



# ITTO-BMLEH Teak Newsletter

December 2025 - Volume 7(6)

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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](http://www.teaknet.org) and co-hosted by Kasetsart University, Thailand.

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Federal Ministry  
of Agriculture, Food  
and Regional Identity



## The Second Project Steering Committee (PSC) Meeting of

*ITTO-BMLEH Project: Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics (PP-A/54-331A)*

### A Brief Report

The second PSC meeting of the ITTO-BMLEH Teak project Phase II entitled 'Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics' was held in Chiang Mai, northern Thailand at Holiday Garden Hotel and Resort from 10 - 12 November 2025 and a field excursion was arranged on

11-12 November to the project implementation sites and teakwood industries company in Chiang Mai and to the highest mountain peak in Thailand, the Doi Inthanon National Park. There were 47 delegates (online 11; onsite 36) attended the meeting (Cambodia, Germany, India, Indonesia, Japan, Thailand, Togo, and Vietnam).



Participants of the 2<sup>nd</sup> PSC meeting

The provisional agenda of the meeting is shown below.

### Provisional Agenda

<b><u>9 November 2025</u></b>	
Arrival of international delegates in Chiang Mai Overnight stay at Holiday Garden Hotel and Resort, Chiang Mai	
<b><u>10 November 2025</u></b>	
<b>Item</b>	<b>PSC Meeting</b>
<b>09:00–12:00</b>	Arrival of Thai delegates in Chiang Mai
<b>12:00-13:30</b>	Lunch
<b>Item 1</b>	<b>Opening of the Meeting</b>
	Welcome Remarks by Stephan Wagner, BMLEH (online) Welcome Remarks by Jennifer Conje, Director of Forest Management Division, ITTO Welcome Remarks by Prof. Prateep Duengkae, Dean of the Faculty of Forestry, Kasetsart University. Opening Remarks by Mr. Kamthorn Suwanawech, Director of Forestry Research and Development Office, RFD on behalf of the Director-General of the Royal Forest Department and Chairperson of the PSC
<b>Item 2</b>	<b>Group Photo</b>
<b>Item 3</b>	<b>Review of the project structure and progress (including financial and inputs applied)</b>
	<ul style="list-style-type: none"> <li>• The project's overall objectives, outputs, work plan, and financial matters (Prof. Yongyut, Regional Project Manager)</li> <li>• Report on the one and half year of project implementation (3<sup>rd</sup> Bi-annual report, Prof. Yongyut Trisurat)</li> <li>• Progress report by consultants (international and domestic)</li> </ul>
Coffee/Tea Break	
<b>Item 4</b>	<b>Consideration of the 3rd Yearly Plan of Operation (YPO)</b>
	Draft YPO (consisting of work plans and consolidated budgets) and proposed budget modification, if any of project implementation (Prof. Yongyut and be discussed by the members of the PSC).
<b>Item 5</b>	<b>Recommendations</b>
	Project Steering Committee will: <ul style="list-style-type: none"> <li>• Review, evaluate, approve, and adopt reports presented at the PSC meeting</li> <li>• Discuss any issues arising from presentations, including possible modification/improvement to the project implementation and/or the budget</li> <li>• Provide recommendations to contribute to the effective implementation of the project</li> <li>• The chairperson may summarize the main recommendations made during the meeting.</li> </ul>
<b>Item 6</b>	<b>Concept idea for the project phase III</b>
	Brainstorming/opportunities: Target areas, objectives and outputs (ITTO, donor, and all national coordinators)
<b>Item 7</b>	<b>Other Business</b>
	Project Steering Committee will review: <ul style="list-style-type: none"> <li>• Review the involvement of Teak Project in the 5<sup>th</sup> World Teak Conference in Kerala, including organizing a special side event</li> <li>• Other business matters</li> </ul>
<b>17:30-18:00</b>	<b>Closing Remarks</b>
	Ms. Jennifer Conje, Director of Forest Management Division, ITTO
<b>18:00-20:00</b>	<b>Welcome Dinner</b>
	Stay overnight in Chiang Mai (Holiday Garden Hotel and Resort)

11 November 2025		FIELD EXCURSION
AM		Visit Demonstration Plot in Chiang Mai (project phase II) Visit Teakwood industries (Chiang Mai Thaweephan company Ltd.)
PM		Visit SME Teakwood products Forest tree healing in urban landscape, Silviculture Research Center 1 (Chiang Mai, RFD)
		Stay overnight in Holiday Garden Hotel and Resort, Chiang Mai
12 November 2025		
		Visit smallholder teak plantation Visit Forest Landscape and Doi Inthanon National Park, Chiang Mai Stay overnight in Holiday Garden Hotel and Resort, Chiang Mai
13 November 2025		
		Departure of delegates to home countries or to Bangkok

Mr. Stephan Wagner, representing Germany's Federal Ministry of Agriculture, Food and Regional Identity (BMLEH) who joined online, extends appreciation and a warm welcome to delegates from the six participating countries of the ITTO-BMLEH Phase II project. He lauded the participating national institutions and partners for their active engagement, as well as to the Thünen Institute of forestry for its work on financing feasibility studies. He concludes the statement with appreciation for ITTO and Kasetsart University's Faculty of Forestry, in particular Prof. Yongyut Trisurat and Dr. Tetra Yanuariadi for their effective coordination and communication, and wished the 2<sup>nd</sup> PSC Meeting a great success.

