Federal Ministry of Food and Agriculture

REGIONAL WORKSHOP ON

"Enhancing Smallholder Plantations Towards Quality Timber Production of Teak and Other Economic Species and Carbon Neutrality in the Tropics"

18-21 September 2024, Bangkok, Thailand

Contents

WELCOME AND OPENING REMARKS

Welcome Remarks

Dr. M. Nurudeen IDDRISU
Director of Trade and Industry Division
ITTO, Japan

It is a great honor and pleasure for me on behalf of ITTO to welcome you all especially the six (6) participating countries, namely Thailand the host country of this workshop, Cambodia, Indonesia, India, Vietnam and Togo to this Regional Workshop which is Phase II of the Teak Project entitled ***"Enhancing smallholder plantations towards quality timber production of teak and other economic species and carbon neutrality in the tropics".*** This project is built upon the successes chalked in Phase I and we wish to express our heartfelt gratitude to the Federal Ministry of Food and Agriculture (BMEL) of the Federal Republic of Germany for this kind support channeled through ITTO to fund and implement this project.

This regional gathering of six (6) participating countries in the project and other stakeholders present, will provide a forum for us to share information on teak and other valuable species to support smallholders to improve on the quality of their plantation, support communities to build sustainable and resilient local economies as well as contribute towards carbon emission reduction through tree plantation.

As noted from the workshop program, we have a strong line up of speakers that will delve into policy, sustainable and legal supply chains, among others. These will provide valuable inputs to the development of strategies and policy improvement in the participating countries to strengthen plantation management of teak and other valuable species.

On behalf of ITTO, I want to thank the Project Steering Committee led by Prof. Yongyut Trisurat for organizing this Regional Workshop.

I wish all participants fruitful and productive deliberations.

Welcome Remarks

Mr. Stephan Wagner
The Federal Ministry of Food and Agriculture (BMEL), Germany

On behalf of the Federal Ministry of Food and Agriculture, Federal Republic of Germany (BMEL), who is providing financial support to the Phase II of the teak project entitled "**Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics"** - through ITTO, I would like to welcome distinguished speakers, participants, and delegates from the six participating countries, namely Cambodia, India, Indonesia, Thailand, Vietnam and Togo attending the today's Regional Workshop on **"Enhancing Smallholder Plantations Towards Quality Timber Production of Teak and Other Economic Species and Carbon Neutrality in the Tropics"**.

The ITTO-BMEL Project Phase II was built on the outcome and achievement of the project phase I to mainstream the production of high-quality timber from teak and other valuable species plantations established by smallholders and communities in the Asia-Pacific and West Africa. In addition, the project will address pending issues facing smallholder tree plantations such as accessing to optimized financial mechanisms to promote longer rotations, value addition, and improved silviculture practices., timber processing and legality throughout the supply chains of smallholders and community-based teak and other valuable species plantations.

The outputs of this Regional Workshop will not only be shared among the six participating countries in the Asia-Pacific and West Africa, but also will be presented to the larger audience at the 5th World Teak Congress to be held in Kerala,India in 2025.

On behalf of the Federal Ministry of Food and Agriculture of the Federal Republic of Germany (BMEL), I would like to thank the keynote speakers (Dr. Khwanchai Duangsathaporn, Dr. Thulasidas and Dr. Osamu SAITO), technical speakers to share your great experience with over 60 participants attending this regional workshop.

I also greatly acknowledge ITTO, the RFD, Faculty of Forestry, Kasetsart University, in particular the project team for organizing this regional workshop and arranged logistics for the meeting in Bangkok and field visits in Nan, Phrae and Lampang Province.

I wish the Regional Workshop a great success.

Welcome Remarks

Mr. Bannarak Sermthong
Deputy Director-General of the Royal Forest Department, Thailand

It is my great privilege and pleasure to represent the Royal Forest Department as one of six participating agencies to deliver Opening Remarks today in the 1st PSC meeting on the occasion of the **Regional Workshop on "Enhancing Smallholder Plantations Towards Quality Timber Production of Teak and Other Economic Species and Carbon Neutrality in the Tropics".**

Teak (*Tectona grandis* L.f.), the timber of kings, is considered a priority species in plantations nearly 80 countries for large-scale cultivation, and the versatile fast-growing timber offers the best opportunity to produce quality timber for a variety of end-uses and provide livelihood for forest dependent communities. It has been used for many centuries for the manufacture of a wide range of products.

