



ITTO-BMLEH Teak Newsletter

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The ITTO-BMEL Teak Newsletter is renamed from June issue onwards as *ITTO-BMLEH Teak Newsletter* to take effect of the changes of the logo of the funding agency as Federal Ministry of Agriculture, Food and Regional Identity (BMLEH). The 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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The Thünen Institute of Forestry and Kasetsart University join hands on a Training Workshop on Data Collection Tools for the Feasibility Study of Financial Mechanisms for Smallholder Teak Plantations

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Training workshop participants and delegates from ITTO & KU

Bangkok, Thailand

Thünen Institute of Forestry – a research institute collaborating with ITTO-BMLEH Teak project joins with Kasetsart University (KU), Bangkok, Thailand to conduct a training workshop from 13-14 May 2025 for field data collection experts and researchers selected from the five project implementing countries in Asia Pacific (Cambodia, India,

Vietnam, Indonesia and Thailand). Preceding the actual workshop, an essential task of pre-testing of data collection tools with selected smallholder teak growers and field visits to teak plantation sites and processing industry in Uttaradit and Phitsanulok provinces, Northern Thailand was conducted.

The workshop was conducted with the objectives of:

- ⇒ Update study site selection & stakeholder identification
- ⇒ Familiarize experts with the data collection tools through practical sessions
- ⇒ Pre-testing and adaptation of data collection tools
- ⇒ Data collection planning exercise, country level

Integrated Pre-Testing and Field Visits

In an initial three days of field engagement, the joint team administered the draft household survey to local smallholder teak growers and coded the data on Lime Survey while testing its technical operability. Simultaneously, the team also visited smallholder teak plots at various rotation stages and observed operations at private plantation and teak processing company (TS-Teak) and one of the teak plantation sites of the Forest Industry Organisation (FIO) at Phitsanulok. Using a structured pre-testing guide, the research team documented survey-related challenges and feedback (e.g., confusing terminology around “financial mechanisms”) with field observations, ensuring that the data collection tool’s revisions would be firmly grounded in on-the-ground realities.



Participants engaging on the training workshop held at KU



Expert interview & discussion with FIO representative at Phitsanulok



Survey pre-test: Smallholders completing the draft household survey (in group) led by briefing from the team.

Updating Data-Collection Tools

Drawing directly from those three days of pre-testing and observation, the household survey underwent substantive revisions. Technical jargons and confusing wordings/phrases were reframed with simple language and basic explanatory remarks were included to assist data collection experts. Apart from these, the proper functionality and correctness of skip-logic triggers were tested and corrections were made wherever needed.

Familiarization Workshop: Presentation and Reflection

The training workshop targeted data collection experts who are recruited to carry out the field level data collection tasks in each project target country. The workshop was held for one and half day (13-14 May 2025). On Day 1 of the workshop, data-collection experts presented the preparatory tasks they had completed: compiling district-level demographic and land-use data to construct the sampling frame. For each project country deliverable, the group provided feedback, confirming the adequacy of coverage and suggesting refinements. The session then shifted to the updated survey tools, where participants examined revised questions and conducted mock interviews to surface any residual ambiguities.

Planning and Next Steps

The workshop's final segment focused on operational planning. Partners and experts collaboratively sketched a timeline that sets the survey launch in the second week of June 2025, with a completion target in the second week of July 2025. Key activities—ranging from final preparatory tasks and logistics deployments to scheduling in-depth expert interviews with stakeholders and Focus group discussions were mapped against this timeline.

At the close of the session, the ITTO Director of Forest Management Division, Dr. Jennifer Conje delivered remarks underscoring the strategic importance of the feasibility study on financial mechanisms to promote high quality timber production through longer rotations of teak and other valuable

timber species in smallholder and community-based plantations. She emphasised her expectation that the study will be a huge contribution to fill the relatively less emphasised dimension; i.e. the socio-economic aspect that is equally critical to ensure the sustained operation of smallholder based teak and other valuable timber species plantations.

Thünen Institute of Forestry supports the 2nd Phase of [ITTO-BMLEH Teak project](#) through conducting feasibility study of financial mechanisms to promote quality timber production from smallholder plantations of teak and other valuable species in the target project countries. Further reading on the research component implemented by the institute can be accessed via the link here: [Smallholder-Teak](#).

2nd Webinar: Quality Planting Materials for Premium Teak Production

The International Tropical Timber Organization (ITTO), in partnership with Federal Ministry of Food, Agriculture, and Regional Identity (BMLEH), Germany, TEAK-NET- India and Kasetsart University, Thailand, hosted the second webinar under the ongoing ITTO-BMLEH teak project titled [“Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics \(PP-A /54-331A\).”](#) on Tuesday, 22 April 2025, the event brought together forestry experts, researchers, and policymakers to explore the critical role of high-quality planting materials in premium teak production. The webinar was moderated by Prof. Yongyut Trisurat, Faculty of Forestry, Kasetsart University, Bangkok.

Tuesday, 22 April 2025 Time:
3:00 PM (Thailand local time)

Theme: “Quality Planting Materials for Premium Teak Production”

Via Zoom: [Meeting link](#)

The webinar series is 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.” The project, which is supported by the German government, has been under implementation since 2023 in Thailand, Cambodia, India, Indonesia, Viet Nam, and Togo in W. Africa.

Invitation to

2nd Webinar: Quality Planting Materials for Premium Teak Production

Date: Tuesday, 22 April 2025

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

Meeting ID: 620 285 4622
Passcode: Such@494

Opening: Jennifer Conje
Director of Forest Management Division, ITTO
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).