In the welcome remarks by Ms. Jennifer Conje, ITTO's Director of Forest Management Division extended the appreciation of ITTO to BMLEH, Royal Forest Department, Kasetsart University and the Thünen Institute for their strong collaboration among all stakeholders for the smooth implementation of project phase II activities in the 6 participating countries. She noted that the ITTO Teak project is being regularly showcased by ITTO in international forums due to its strong impact on tropical timber production and sustainable resource management. Looking ahead, ITTO hopes that Germany, through BMLEH, will consider supporting a Phase III of the Teak project and looks forward to productive deliberations and upcoming field visits after the PSC meeting.



Welcome address by Mr. Stephan Wagner (online)



Ms. Jennifer Conje, ITTO



As Chairperson of the PSC meeting, Mr. Kamthorn Suwanawech, Director of Forestry Research and Development Office, opened the 2nd Project Steering Committee Meeting on behalf of the Director-General of the Royal Forest Department. He highlighted teak's global importance as a high-value species cultivated in nearly 80 countries and its long historical role in Thailand's national development. Mr. Kamthorn Suwanawech commends the ITTO-BMLEH Teak Project Phase II as a model international partnership led by the Royal Forest Department and Kasetsart University.



Opening remarks by Mr. Kamthorn Suwanawech, RFD

Mr. Montri Intasen, the National Coordinator for Thailand (RFD) gave a brief glimpse of the 2<sup>nd</sup> phase of the ITTO-BMLEH project and invited Dr. Tetra Yanuariadi, Projects Manager, ITTO to Chair the 2<sup>nd</sup> PSC meeting. Prof. Yongyut Trisurat, Regional Project Manager highlighted the objectives of project phase II and the key achievements accomplished so far and its connection to the previous Teak project phase I. He then presented the project's overall objectives and outputs, work plan, and financial matters, the 3<sup>rd</sup> Bi-annual report, and progress reports submitted by national and international consultants. He informed the audience that First progress report (November 2023 – June 2024), 2<sup>nd</sup> progress report (July 2024 – December 2024) and 3<sup>rd</sup> progress report (January 2025-June 2025) has been approved by BMLEH and fund released to ITTO.



Dr. Tetra Yanuariadi chairing the PSC meeting and Prof. Yongyut Trisurat on PSC meeting overview

The BMLEH is pledged to provide financial support of USD 1,413,449 to implement the ITTO-BMLEH Teak project Phase II through ITTO for 3 years or 36 months. BMLEH transferred the 1<sup>st</sup> installment of USD 142,293, the 2<sup>nd</sup> installment of 424,363 and the 3<sup>rd</sup> installment of 70,441.78 to ITTO for the total of USD 637,097.78 or 45% of the project funds.

Due to the administrative delays in signing of MoU with India and Indonesia, the implementation of project activities could not be undertaken as planned. It is hoped that the National Coordinator of India and Indonesia, can catch up all project activities in June 2026 and Indonesia can complete all planned activities by the termination of project in December 2026.

Due to adjustments in the implementation of some activities, the participating countries now request a third budget modification (BR-C). The proposed modification reflects an increase in the planned 2025 budget from USD 535,252 to USD 572,135. This figure includes the planned budget for Indonesia component. Note that the

first budget modification (Modification: BR-A), and the second request (Modification: BR-B) were approved by BMLEH in September 2024, and in March 2025, respectively.

After the project review process by Prof. Yongyut, the country partners presented the progress of activities in their respective countries. Vietnam, Indonesia, India, Thailand joined the meeting onsite and Togo and Thunen through video conference.



View of the audience of PSC meeting



Dr. Trieu from VAFS, Vietnam



Dr. Rina from Indonesia



Dr. Yesodha from IFGTB, India



Mr. Montri Intasen, RFD, Thailand



Mr. Temesgen Zana Jaffo of the Thünen Institute, Germany (online)

*Photo@PK Thulasidas*

## Recommendations

Chairperson (Dr. Tetra Yanuariadi) appreciated the achievements of the project implementation in the last 2 years. He summarized that the project spent about 41% of the total project funds, while the overall completion was approximately 50%.

After the comments from PSC members, the Chairperson summarized the deliberations as follows:

- 1) The PSC committee acknowledged the progress of project implementation from November 2023 to November 2025.

- 2) The PSC committee encourage India and Indonesia to speed up the implementation of planned activities, and hope that both countries will catch up all activities before the project termination in December 2026.
- 3) Project Steering Committee remind consultants and national coordinators to evaluate the achievements against indicators shown in the Log Frame, and asked the Regional Project Manager to take notes all comments provided by the PSC members.
- 4) The PSC committee approved the 3rd progress report and proposed work plan and budget.

