. PK. Thulasidas, Dy. Coordinator, IUFRO RG Div5.06.00 (Plantation woods) & Div5.06.02 (Planted Teak), India
Dr. S. Sandeep, TEAKNET Coordinator, TEAKNET- India

IUFRO Research Group on Plantation Woods (RG Div5.06.00) and Working Party on Planted Teak (WP Div5.06.02) together with TEAKNET- India is jointly organising a Side Event on *“Processing and Efficient Utilisation of Plantation Timbers for Legal Supply Chains and Sustainable Wood Use”* during the Division 5 Conference in Estonia in June 2027. The Registration and Call for Abstracts is now open for submission online until 26 October 2026. Please join us and submit your Abstracts to the above session online [here](#)

This session examines promoting green supply chains for fast-growing plantation woods through value-addition and improved processing technologies with minimal environmental impacts. SWU, interlinkages between SFM, value chains, livelihoods, markets, investments and financial mechanisms is also the session focus.

IUFRO All Division 5 (Forest Products) Conference is being organised once in 4 years and the last one was in Cairns, Australia in 2023.

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Conference Website <https://www.iufro-div5-2027.ee/>

Organized by

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IUFRO RG 5.06.00 (Plantation woods) & IUFRO WP 5.06.02 (Planted Teak)



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