Programme (one hour):

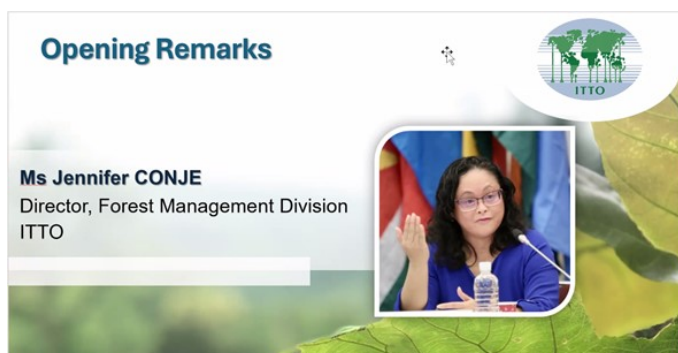
Presentations:
“Teak Genomic Resources”
Dr. Yasodha Ramasamy
Scientist G, Division of Plant Biotechnology & Cytogenetics, ICFRE-Institute of Forest Genetics and Tree Breeding, India

“Teak Genetics in the Greater Mekong Subregion and the Use of Improved Planting Materials in Thailand”
Dr. Suwan Tangmitcharoen
Director of Forest Research and Development Office, Royal Forest Department (RFD), Thailand

Q&A

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

In the Opening remarks, Dr. Jennifer Konje, Director of ITTO's Forest Management Division, emphasized that smallholder farmers, who often rely teak grown in their farmland as 'living savings bank' need better access to quality planting stock to support both their livelihood and long-term sustainability of teak supply chain. She further reinstated that without genetically superior planting materials, achieving robust growth, quality heartwood production and resilience in the face of climate change remains elusive.



The webinar featured two presentations. The first speaker, Dr. Yasodha from ICFRE- Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore, India provided insights into the advances in teak genomics.



Prof. Yongyut Trisurat, Moderator


Her talk has given the audience how whole genome sequencing and the development of DNA markers have enabled researchers to reduce breeding cycles, enhance heartwood quality, and improve the predictability of timber traits through genomic selection. Drawing from decades of provenance trials across different countries, studies on strong genetic structure among natural teak populations, Dr Yasodha illustrated how teak exhibits greater genetic diversity among provenances, regional differences in teak growth performance, genetic traits related to heartwood formation can be used to guide future breeding strategies. Genomics based tree improvement tools like GS/ CRISPER technologies offer new avenues for fast-delivering breeding methods for high quality timber production in smallholder teak plantations.




Genetic variability in teak

- Outcrossing and heterozygous
- Distinct Provenance features
- Amenable to clonal propagation
- Higher impact of environment
- Larger adaptation potential
- No more an Asian species, adapted across continents
- Chromosome number $2n = 36$
- Genome size = 340 Mbp
- Draft genome & chromosome scale assembly available

Natural teak forest – Hoshangabad, Madhya Pradesh



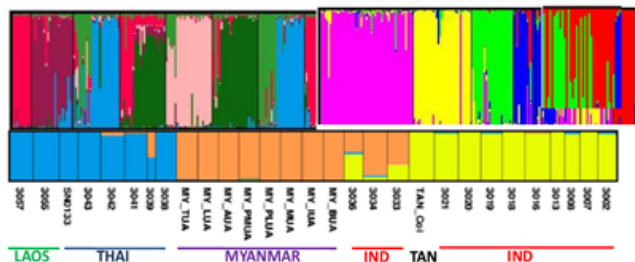
Natural teak forest – Chotta Udaipur, Gujarat



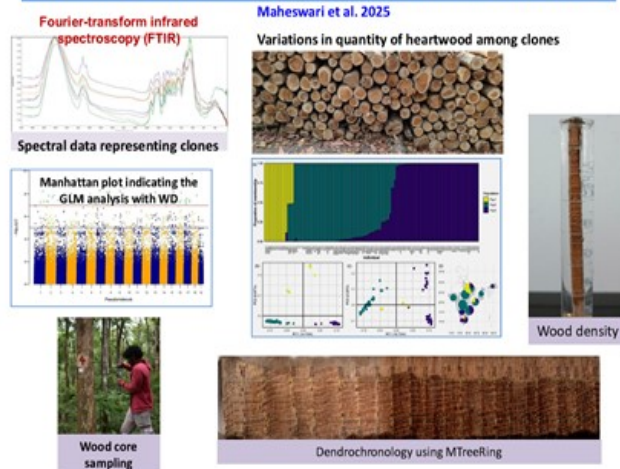
Genetic Diversity of Teak In India

Hansen et al. 2015* (Intern'l); Balakrishnan et al. 2021** (India ONLY)

Populations	No. observed alleles	Observed heterozygosity	Expected heterozygosity	Pop different
Total Mean*	6.78	0.61	0.63	0.227
Total Mean**	7.70	0.61	0.67	0.202



Genomic selection for superior heartwood formation in teak



Provenance Genetics of Teak

$$\Delta G = \frac{1}{L} \times r_{11} \times \sigma_A^2 - dF$$

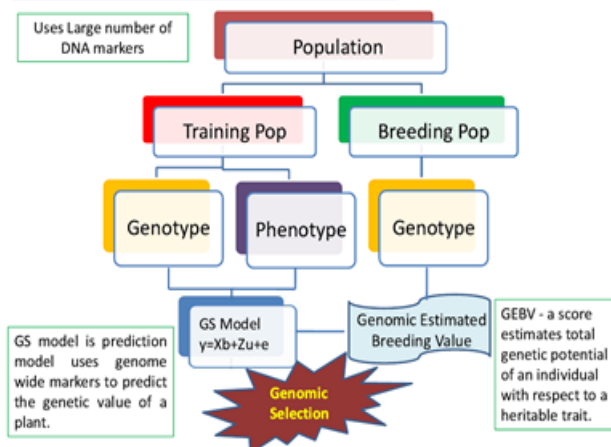
- Tree Improvement started in 1930s- Intn'l Prov. Trials in 1970s
- Provenances from India and Laos performed best for moist zones
- Nilambur provenance from moist India had the highest stem straightness and heartwood content
- Indonesian landraces performed better in the dry zones
- Clonal propagation-success due to large amount of non-additive genetic variance – High genetic gain (Callister, 2021)
- Phenotypic correlations age-age were moderate ($r = 0.54-0.90$) to high ($r > 0.90$) for timber volume and qualitative characteristics, favour early identification of superior provenances (Adu-Bredu. et al. 2019)

Way Forward

- Ongoing Teak breeding programs – other than native ranges, Malaysia, Central and South America and Africa.
- An International Institute for Teak focusing on conservation and breeding is need of the hour in the era of CC.
- Co-ordinated Teak Gene Pool establishment including all natural and landraces is required.
- Existing diversity in economic and ecological characteristics, yet to be explored.
- Integration of high efficiency breeding tools like GS/CRISPER technology is essential.