### Concept idea for the project phase III

Chairperson invited the Regional Project Manager to present the concept idea for the project phase III. Prof. Yongyut Trisurat notified the PSC members that Dr. Tetra Yanuariadi, Dr. P.K. Thulasidas and Prof. Yongyut Trisurat had an initial discussion. This proposal aligns with the South-South Cooperation promoted by the Federal Ministry of Agriculture, Food and Regional Identity (BMLEH). ITTO Director of Operation Division visited the BMLEH. The draft concept idea of the project title for project phase III proposed is *“Enhancing technological innovations and value addition of short rotation teak resources in the Global South”* and the participating countries are: Asia Pacific: Cambodia, India, Indonesia, Thailand and Vietnam; West Africa: Togo; and South America: Costa Rica. Detailed proposal with comments received from the PSC members will be discussed at the close of the 2<sup>nd</sup> phase of the project.

### Item 7: Other business

**5<sup>th</sup> World Teak Conference:** The Chairperson allowed Dr. PK Thulasidas to give a brief of the ITTO lead 5<sup>th</sup> World Teak Conference 2025 held in Cochin, Kerala during 17-20 September 2025 in which ITTO organized a Side Event on Teak. A major highlight was ITTO’s thematic side event presenting progress from the second phase of the ITTO-BMLEH project, which aims to strengthen smallholder and community-based teak and valuable-species plantations in Southeast Asia and Togo. Led by Regional Project Manager Yongyut Trisurat, the 30-member ITTO delegation, including Executive Director Sheam Satkuru, emphasized the centrality of high-quality teak production to sustainable forest management and legal timber supply chains. Presenters discussed achievements from Phase 1 and ongoing work in Phase 2, including improved planting materials, enhanced silviculture and processing practices, and microfinance solutions to support smallholders during long rotation periods.

### Next PSC Meeting

The 3rd PSC meeting and the 2nd Regional Workshop will be held in October 2026 in Yogyakarta, Indonesia. Specific venue and date will be notified later.

### Closing of the 2<sup>nd</sup> PSC Meeting

The meeting adjourned at 17:30 h with a vote of thanks to BMLEH and Kasetsart University, ITTO and all online and onsite delegates for various productive discussions towards the effective implementation of the project. Ms. Jennifer Conje, Director of Forest Management Division, ITTO expressed her appreciations to the RFD, KU, Dr. Preecha Ongprasert, Prof. Yongyut Trisurat and the project staff for organizing the 2nd PSC meeting a great success. She hopes that BMLEH will consider the concept idea of the project phase III and provide financial support.

Regional Project Manager, Prof. Yongyut Trisurat notified PSC members about the 2 days of field excursion planned from 11 -12 November.

### Field Excursions

**11 November 2025- Visit to Demonstration plot in Chiang Mai:** On the morning of 11 November, the delegates visited the demonstration plot in Chiang Mai (project phase II). This plot was established during the project phase II aiming to demonstrate the 25 top-performing clones for smallholder plantations at the farm scale. These clones were selected from provenance trials based on growth performance, heartwood proportion, and bole shape (straightness of teak tree) for commercial purposes. Teak seedlings were planted in July 2025.

**Visit to Teak-wood industries (Thaweephan Co. Ltd, Chiang Mai):** Later in the morning, the delegates visited Thaweephan Co. Ltd, Chiang Ma specializing in the high end furniture and home interior in Chiang Mai. The company was established in 1955 as a traditional wood-based industry. After the logging ban imposed in Thailand in the year 1989, and the availability old- growth teak supply declined from Myanmar, the company was transformed to only high-end furniture business that includes innovative wood products for home interiors and buildings since 2010. The business is concentrated in domestic market.

A summary report of the 5<sup>th</sup> WTC 2025 is available in the website of TEAKNET and in the previous edition of newsletter volume 7 (5): 2025.



## Visit to Demonstration plot in Chiang Mai



0.8 ha demonstration plot at Chiang Mai established in July 2025



Participants at the demonstration plot



## Visit to Teak-wood industries (Thaweephan Co. Ltd, Chiang Mai)



Discussion with the CEO of the company and visit to the production line inside the factory



**Visit to Silvicultural Research Center 1, RFD at Chiang Mai:** In the afternoon the PSC members visited the Silvicultural Research Center 1 of the Royal Forest Department. The objectives of visit were :

- 1) to learn about the healing mechanism of Dipterocarp tree roots in urban landscape impacted due to road pavement on old growth *Dipterocarpus alatus* trees and potential mitigation measures of assisted soil respiration, and
- 2) to explore closed painting by tree leaves to generate additional income for local communities.

The impact of road construction led the old- growth Dipterocarp tree roots get decayed and cause fatal instability during strong winds. The silvicultural research centre taken up a comparative study of lateral root system in areas affected by the road pavement. It was found that paving Asphalt has effect on root system, compromising the growth of lateral roots. The study is explained through the below slide presentation.



Old-growth Dipterocarpus alatus trees



Soil compaction study methods digging holes and perforated PVC pipes in road pavement



The studies in detail explained by in-charge of the research centre



Tools kit used in the soil compaction study



Participants line up below the giant Dipterocarp trees



The delegates were also get familiarised with the closed painting by fresh tree leaves to generate additional income for local communities. This botanical pounding technique led to the concept of turning to "Living with the Forest", that uses an environmentally friendly production process that does not destroy nature, such as fabric dyed with natural colors (eco-printing).