In olden days, teak was a main timber product foreign exchange earnings and capital for national development for Thailand, Myanmar and India. The Royal Forest Department (RFD) was established to manage teak forest and trade in 1896 (128-year-old). Moreover, teak was recognized as a restricted species, that means individuals could not cut the trees and trade it without permission from the government. Thus, teak is mainly planted by the RFD for conservation and by Forestry Industry Organization (FIO) for commercial purposes. However, the Article 19 of the Forestry Act of 2019 changed the teak status to an economic species. Thus, it attracted lot of interests from smallholders and business entities for establishing small- scale and large-scale plantations.

Despite widespread plantations, the productivity of planted teak is generally low, particularly in the plantations established by smallholders and local communities. This is due to poor quality of planting stock, inadequate silvicultural practices, premature harvesting as a result of limited financial resources to retain the tree to produce quality timber in long rotations, and weak marketing and value chains. Needless to say, you will learn more details from various presentations at the tomorrow's Regional Workshop.

Distinguished Guests, Ladies and Gentlemen,

Today's Regional Workshop is one of important activity under the ITTO-BMEL **Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics (PP-A/54-331A) or ITTO-BMEL Teak Project Phase II.** Presentations cover various topics ranging from policy relevant, teak and valuable species supply chains and sustainable wood use, silvicultural practices, and the contribution of smallholder plantations to nature, society and culture.

On behalf of the RFD, I would like to thank all distinguished speakers and participants attending the Regional Workshop. I hope you can learn from various presentations, exchange and share your expertise among participants and with your colleagues later. Last but not least, I acknowledge **the Federal Republic of Germany and ITTO** for supporting the ITTO-BMEL Teak Project Phase II and wish great success to achieve all desired outputs.

Opening Remarks

Asst. Prof. Dr. Kobsak Wanthongchai
Dean of the Faculty of Forestry, Kasetsart University, Thailand

I wish to extend a very warm welcome to all of you to the Regional Workshop on "Enhancing Smallholder Plantations Towards Quality Timber Production of Teak and Other Economic Species and Carbon Neutrality in the Tropics". This is one of important activities under the ITTO-BMEL Teak Project Phase II, "Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics" which started off last year in October 2023 for 3 years.

The Faculty of Forestry, Kasetsart University is the Executive Agency of the ITTO-BMEL Teak Project Phase II, coordinates the implementation of regional and national activities with five participating countries in the Asia-Pacific, namely Cambodia, India, Indonesia, Thailand, and Vietnam, and Togo in West Africa. In Thailand, we work closely with the Royal Forest Department (RFD) and the Forestry Industry Organization (FIO).

Distinguished Guests, Ladies and Gentlemen, I came to understand from Professor Yongyut Trisurat, who is the Regional Project Manager and the Chair of this Regional Workshop that there are over 65 participants from 12 countries in the Asia-Pacific region, including Cambodia, Lao PDR, Myanmar, India, Indonesia, Japan, Thailand, Vietnam, Germany and UK from EU, and Ghana and Togo from West Africa attending this regional workshop.

Thus, this Regional Workshop provides a good opportunity for not only project members but also scientists, interested individuals, smallholders and business sectors alike to share experiences on case studies, good practices and policy options to promote local communities and smallholders in good quality timber production of teak and other economic species along with enhanced value chain processes in the wood industry and promoting carbon-supported plantation development within the project areas and beyond.

Perhaps some of you may aware, Kasetsart or Agriculture university was established over 80 years ago. Since then, KU has progressively developed into a comprehensive university which offers educational degrees and training programs for B.S., M.S. and Ph.D. degrees, in the field of agriculture, forestry, fisheries, environmental sciences and allied disciplines. Furthermore, KU has developed partnerships with nearly 700 research and educational institutions around the globe. Within the country, we work closely with the RFD and FIO. The project objective is highly relevant to the KU's mission, regional and global framework and perspectives.