Genomic Selection in Teak



The second presentation, delivered by Dr. Suwan Tangmicharoen, Director of Forest Research and Development Office Royal Forest Department, Thailand provided a comprehensive overview of teak genetic improvement and conservation program in the greater Mekong sub-region with more emphasis on Thailand strategy.



Dr. Suwan outlined Thailand's pioneering efforts in teak genetic resources and conservation, including the establishment of the Haug Tak Teak Biosphere Reserve in Lampang Province, dominated by pure teak stands interspersed with mixed deciduous forests. He traced the evolution of teak improvement in Thailand across three phases: from species introduction to clonal selection and biotechnology integration.



Teak Genetic Resources & Conservation in Native Countries



Teak Tree Improvement in the GMS

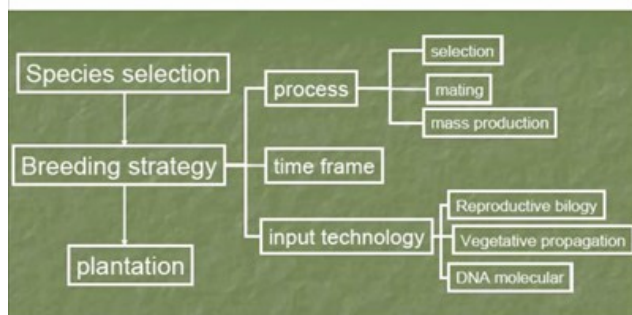


Teak Molecular Biotechnology in Thailand



Summary & Challenging Work

Tree Improvement Process



Teak Genetics in the Greater Mekong Subregion



568 Plus Trees from selected from natural and plantation

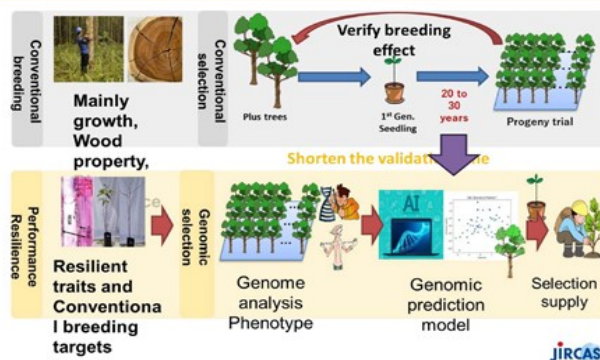


Teak Improved Seed Sources in THAILAND

Seed Orchard (784 ha) & Seed Production Area (225 ha)



Genomic selection for forest tree breeding



He also updated the status of improved teak genetic resources in natural teak growing countries like Lao PDR and Myanmar in GMS region, where substantial progress has been made to elucidate the genetic variability of teak and conservation efforts to promote long-term breeding strategy.

Conservation of teak resources in Laos



- Natural Teak occur in Xayabuly & Bokeo Provinces.
- The largest area occur in Xayabuly Province (10,000-20,000 ha).
- Lao Tree seed project, DANIDA, 2000-2003: Established 102 tree seed sources, now remaining 76 seed sources, 9 teak seed sources.



Source: Vongkhamso (2019)

Hedge Orchards in Myanmar

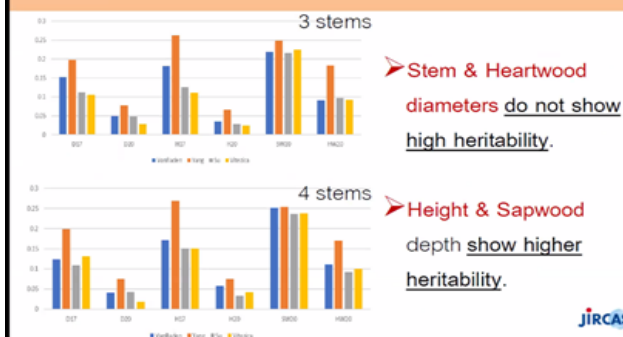


4 sites (5.75 ha) established during 2017-2021



New research, he noted, reveals that while some heartwood traits are challenging to select due to low heritability, other traits such as height and sapwood depth, offer strong genetic signals for selection. His presentation emphasized the potential of genomic tools to enhance teak productivity and called for greater regional cooperation in sharing good quality superior germplasm materials and marketing innovations to ensure that smallholders benefit from genetic improvements.

Estimating heritability



Ongoing Research

on Molecular Genetic for Teak Breeding



- Genotyping of all clones
- Focus on important traits for teak timber production
- Genetic markers are used for further selection
- develop model to estimate future traits of the seedling
- This model can help to accelerate teak breeding program



Japan International Research Center for Agricultural Sciences



2nd Webinar, Quality Planting Materials for Premium Teak Production, Zoom meeting, 22 April, 2025 by Suwan Tangmitcharoen, RFD

Summary

- *In situ* & *Ex situ* conservation of teak already applied in GMS.
- Teak genetic activities among GMS countries varied on breeding program (i.e. progeny test, clonal test, molecular breeding).
- Myanmar & Thailand could be consider at high genetic diversity.
- Height & Sapwood depth show higher heritability
- Molecular breeding is in progress. (aimed to shorten tree improvement period into seedling stage)

Challenges Work

- Promote Long-term teak breeding strategy of GMS.
- Integrate teak breeding program among GMS.
- Biotechnology tools in conjunction with intensive breeding program need to be developed.
- Improve access of better germplasm.
- Sharing Status, Knowledge & Technology among GMS.
- Cooperation among regional agencies with cooperation of ITTO/TEAKNET/IUFRO need to be strengthened.
- Young planted teak need to find innovative ways to market.