Practicing preparation of painting with natural fresh leaves and drying the imprints in shadow area to get stabilise the leaf colour on the fabric

*Photo@PK Thulasidas*

## 12 November 2025: Visit to Doi Inthanon National Park

All delegates visited Doi Inthanon National Park, one among the 15 national parks located in Chiang Mai province. The park is the highest mountain peak in Thailand, 2,565 masl featured by the cool climate with rich biodiversity. Forest type is high altitude upper montane cloud forest with mossy wet floor and comprises a lot of *Quercus* and *Lithocarpus* species as well as temperate species. It is the origin of Ping River, which is 1 of 4 tributaries of Chaophraya river. The delegates feel the chilling Wachirathan waterfall, one of the most attractive accessible waterfall in the park. On 13 November 2025, the delegates departed to their home countries.



At Wachirathan waterfall



Participants at the highest peak and cloud forest in Chaing Mai, Doi Inthanon National Park.

*Photo@Saichon Mutarapat*

For a detailed report of the meeting, kindly see the PSC minutes [here](#)

**Report by**

PK Thulasidas, Yongyut Trisurat & Tetra Yanuariadi  
ITTO – BMLEH project team



## 4<sup>th</sup> Webinar: Best Silviculture Practices for Quality Teak Production

Report by

PK Thulasidas, Yongyut Trisurat & Tetra Yanuariadi  
ITTO – BMLEH project team

Silviculture practices are important drivers for enhancing quality teak production and the sustainable management of teak and other high value plantations in the tropics. In this discussion, experts from Brazil and Indonesia share insights into recommended silviculture practices for teak production with a focus on technology, social responsibility, and wood quality improvements.

This is the fourth [Webinar](#) of the joint ITTO-BMLEH webinar series, held on 20 August 2025 as part of the second phase of the ITTO project [“Promoting Quality Timber Production in Smallholder and Community-based Teak and Other Valuable Species Plantations in the Tropics.”](#) now under Implementation in 6 countries in the Asia Pacific and Togo in W. Africa. Dr. Tetra Yanuariadi, ITTO Projects Manager opened the 4<sup>th</sup> webinar series. Dr. Yongyut Trisurat, Faculty of Forestry, Kasetsart University moderated the webinar. There were two prominent speakers from Brazil and Indonesia.

The first speaker was Fausto Takizawa, M/s Teak Resources Company Ltd., Brazil whose company owns approximately 40,000 ha of teak plantations in Mato Grosso State, talked elaborately on innovative Smart Teak Forestry practices for sustainable teak production.

He began the talk with teak sustainability in the global scenario of teak market and demand with special reference to Brazil’s case study of buyers preference to legal, certified and traceable wood supply chains.

**Speaker 1**

**Mr. Fausto Hissashi Takizawa**  
Teak Resources Company, Brazil



**Smart Teak Forestry: Advancing Teak Production with Certification, Technology and Social Responsibility**





ITTO-BMLEH Teak and Other Valuable Species Plantations Project

### Invitation to Webinar:

## Best Silviculture Practices for Quality Teak Production

**Date:** Wednesday, 20 August 2025

**Time:** 3:00 PM for Thailand, Cambodia, Lao PDR, Viet Nam and Indonesia, Myanmar: 2:30 PM, India: 1:30 PM, Japan: 5:00 PM, Ghana & Togo: 9:00 AM (GMT) and 5:00 AM for Brazil



**Meeting ID:** 620 285 4622  
**Passcode:** Such@494

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

**Presentations:**

**“Smart Teak Forestry: Advancing Teak Production with Certification, Technology and Social Responsibility”**  
Mr. Fausto Hissashi Takizawa, Teak Resources Company, Brazil

**“Wood quality improvement of *Tectona grandis*”**  
Prof. Dr. Mudji Susanto, Research Centre for Applied Botany, National Research and Innovation Agency in Indonesia

**Q&A**



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).

TRC is the largest teak producing company in Brazil managing approx. 40,000 ha of teak plantations spread across 100,000 hectares of land.

### INNOVATION AND LEADERSHIP JOURNEY IN TEAK

World's largest private enterprise dedicated to teak production, operating since 1994.

One of the largest forest managers (RISI Top 30 TIMO);

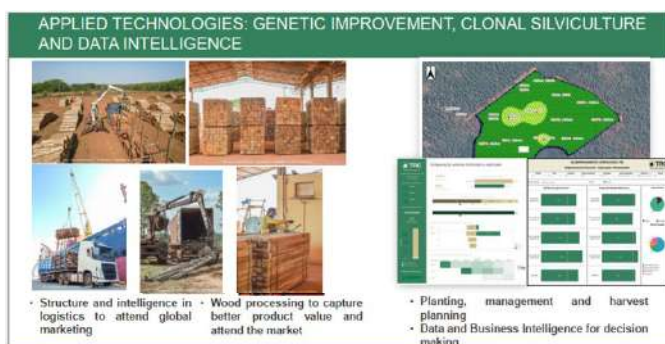
It has reached 40,000 hectares of teak plantations spread across 100,000 hectares of land and 50,000 hectares of conservation areas;

It exports teak logs and lumber from two sawmills: one in Mato Grosso and, starting in 2025, in Pará.