New Breeds from Teak Improvement Program (RFD no.1-10)



Donglan Silvicultural Research Station, Khonkaen province

During the Q & A session, participants raised questions about the risks of narrowing genetic diversity through genomic selection, strategies for enhancing heartwood proportion, the optimal number of clones for plantation resilience, and smallholder access to elite planting materials.

Dr. Suwan emphasized the importance of longer rotations and innovative silvicultural practices for quality timber production with higher heartwood proportion and increased durability. Dr. Yasodha stressed that genomic tools should be applied alongside strategies that maintain broad genetic diversity to prevent increased vulnerability, recommending the use of 20 to 25 clones to ensure both productivity and resilience, however, that depends on the geographic locations. Both speakers and additional experts, including Dr Doreen Goh from Sabah, Malaysia, advocated for stronger regional collaboration through platforms such as ITTO, TEAKNET and IUFRO. About 52 participants attended the webinar from different countries. The two presentations of the webinar is available for download at this link [EVENT – ITTO-BMEL TEAKPROJECT](#)



Q & A session. Intervention by Dr. Rina (bottom), Ministry of Forestry, Indonesia

Report by

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



Federal Ministry
of Agriculture, Food
and Regional Identity



ITTO Project Monitoring meeting: “Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics” (PP-A/54-331A), 14-18 May 2025, Thailand



A Brief Report

Yongyut Trisurat¹, Jennifer Conje² and Tetra Yanuariadi²

¹Kasetsart University, Bangkok, Thailand;

²ITTO, Yokohama, Japan

Project monitoring team, (L to R) Prof. Yongyut, Dr. Tetra and Ms. Jennifer

Background:

ITTO delegates, Ms. Jennifer CONJE, Director of Forest Management Division, and Dr. Tetra YANUARIADI, ITTO Projects Manager, conducted a project monitoring field visit in Thailand and a technical meeting was convened with administrative officers and project staff during 14-18 May, 2025 as part of the Activity D01 (Monitoring and Review) as outlined in the project document of 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. Phase II aims to significantly enhance the production of high-quality timber from teak and other valuable species grown by smallholders and communities in five Asia-Pacific countries (Cambodia, India, Indonesia, Thailand, and Vietnam) as well as in Togo, West Africa. The key strategies of the project include:

1. Promoting policies to secure access to high-quality planting stock,
2. Adopting best silvicultural practices,
3. Facilitating access to financing to support longer rotation periods,
4. Enhancing value addition and improving timber legality.

Over the past one and half years, Kasetsart University and the Royal Forest Department (RFD) have jointly implemented several activities in Thailand. The meeting was coordinated by Prof. Dr. Yongyut Trisurat, Regional Project Manager. The tentative program schedule of the monitoring meeting is enclosed as Annexure at the end of this document.

Highlights of the meeting are summarized as below:

- ⇒ Orientation Workshop on Field Data Collection for Micro-financing Scheme was held on 14 May 2025 at the Faculty of Forestry, Kasetsart University (KUFF). This workshop focused on financing schemes for quality timber production in smallholder and community-based teak and other valuable species plantations—one of the three key outputs of the ITTO-BMLEH Teak Project Phase II. The Thünen Institute of Forestry leads the implementation of three core activities under this component.
- ⇒ Prof. Yongyut Trisurat informed Ms. Jennifer that the Thailand component, with technical support from the Thünen Institute, conducted a pre-test of the questionnaires in northern Thailand from 7–9 May 2025. The results and insights gained have been analyzed, leading to refined draft questionnaires better tailored to the project's needs.
- ⇒ The Thünen Institute of Forestry, Germany, and the KUFF, jointly conducted the pre-test on field data collection tools in Uttaradit Province on 7–8 May 2025.
- ⇒ ITTO is thankful to Prof. Yongyut Trisurat and Mr. Temesgen Jaffo (Thünen Institute of Forestry, Germany) for the excellent organization of the Orientation Workshop on Field Data Collection for Micro-financing, which involved five national experts from Cambodia, India, Indonesia, Thailand, and Vietnam (participating onsite), as well as Togo (participating online). The face-to-face workshop provided an excellent opportunity to explore the Lime Survey platform developed by the Thünen Institute and to discuss its role in supporting data collection for the ITTO-BMLEH Teak Project Phase II.
- ⇒ Through hands-on sessions and collaborative discussions, participants clarified the functionality of the tools, addressed technical and operational issues, and finalized a practical work plan for identifying and engaging target stakeholders in each participating country.
- ⇒ These efforts represent a vital step toward advancing quality timber production among smallholders and community forestry groups.
- ⇒ The preliminary findings would be presented at the 5th World Teak Conference in Kerala, India, in September 2025.

Detailed overview of the Project Technical Meeting with KUFF and RFD and ITTO projects

1. Welcome remarks: On behalf of KU, Prof. Prateep Duengkae, Dean expressed his sincere thanks to ITTO and the RFD for placing their trust in the KUFF, and giving KU the opportunity to implement three significant ITTO projects, namely 1) the *Sustainable Wood Use Project*; 2) the *Forest Loss Monitoring Project*; and 3) the *ITTO-BMLEH Teak and other valuable species project*. The first two projects, funded by the Government of Japan, were successfully completed with a high level of satisfaction from donors and various project partners. The third project is ongoing and there is one and a half years left to complete it.

2. Review and achievements of the Forest Loss Monitoring project: Dr. Chakrit Na Takuathung, Project Coordinator, presented an overview of the project's background, objectives, target areas, key outputs, and next steps.

Project Background and Context: Due to ongoing armed conflict in Myanmar, over 81,000 refugees and asylum-seekers have sought refuge in Thailand, primarily in Tak and Mae Hong Son provinces. These displaced communities depend heavily on surrounding forests for their daily needs, placing increasing pressure on forest resources, accelerating deforestation, and threatening biodiversity.

To address these challenges, a 9-month project (July 2024–March 2025) was launched by Kasetsart University and the Royal Forest Department (RFD), with financial support from the Ministry of Foreign Affairs of Japan and technical assistance from ITTO. The project aimed to:

- Reduce forest loss and land degradation
- Improve food security in border areas
- Strengthen local capacity for forest protection and biodiversity conservation

Key Activities and Achievements

- A *GIS-based deforestation risk map (covering the period 1990–2023)* was developed. Forests near roads, camps, and settlements, but located far off from ranger stations, were identified as the most vulnerable.

- NCAPs cameras and a real-time camera monitoring system were installed and operational by March 2025 across five forest areas. These surveillance tools recorded over 6,000 photos, which led to arrest warrants for poachers.
- Local patrols were trained to use SMART PATROL tools. Data from drones and camera traps significantly enhanced forest monitoring efforts.
- Over 70 individuals received direct training in using forest protection technologies. Bilingual training materials were developed, and equipment was distributed alongside long-term support plans.
- The project emphasized sustainability by integrating conservation content into school curricula and activities at village centers.
- A final workshop was conducted to explore options for scaling up the model and attracting future funding.

Dissemination and Next Steps

- The final project report has been submitted.
- Project results were presented at international conferences, and an article summarizing the findings will be published in the upcoming issue of the ITTO newsletter, *Tropical Forest Update*.

3. Review and achievements of the Sustainable Wood Use (SWU) project

Dr. Wirongrong Duangjai, Project Coordinator, made a presentation on background, objectives, project areas, outputs, and next steps.

The SWU Project in Thailand, funded by the Government of Japan, aims to enhance sustainable domestic wood consumption in Thailand. Its development objective is to promote the use of legal and sustainable wood products nationwide. The specific objective focuses on improving wood certification policies, strengthening stakeholder capacity, and enhancing timber supply chains in selected pilot provinces. The project duration has been extended until 30 April 2025 (a three-month extension with no additional cost).

Key Outputs and Achievements

1. *Improved Policy Reform and Legal Framework Enhancement*
The project has contributed to policy reforms and improvements in the legal framework to support sustainable wood certification and trade.
2. *Strengthening the Forest Plantation Network and Industry Development*
Collaborative initiatives have been undertaken to develop forest plantations and support industry stakeholders in adopting sustainable practices.
3. *Enhancing Market Access and Business Development*
 - o *18 organizations signed MOUs and formed partnerships, expanding collaboration within the industry.*
 - o *Over 150 sustainable wood brands showcased their products at the Thailand International Woodworking & Furniture Exhibition 2024.*
 - o *More than 300 industry professionals participated in business networking and trade discussions during the EXPO Woodwork event.*
4. *Capacity Building and Consumer Awareness*
 - o *Advanced training programs were provided for students and professionals.*
 - o *Urban consumer awareness campaigns were launched through digital content, exhibitions, and workshops to promote the environmental benefits of using domestic wood.*
 - o *Legal compliance training ensured that wood producers and manufacturers meet international trade and certification standards.*

Additionally, the project produced quarterly newsletters and two technical reports:

- *Rubber Supply Chains in Thailand*
- *Teak Supply Chains and Policy in Thailand*

In conclusion, the project has significantly contributed to fostering an environment that supports urban consumer awareness that paved the way for increased demand for legally certified wood products in Thai society. Dr. Tetra Yanuariadi added that discussions are underway for a potential second phase of the project, which would focus on the development of “wooden cities” as a model for sustainable urban living.

4. Review of ongoing implementation of the ITTO-BMLEH Teak and other valuable species project

Prof. Dr. Yongyut Trisurat, Regional Project Manager, delivered a presentation on ITTO-BMLEH Teak Project Phase II. The Phase II aims to significantly enhance high-quality timber production from teak and other valuable species cultivated by smallholders and communities in five Asia-Pacific countries—Cambodia, India, Indonesia, Thailand, and Vietnam—as well as Togo in West Africa.

The project is structured around three key outputs that collectively support its overall objective:

Output 1: Strengthened supply chains for smallholder and community-based plantations through the availability of high-quality planting stock and the adoption of improved practices in silviculture, timber processing, and legality verification.

Output 2: Assessment and enhancement of financing schemes to improve the economic viability of smallholder and community-based plantations, supporting long-term investment in quality timber production.

Output 3: Strengthened regional and international collaboration, information sharing, policy development, knowledge management, and networking to promote sustainable smallholder teak and other species plantations.

The project includes 11 core activities, focusing on:

- Promoting financial mechanisms that support long-rotation, high-quality teak production
- Facilitating access to voluntary carbon markets, offering smallholders incentives aligned with global climate change mitigation goals
- Enhancing policy implementation and encouraging regional and international cooperation to improve the economic returns and sustainability of smallholder plantations

Project Implementation Status

- Thailand and Togo signed their MOUs and began on-the-ground implementation in November 2023.
- Cambodia and Vietnam commenced activities in January 2024.
- India experienced a delay in signing its MOU, finalizing it in November 2024, but has since accelerated implementation.

- Indonesia signed its MOU in March 2025, but project implementation is still pending due to delays in finalizing the Project Management Team.

To support project execution:

- International consultants (managed by ITTO) and national consultants (recruited by National Coordinators) have been successfully appointed in all countries except Indonesia, where recruitment is still pending.

The project is progressing well in Cambodia, Thailand, Vietnam, and Togo. However, implementation in India is currently behind schedule, with an average completion rate of 30% after one and half years. In Indonesia, project activities are expected to commence in June 2025.