A pioneer in R&D for genetic improvement and clonal teak plantations in Brazil, with proven superior results.



The company adopt modern applied innovative technologies for genetic improvement, clonal silviculture to obtain maximum yield with best quality timber from plantations in 18-20-25 years and suggested better processing technology for product value and use data intelligence in logistics to global marketing strategy for the profitable investment. He outlined how the company integrates technology, partnerships, and legal compliance to advance high-quality teak production.



While at the same time engaged in sustainable teak production, the company also engaged in biodiversity maintenance and environmental sustainability. Best labour practices and workers safety are prime concerns, local communities are involved in forest value chains.



Mr. Fausto Takizawa featured TRC's livestock-forest integration model which combines teak plantations with cattle ranching. Through partnerships with cattle ranchers, this approach creates silvopastoral systems that generate a shared income model. The scheme allows for the restoration of degraded pasture lands and diversifies income sources for local communities—a potential model for community-based landholders in other jurisdictions.



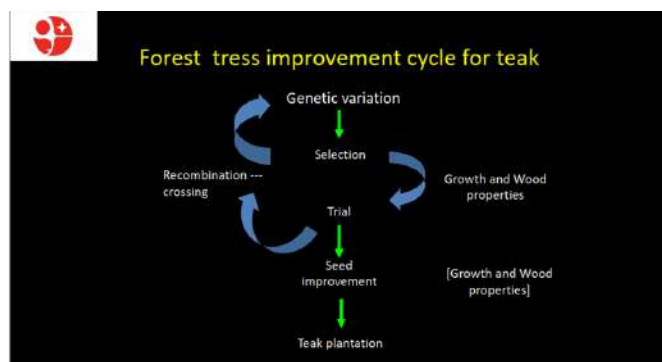
Mr. Takizawa concluded, his company followed strict compliance of international market standards such as EUDR and FSC® certification for producers to ensure credibility and market access while also strengthen timber traceability.

The second speaker was Dr. Mudji Susanto of the Research Centre for Applied Botany, National Research and Innovation Agency (BRIN), Indonesia. The country has a long established tradition of teak cultivation and management, with programmes for improvement of teak genetics and wood quality improvement for early harvesting gradually picked up since 1980's in West and East Java as shown in the below slide.

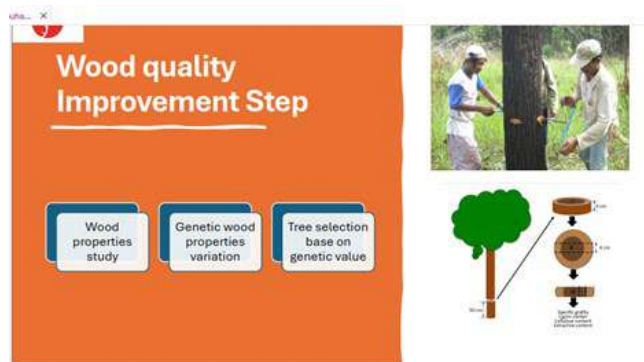




The government owned company, Perum Perhutani alone manage approx. 1.38 million ha of teak plantations in addition to the privately owned teak forests more than 0.5 million ha in Java. Dr Mudji presented the country's advances in wood quality improvement for teak, discussing both conventional and molecular breeding techniques, including selection, progeny testing, clonal propagation, mutation breeding, and genome editing. He shared that these strategies aim to enhance wood quality, growth rates, and disease resistance while contributing to the management and restoration of teak forests and plantations.



The teak tree genetic improvement cycle enable the productivity and wood quality of fast-grown teak enhanced the Mean Annual Increment (MAI) by 10-15 m<sup>3</sup>/ha/yr with the involvement of Perum Perhutani / Gadjadara University.



**Wood properties**

Carbon storage -120 t/ha (Kraenzel et al, 2003)

- Specific gravity (0.62-0.72)
- 20-30 % Lignin ( $C_6H_4O_2$ ,  $(CH_2)_2$ ,  $CH_3$ )<sub>n</sub>
- 61-65 % Carbon (C)
- 40-50 % Cellulose ( $C_6H_{10}O_5$ )<sub>n</sub>
- 20-30% Hemicellulose ( $C_5H_8O_4$ )<sub>n</sub>
- Extractive Content : Carbamic Acid ( $NH_2COOH$ ), Ammonium carbamate ( $NH_4NH_2COO$ ), Acetic Acid ( $CH_3COOH$ )

Wood Durability there was a positive correlation of termite resistance with age of tree and extractive content (Dacosta et al. 1958; Lukmandaru and Takahashi, 2008).

Dr. Mudji shared how the development and use of non-destructive methods for assessing wood density, stiffness, and durability have enabled more efficient breeding programmes and accelerated genetic gain, allowing for higher-quality teak production.