Among the six participating countries, Thailand's implementation is in the advanced stage, because of :

- Thailand began project activities in November 2023.
- The agreement between ITTO and Kasetsart University is recognized as a form of academic and research cooperation, which imposes fewer bureaucratic barriers to implementation.
- The Project Secretariat is based at Kasetsart University, allowing for efficient logistics and coordination, with strong support from the Royal Forest Department (RFD) and other key stakeholders.

As of 31 March 2025, the progress of implementation activity is shown below:

Output/activity	Detail	Progress
Output 1: Supply chains of smallholders and community-based teak and other valuable species plantation and management systems have been strengthened etc.		
A 1.1	Conserve teak and other valuable species genetic variation	37%
A 1.2	Demonstration plots and field training	21%
A 1.3	Promote timber legal compliance in smallholder/community plantations	20%
Output 2: Financing schemes for quality timber production in smallholders and community-based teak and other species plantations have been analyzed		
A 2.1	Feasibility study for direct contracts/out-grower schemes with sourcing companies	20%
A 2.2	Promote micro-lending schemes	20%
A 2.3	Reduce transaction costs and help improve access to micro-credits	20%
A 2.4	Study to access to voluntary carbon markets to increase revenues from longer rotation	20%
Output 3: Regional and international collaboration, information sharing and knowledge management, networking, etc. have been strengthened		
A 3.1	Produce and disseminate outreach and training materials	38%
A 3.2	Support and facilitate teak networking in ITTO's member countries	20%
A 3.3	Organize two Regional Workshops	50%
A 3.4	Support sharing lessons (IUFRO 2024 & 5 th WTC 2025)	50%
	Range: 20-50%	Average 28%



Project monitoring review meeting at KUFF chaired by Dr. Jennifer Conje, ITTO

Detailed activity of project implementation are presented in the following sections.

Visit to Mae Ka Silvicultural Research Station, Phayao Province

Mr. Poonsak Chaiduangkaew, Chief of Mae Ka Silvicultural Research Station gave an overview of the Mae Ka Silvicultural Research Station. Mae Ka is recognized as the first teak seed orchard in the country, created to supply superior teak seeds for plantation development. The Mae Ka Seed Orchard, originally named as Teak Improvement Centre (TIC), was established in 1965 under a bilateral agreement between the Royal Thai Government and the Royal Danish Government (DANIDA). It is one of two main teak seed orchard stations in Thailand—other being the Mae Huad Teak Plantation in Ngao, Lampang.

The Mae Ka Silvicultural Research Station is currently administered by the RFD and covers an area of 392.64 hectares (2,454 rai), divided into 27 plots:

- ✓ 20 plots contain superior teak trees aged over 10 years
- ✓ 6 plots contain teak trees aged between 2 to 7 years

The main mission of Mae Ka Silvicultural Research Station is:

1. Teak Seed Orchard Management and Maintenance: All teak trees are geo-referenced and mapped, with detailed records kept on their growth and characteristics.

2. Seed Collection, sale and propagation: The average annual yield of seed was around 700 kg. Due to seasonal variability and extreme climate events, yield in 2025 dropped to less than 50 kg in total (ranging from 0.2 to 3 kg per tree).
3. Development of vegetative propagation techniques to produce high-quality teak seedlings using both budding and cutting techniques

The second presentation was made by Ms. Somporn Khumchompoo, Forestry Research and Development Office, RFD on Teak Genetics in Thailand. Ms. Somporn informed that she received funding support to establish demonstration plots during both Phases I and II. Teak improvement efforts in Thailand can be broadly divided into three key eras:

1. Seed collection and establishment of seed orchards
2. Clonal testing and propagation
3. Biotechnology and DNA-based selection

Clonal testing and propagation research using budding and cutting techniques began in 2000 and has since progressed through several phases. During project Phase II, 25 teak clones were selected for further development, based on three main criteria:

1. Growth performance
2. Form (straight trunk)
3. Heartwood proportion

These clones are intended for promotion among smallholder plantations at the farm level. Two new demonstration plots are planned—one in Chiang Mai Province and another in Kanchanaburi Province. Planting is scheduled for late May in Kanchanaburi and July in Chiang Mai. It was observed that 4 out of the 25 selected clones, previously planted at Mae Saroi Plantation in Phrae Province under Forest Industry Organization (FIO) management, showed no signs of teak borer infestation. Preliminary investigation suggests that these clones evaded infestation of teak borer (*Xyleutes ceramic*), may be due to thin, smooth bark. In contrast, trees with thick, fissured bark appear more susceptible, as these features provide favorable conditions for larvae and are less easily cleaned by rainfall. However, further scientific research is needed to confirm these findings.

In the Q&A Session, Prof. Yongyut Trisurat added that 511 mother trees were originally selected from natural teak forests, primarily in northern Thailand. Prior to the start of project Phase I, about 450 mother trees had already been evaluated through clonal tests. Evaluation of the remaining trees were completed during Phase I, with three demonstration plots established in Lampang, Khon Kaen, and Kanchanaburi provinces.

To the specific questions raised by Ms. Jennifer about providing opportunities for graduate students collaborate on research, Prof. Yongyut answered that several graduate students are conducting research on topics such as teak pollination and biological control measures for teak borer mitigation in this station.



Monitoring team's visit to Mae Ka Silvicultural Research Station

Visit to commercial teak plantation owned by Sri Trang Company, Nan Province

The ITTO delegates and the teak project team were accorded a warm welcome by the administrative staff of Sri Trang Rubber Plantation Ltd. Sri Trang Group is the largest rubber plantation company in Thailand, originally established in the southern part of the country. Due to increasing global competition in the rubber industry and poor land suitability in certain areas, the company diversified into teak plantations in 2000.

Teak Plantation in Nan Province: The company owns two teak plantation plots in Nan Province, at Pua District covering approx. 180 ha. Sri Trang purchased the land in 2000 and prepared it for teak planting using heavy machineries in the light of labor shortages. The company followed intensive silvicultural practices, pruning, thinning, and fire control. Trees are planted at a spacing of 4x7 meters to accommodate machinery. The survival rate exceeds 95%, and the growth performance of the teak trees is superior to those in plantations managed by the Forest Industry Organization (FIO) and smallholders. Sri Trang also supports intercropping by allowing nearby villagers to cultivate crops such as upland rice, pumpkin, and corn in the plantation area during the first 4–5 years. This win-win model benefits both parties: villagers use the land rent-free, while the company saves on weeding, fire prevention, and fertilizer costs.

Ms. Jennifer, ITTO recommended that the company should:

- Diversify its markets, exploring opportunities in the Middle East.
- Strengthen connections with domestic markets and wood-processing industries to develop value-added products aligned with evolving consumer preferences, especially among younger generations.
- Utilize the ITTO's Tropical Timber Market Report, published biweekly, for updated market information.
- Encourage staff to attend the upcoming 5th World Teak Conference (WTC 2025) in India to build networks and gather market intelligence.

Visit to teak wood-based industry in Phrae Province (DM Furniture Design Company Limited)

Mr. Ekkapong, DM Furniture Design Co. Ltd informed the visiting ITTO delegates that there are approx. 1,000 small and medium-sized enterprises (SMEs) involved in the teak wood industry in Phrae Province. Among these, about 50 are classified as medium to large-scale companies. DM Company is one such enterprise. It currently has around 40 members, and it is estimated that over 20 similar community enterprises operate within the province.



Visit to commercial teak plantation in Pua District, Nan Province

The advantage and highlights of this community enterprise are:

1. Stronger bargaining power with middlemen and government officials
2. Mutual support in areas such as marketing, design, and production
3. Reduced competition among members through collaboration

It was acknowledged that many small wood-processing businesses have struggled in recent years due to economic downturns and intense competition. However, his company has been less affected, as it targets the medium- and high-end markets, which still have the purchasing power for premium, well-designed products.



ITTO team lead by Ms. Jenifer at DM Furniture Design factory, Phrae Province

To the specific questions raised by the ITTO team about additional support required for the teak wood-based industry to flourish, Mr. Ekkapong outlined the following priorities for strengthening the sector:

1. Increased market opportunities
2. Enhanced capacity for product and design improvement
3. A shift in the government's role from regulator to facilitator

Even though the new Forestry Act of 2019 reclassified teak from a restricted species to a regular economic species—allowing landowners to harvest their trees—transportation and processing still require permits. This regulatory burden remains a challenge to smallholders. Mr. Ekkapong believes that market demand should be the key driver of the supply chain and is confident that plantation-grown teak will become essential to



the future of the teak wood-based industry. His company alone requires at least 10,000 cubic meters of teak annually to meet industry demand.

Visit to FIO Mae Saroi Reforestation, Wangchin, Phrae Province

Mr. Preecha Rodon, Chief of the station, briefed the activities of the station which was established in 1978 and covers an area of 1,718 ha. It comprises 20 plantation plots, the size of each plot ranges from 50 - 100 ha (300–600 rai). The station's main responsibilities include:

1. Forest plantation
2. Timber harvesting
3. Maintenance and pest control



Delegates at FIO timber depot

For the plantation activities, high-quality seedlings are sourced from the Mae Mo Station—one of the two major FIO seedling production centers in northern Thailand. Silvicultural practices and plantation maintenance are carried out from year 2 to year 6. The typical rotation period for FIO plantations is 30 years, but recently it has been extended to 40 years. The station harvests approximately 100 to 500 cubic meters of timber annually. About 40% of this is sent to the FIO sawmill, while the remainder is sold to private sector buyers and small- to medium-sized

wood-processing enterprises in the Northern provinces. FIO manages around 200 stations across the country and produces approximately 40,000 to 60,000 cubic meters of teakwood annually. All FIO plantations are FSC certified by the Forest Stewardship Council.

To the queries raised by the ITTO delegates, it was clarified that about 30% of the planted teak trees are affected by teak borers and as a response, the station is experimenting mixed-species plantations with iron wood and rosewood. FIO is state autonomous agency under the Ministry of Natural Resources and Environment. According to Mr. Preecha, government funding covers approx. 30% of the agency's total expenses. The revenue from timber sales is used to support the organization's operations and partial income remitted to the Ministry of Finance.

Visit to smallholder plantations in Phrae Province

This smallholder teak plantation was established in 1986 under the government's nationwide reforestation program and owned by Mr. Amu Tipwong. Government provided financial support of approx. USD 600 per ha (3,000 baht per rai). He obtained high-quality teak seedlings from the RFD. The current teak stand is 18 years old coppice trees, following the initial harvest in 2006.

The ITTO delegates and project team observed that the crown cover is closed, and tree sizes vary significantly. This uneven growth is likely due to light competition and the absence of pruning and thinning. This suggests that many smallholder teak growers lack understanding of proper silvicultural practices—the importance of pruning and thinning for producing high-quality timber.





The team at smallholder teak plantation in Phrae province

Visit to teak clonal testing site (Project Phase I)

Ms. Somporn Khumchompoo, Royal Forest Department official and Mr. Arkon Tunrat, Chief of Kroengkrawia Forest Plantation, Kanchanaburi province briefed the activities of the station. Ms. Somporn informed that there are two demonstration plots in Kanchanaburi Province:

1. A clonal test of the plus trees (Phase I); and
2. A clonal test of 25 clonal champions for smallholder plantations.

The site visited by the ITTO delegates was established during Phase I of the project. The 2nd new site is located quite far away, and could not be visited. It was observed that the seedlings at the demonstration site are growing very well compared to those in the FIO plantation, especially the clones sourced from Lampang. During the visit, the ITTO delegates asked the Chief of the FIO station whether teak trees at the site are affected by teak borers. Based on his experience of over 10 years at the station, he reported no observed evidence of borer damage. This is likely due to the surrounding intact forest, which supports a high number of natural insect predators. In contrast, plantations in northern regions are often surrounded by extensive agricultural land where farmers frequently use pesticides. The Chief suggested that pest insects may disperse more easily in such environments and eventually inhabit forest plantations.