## 5<sup>th</sup> Webinar: Innovative Technology for Sustainable Teak Plantations and Volume Estimation

Report by

PK Thulasidas, Yongyut Trisurat & Tetra Yanuariadi  
ITTO – BMLEH project team

The Webinar organized on 22 October 2025 is the 5<sup>th</sup> in a series hosted by ITTO and Germany's Ministry of Food, Agriculture and Regional Identity (BMLEH) as part of the ongoing ITTO project titled "Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics (PP-A /54-331A)" implemented in 5 countries in S-E Asia and Togo in W. Africa. The webinar was moderated by Prof. Yongyut Trisurat, Faculty of Forestry, Kasetsart University, Bangkok. The event brought together forestry experts, researchers, and policymakers to explore the critical role of emerging technological advancements that can be utilized to ensure sustainable management of teak plantations

worldwide, as explored by experts from Japan and India in a webinar on innovative technology for sustainable teak plantations and volume estimation.

**WELCOME ALL PARTICIPANTS**

Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics (PP-A/54-331A)

**5<sup>th</sup> Webinar: Innovative Technology for Sustainable Teak Plantations and Volume Estimation**  
22 October 2025

Logos of participating organizations: Federal Ministry of Agriculture, Food and Regional Identity, ITTO, and various national forestry organizations.

Prof. Yongyut informed that as part of the broader ITTO-BMLEH 2nd phase of teak project, which runs through 2026, the 12 bimonthly webinar series planned to provide a platform for stakeholders to exchange up-to-date knowledge and share successful case studies that include topics such as good quality planting material sourcing, quality timber production covering best silvicultural practices, pest and disease control, certification, legality, and the role of carbon finance and incentives for sustainable plantation management of teak and other valuable species.



**ITTO-BMLEH Teak Project Phase II**

**Budget:** Federal Ministry of Agriculture, Food and Regional Identity (BMLEH) Germany USD 1.4 million  
**Duration:** Nov 2023 – Dec 2026

**Asia-Pacific**  
 Cambodia: Forestry Administration  
 Thailand: Royal Forestry Department and Kasetsart University  
 Vietnam: Vietnamese Academy of Forest Sciences  
 India: Indian Council of Forestry Research & Education  
 Indonesia: Ministry of Forestry

**West Africa**  
 Togo: University of Lomé

From Mo (Korea University) to evergreen  
 Good afternoon from Dr. M. Iddrisu

In the Opening remarks, Dr. Nurudeen Iddrisu, Director of ITTO's Trade and Industry Division, highlighted the objectives of 2<sup>nd</sup> phase of smallholder teak project aiming to improve farmer's livelihood and long-term sustainability of teak supply chain in the participating countries of Asia Pacific and Togo and looking forward to the active participation and the upcoming 2<sup>nd</sup> PSC meeting scheduled in Chiang Mai, Thailand in November 10-12, 2025.

**Opening Remarks**

**Dr. M. Nurudeen IDRISU**  
 Director of Trade and Industry,  
 International Tropical Timber  
 Organization (ITTO)

**Invitation to Webinar**  
 Innovative Technology for Sustainable Teak Plantations and Volume Estimation

Webinar on 22 October 2023  
 10:00 AM - 12:00 PM (GMT+7)  
 Zoom Link: <https://us02zoom.us/j/9876543210>  
 Meeting ID: 987 6543 210

The webinar featured two presentations. The first speaker, Prof. Naoki Tani of the Japan International Research Center for Agricultural Sciences (JIRCAS) shared the results of the study on the genomic adaptation in teak associated with local climatic conditions in Java Island, Indonesia.

### Genomic adaptation analysis as a decision support mechanism in ensuring resilience



### Genomic adaptation in teak (*Tectona grandis*) associated with local climatic conditions and insights for planting strategies to achieve higher resilience on Java Island

5<sup>th</sup> World Teak Conference @ Grand Hyatt Kochi Bolgatty

Authors

Yunosuke Onuma<sup>1)</sup>, Eko Prasetyo<sup>2)</sup>, Widiyatno<sup>2)</sup>, Sapto Indrioko<sup>2)</sup>, Mohammad Na'iem<sup>2)</sup>, Naoki Tani<sup>1,3)</sup>, Yoshihiko Tsumura<sup>1)</sup>

<sup>1)</sup>University of Tsukuba

<sup>2)</sup>Universitas Gadjah Mada

<sup>3)</sup>Japan International Research Center for Agricultural Sciences



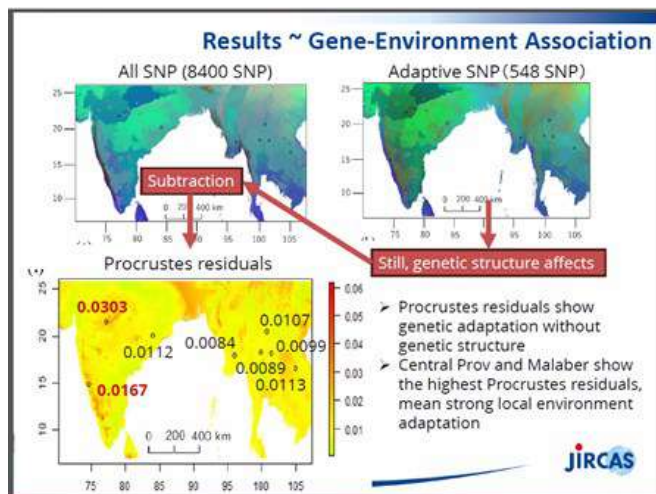
Using genome-wide sequencing data in eight sites where teak is naturally distributed (India, Thailand, Laos, and Myanmar) and nine Indonesian landraces, Prof. Tani's team in their study concluded that the teak population in Malabar and Indonesia, may have exhibited genetic resilience (i.e., sufficiently high genetic diversity) against projected climatic changes due to a lower genetic offset.