Delegates at clonal testing site at Kanchanaburi province



The delegates who joined the field visit included 7 persons: Dr. Jennifer and Dr. Tetra (ITTO); Ms. Somporn and Mr. Montri (RFD); Prof. Yongyut and Ms. Saichon (KU); Mr. Suchart (PSC member).

ANNEX 1

Tentative Itinerary for ITTO Monitoring (Ms. Jennifer CONJE and Dr. Tetra Yanuariadi) during 14-18 May 2025

Date/time	Activity	Remarks
13 May 2025	Arrival of ITTO Delegates (Dr.Jennifer Conje and Dr. Tetra Yanuariadi)	Pick-up Stay overnight at Maruay Hotel, Bangkok
14 May 2025		
11.30-11.45	Closing remarks for the Orientation Workshop on Data Collection Tools for Micro-financing Sscheme held at KUFF	Ms.Jennifer CONJE (Director of Forest Management Division, ITTO)
11.45-13.15	Lunch	KUFF
13.30-15.00	Project Technical Meeting with KUFF and RFD and ITTO projects overview	KUFF
	Dr. Suwan Tangmitcharoen (Director of Forestry Research and Development) Ms. Somporn Khamchompoo (senior scientist responsible for demon. plot) Representative from Forestry International Cooperation Office	RFD
	KU – Prof. Prateep Duengkhae (Dean of the Faculty of Forestry, KU – Teak project) Prof. Yongyut Trisurat (Regional Project Manager) Dr. Chakrit Na Takuathung (Project Coordinator of Forest Loss Monitoring) Dr. Wirongrong Duangchai (Project Coordinator of SWU project) Ms. Saichon Mutarapat Project Secretary	
	PSC member – Mr. Suchat Kalyawongsa Mr. Sapol Boonsermsuk	
15.30 – 16:00	Depart to Don Mueang Airport	
17:15	Departure to Chiang Mai province	ITTO: Jennifer and Tetra KU: Yongyut and Saichon RFD: Somporn, Montri
	Stay overnight in Chiang Mai province	Duangtawan Hotel
15 May (Mae Ka Silvicultural Research Station for good quality planting material)		
Morning	Travel to Mae Ka Silvicultural Research Station, Phayao Province (visit to teak seed orchard and good quality planting material)	Approximately 2:30 hrs
	Lunch	Phai Yao province
Afternoon	Travel to Nan	Approximately 2:30 hrs
	Stay overnight in Nan province	Nam Thong Nan Hotel
16 May (visit to commercial plantations with intensive silvicultural practices and saw mill)		
Morning (10 am)	Travel to Pua district, Nan province	approximately 2 hrs.
	Lunch	Pua district
Afternoon (1:00-3:00 pm)	- Visit commercial teak plantation by Sri Trang Company - Travel to visit FIO teak sawmill at Rong Kwang District, Phrae province	Approx. 1:30 h
	Stay overnight in Phrae province	Huen Khan Thong Hotel

17 May (visit to community-based wood industry and smallholder plantations)		
Morning	Visit teak wood-based industry in Phrae province	D M Furniture Design Company Limited
Afternoon	Visit smallholder teak plantations in Phrae province affected by insect pests	Mae Saroi Forest Plantation
	Travel to Chiang Mai	Approx. 2 hrs
7:05 pm	Departure to Bangkok (Don Mueang airport)	1:15 hrs
	Stay overnight at Maruay hotel	
18 May (visit to teak clonal test and teak logging)		
Morning	Travel to Thong Phaphum district, Kanchanaburi province	Approx. 4 hrs
	Lunch	Thong Phaphum district
Afternoon	Visit demonstration plot of project phase I at FIO plantation	Kroengkrawia Forest Plantation
	Stay overnight in Kanchanaburi province	Hotel
	End of program	
1 May	Dr.Jennifer stay back to attend another meeting in Kanchanaburi province	
	Other members returned to Bangkok	

Join us for the 3rd Webinar series of the ITTO-BMLEH Teak project!

17 June 2025

Learn how cutting-edge tissue culture techniques are transforming teak propagation, boosting productivity, and supporting sustainable smallholder forestry communities and plantations. The webinar series is part of the second phase of the ITTO-BMLEH Teak project "Promoting Quality Timber Production in Smallholder and Community-based Teak and Other Valuable Species Plantations in the Tropics." The project, which is supported by the German government, has been under implementation since 2023 in Thailand, Cambodia, India, Indonesia, Viet Nam, and Togo in W. Africa.




ITTO-BMLEH Teak and Other Valuable Species Plantations Project

Invitation to Webinar: Teak Seedlings Innovation via Tissue Culture

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).



Date: Tuesday, 17 June 2025

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



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

join meeting

Programme (one hour):

Presentations:
"Sustainable Planting Materials Production via Tissue Culture"
 Dr. Doreen Goh
 Managing Director
 YSG Bioscience Sdn Bhd Sabah, Malaysia

"Good Quality Teak Tissue Culture Seedling"
 Dr. Paiboolya Gavinlertvatana
 MD of Thai Orchid Ltd. A private teak/rubberwood seedling company, Thailand

Q&A





Tuesday, 17 June 2025
Time: 3:00 PM (Thailand local time)

Theme: “Teak Seedlings Innovation via Tissue Culture”

Via Zoom: [Meeting link](#)

Meeting ID: 620 285 4622
Passcode: Such@494

Featuring expert presentations from

 Dr. Doreen Goh – Managing Director, YSG Bioscape, Sabah, Malaysia
 Dr. Paiboolya Gavinlertvatana – MD, Thai Orchid Ltd., Bangkok, Thailand

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