**Materials – To survey genomic adaptation of teak**

**International teak provenance trial was used for assessing genomic adaptation of teak**

Population	Origin	Nr samples
Natural Origin		122
Malabar	India	13
Central Prov	India	12
Godavari	India	11
Burma	Myanmar	24
Kovai	Laos	19
Kai	Laos	12
Hinh	Laos	11
Siam	Thailand	20
Indonesian Landraces		122





He reported that Malabar and Central Province Teak (CPT) populations of central India showed strong local adaptation and higher resilience under future climate conditions and the Indonesian landraces are more closely related to Myanmar provenances. Such information, according to Prof Tani, provides useful insights towards sustainable teak plantations by identifying future-proof planting strategies that ensure resilience to climate change. He further said that parts of Java in 2050 could resemble Malabar's current climate, suggesting that the central and eastern regions of Java may be suitable for future teak plantations. a critical resource for breeding climate-resilient teak.

The second presentation delivered by Dr. Ani Elias of Institute of Forest Genetics and Tree Breeding, Coimbatore, India discussed a case study conducted in Kerala, India, on the use of an artificial intelligence (AI)-powered framework to estimate teak plantation volume.



### Artificial intelligence (AI) powered framework for plantation volume estimation: a case study in teak (*Tectona grandis*)

Dr. Ani A. Elias

ICFRE-Institute of Forest Genetics and Tree Breeding, India

HelixOmics Analytics, India

October 22, 2025



### Applying AI towards improved estimation of teak plantation volume

Dr. Ani Elias said, the motivation behind the thought of transformative change in tropical forestry management lies in the fact that field inventory is a cumbersome process to assess diameter growth (measuring GBH), determine the harvestable timber volume, and plan the logistics for transporting harvested timber, among other tasks. The traditional method of volume estimation, however, often requires significant time and resources. According to Dr Elias, the use of emerging technologies, such as AI, in tropical forest management, particularly in field inventory, enables more efficient resource use.

Based on the above logic, Dr. Ani Elias and her team developed an AI powered framework for an accurate timber volume estimation and applied it in a case study conducted in Kerala, India in a 2 hectare of teak plantation. The new method developed uses field images and a convolutional neural network (CNN) to calculate volume. The below slides elaborate the details of the model to differentiate the teak from a population and determination of diameter of the trees and subsequent AI powered tree volume estimation. It takes only less than two minutes per tree to cover the whole process of diameter and volume estimation for standing trees.

#### Motivation

- Field inventory in a plantation is an essential element in management and decision making
  - Important to assess growth, harvestable timber volume, plan on transportation logistics of harvested timber, and facilitate 'standing auction'
- Estimation of volume using images from the field
  - Application in a smartphone
  - Real-time, compact, intuitive, and cost-effective
- Estimation of volume of harvested logs
  - End-to-end traceability and real-time inventory assessment across timber yards, felling sites, depots,...
- Feasibility
  - Proof of Concept (POC) developed
  - Python scripts to be integrated into a user interface



#### Methods – case study in Kerala

- Existing method
  - 20 × 20 m<sup>2</sup> sample plot per 2 ha of plantation
  - Measure the girth at breast height (GBH) for the trees
  - Volume calculation using volume table
- Developing method
  - 20 × 20 m<sup>2</sup> sample plot per 2 ha of plantation
  - Take images
  - Use convolutional neural network (CNN) model
    - Tree identification
    - Diameter detection and GBH calculation
  - Volume calculation using volume table

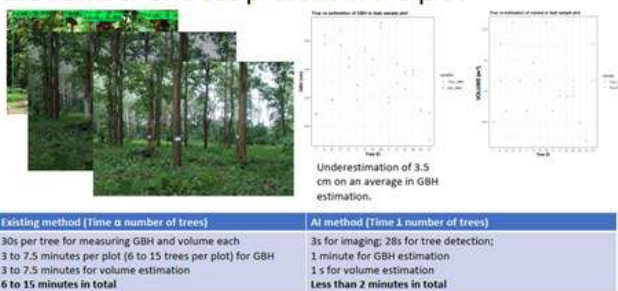


## Tree Identification – Darknet framework

- Compatible framework
  - Fewer manageable configuration
- Work in low-computational devices
  - Eg., Mobile phones



AI method is significantly faster and independent of the number of trees present in the plot



According to Dr. Ani Elias, the AI-powered method is significantly faster than the existing method and is not limited by the number of trees present in the sample plot. This can reduce reliance on resource-intensive ground survey methods and provide data-driven insights for resource optimization and planning. Her team is optimistic of further fine tune this promising AI powered technology acceptable to the concerned forest departments, plantation owners and timber traders for fast estimation of tree volume.

## Diameter detection – Deterministic framework

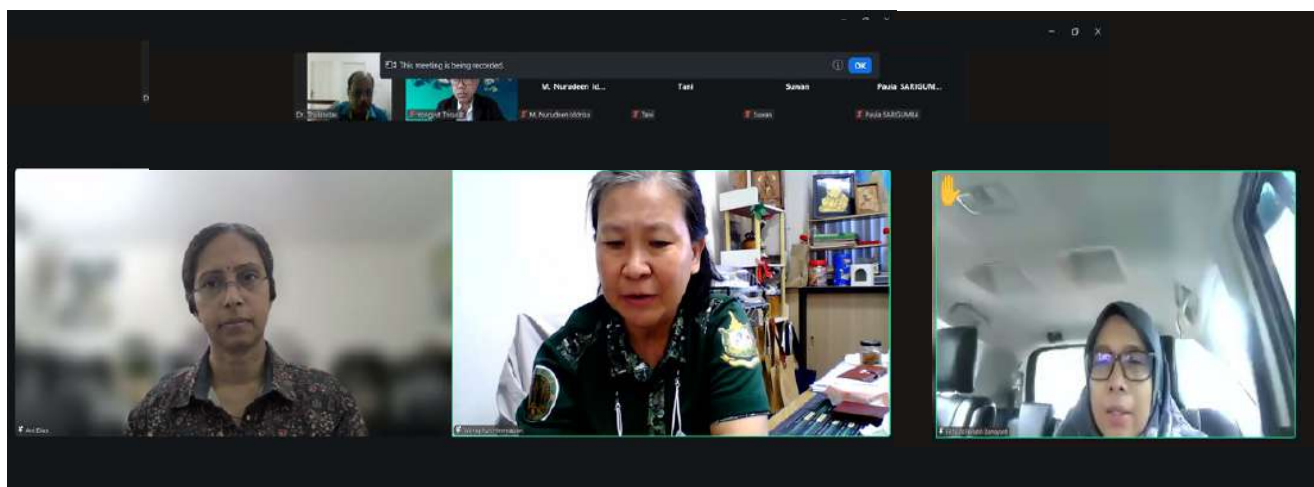
- Deterministic
  - Bounding box & edge detection
  - Pre-processing shades of color
  - Geometric analysis
- Lightweight framework
  - Compatible to a mobile phone



A game changer for forest departments, plantation owners, and timber traders

- Automated inventory of standing and harvested timber
  - A mobile application that can be used in the plantations
  - Rapid, scalable, consistent, and repeatable volume assessment across large areas
- Reduces reliance on intensive ground surveys
- Centralized geo-tagged repository for long-term tracking and carbon stock assessment
- Data-driven insights for resource optimization and planning
- Elimination of intermediaries, enabling fair pricing for farmers
- Transparent, efficient, and sustainable digital forestry management system

Please visit the project website for downloading the presentations and watch video [Click here](#)



Q & A session: Intervention from Thailand and Indonesia



## Upcoming 6<sup>th</sup> Webinar

Join us for the 6th Webinar on 18 December 2025, organised by ITTO, Germany's Federal Ministry of Agriculture, Food and Regional Identity (BMLEH) and Kasetsart University for the ITTO-BMLEH Teak and Other Valuable Species Plantations Project.

The theme of this webinar is "Timber transportation efficiency".








**ITTO-BMLEH Teak and Other Valuable Species Plantations Project**

# Invitation to

# Webinar:

6<sup>th</sup>

## Timber transportation efficiency

**Date:** Thursday 18 December 2025

**Time:** 3:00 PM for Thailand, Cambodia, Lao PDR, Viet Nam and Indonesia, Myanmar: 2:30 PM, India: 1:30 PM, Japan: 5:00 PM, Ghana & Togo: 9:00 AM (GMT) and 5:00 AM for Brazil

**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/S4-331A).



join meeting



**Meeting ID:**  
620 285 4622

**Passcode:**  
5uch@494

**Presentations:**

**Timber transportation efficiency: challenges and solution**  
 Assoc. Prof. Nopparat Kaakkurivaara,  
 Kasetsart University, Faculty of Forestry,  
 Consultant #4, Thailand

**Post-5<sup>th</sup> World Teak Conference: Adapting to future markets and environment**  
 Prof. Yongyut Trisurat, Kasetsart University,  
 Kasetsart University, Faculty of Forestry,  
 Regional Project Manager, Thailand

**Q&A**



## More Details of the Webinar

### Date

Thursday 18 December 2025

### Time

3:00 PM Bangkok / 9:00 Lomé / 5:00 AM São Paulo

### Topics:

**Timber transportation efficiency: challenges and solutions**

Dr. Nopparat Kaakkurivaara, Faculty of Forestry, Kasetsart University, Bangkok

**Post-5<sup>th</sup> World Teak Conference: Adapting to future markets and environment**

Prof. Yongyut Trisurat, Faculty of Forestry, Kasetsart University, Bangkok

### Zoom Meeting

Meeting ID - 620 285 4622

Passcode - 5uch@494

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

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*ITTO –BMLEH Teak Newsletter* is a bi-monthly electronic newsletter of the Project Team which is intended for circulation among the stakeholders of global teak sector. The views expressed in the newsletter are those of the authors and do not necessarily reflect the views of the organization. The readers are welcome to express their opinions or pass on information concerned with teak. However, we reserves the information on the project and publishing through this newsletter for our esteemed readers.

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