The ITTO-BMEL Teak Project Phase II not only build on the previous achievements of phase 1, but support the Government of Thailand's policies to implement the National Forest Policy and the BCG-Bio-Circular-Green Economy Model, which becomes a main strategy to drive economy of the country after the COVID-19 pandemic. Besides, small plantations can contribute other benefits such as carbon storage, provide ecosystem services, risk reduction, etc. through Nature Futures Framework or NFF. You will learn more about this from Dr. *Osamu SAITO, IGES,* Japan.

I do hope that the ITTO-BMEL Teak Project Phase II will significantly enhance the production of high-quality timber from teak and other valuable species plantations established by smallholders and communities in the Asia-Pacific and West Africa, and improve livelihood of local people and they will benefit passive income from carbon credit and value-added products.

I would like to conclude by thanking again the Federal Republic of Germany and ITTO for this great initiative. My appreciation is also to distinguished speakers for sharing your great experiences and national coordinators for notifying us the opportunities and constraints to promote good-quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations. On behalf of Kasetsart University, I wish grand success of the regional workshop and enjoy post-workshop field visits in northern Thailand.

I declare the Regional Workshop on “Enhancing Smallholder Plantations Towards Quality Timber Production of Teak and Other Economic Species and Carbon Neutrality in the Tropics” Open.

About the Regional Workshop

Teak (*Tectona grandis* L.f.) is recognized as one of the most important and valuable hardwoods in the world. Natural teak forests are found in four countries, namely India, Myanmar, Thailand and Lao PDR. It has been used for many centuries for the manufacture of a wide range of products and was a main product in the 18th century to generate foreign exchange and capital for national development for Thailand, Myanmar and India. In addition, it is considered a priority species in many of these countries for large-scale cultivation in about 80 countries in the tropical regions, and the versatile fast-growing timber offers the best opportunity to produce quality timber for a variety of end-uses and provide livelihood for forest dependent communities. Hence, large-scale investment opportunities for teak plantation establishments have taken place in the corporate sector worldwide where the climate is suitable for cultivation.

Based on the present report on Teak Resources and Market Assessment 2022, a joint project by TEAKNET, IUFRO and FAO, indicated that the area of natural teak forests has increased by 1.180 million ha globally (estimated at 29 million ha in 2010), while the global area of planted teak forests is estimated at 4.854 million ha, of which 80% is in Asia, 13 % in Africa and 7% in Latin America. The data reported indicates that the global area of planted teak forests has increased by 507,000 ha since the 2010 study.

Despite widespread plantations, the productivity of planted teak is generally low, particularly in the plantations established by smallholders and local communities. This is due to poor quality of planting stock, inadequate silvicultural practices, premature harvesting as a result of limited financing to produce quality timber, and weak marketing and value chains.

With the financial support from **the Ministry of Food and Agriculture (BMEL), the Federal Republic of Germany through the International Tropical Timber Organization (IITTO), Kasetsart University as the Executing Agency implemented** the ITTO-BMEL Project Phase I "*Enhancing Conservation and Sustainable Management of Teak Forests and Legal and Sustainable Wood Supply Chains in the Greater Mekong Sub-region*" *(PP-A/54-331)*, which demonstrated legal and sustainable teak supply chains with the engagement of local communities, smallholders and government actors in the Greater Mekong Sub-region. Five countries participated in the project phase I (2019-2022), namely Cambodia, Lao PDR, Myanmar, Thailand, and Vietnam.

The Project Phase II, **"Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics (PP-A/54-331A)**" builds on the excellent achievements of the BMEL-ITTO Project Phase I and aims to significantly improve the production of high-quality timber from teak and other valuable species plantations established by smallholders and communities in 5 countries in the Asia-Pacific (Cambodia, India, Indonesia, Thailand, and Vietnam) and Togo in West Africa.

Additionally, the project focuses on the certification and legality of sustainablyproduced timber, including that from small- and medium-sized enterprises, along with enhanced value chain processes in the wood industry and promoting carbon-supported plantation development. Building on ITTO's comparative advantage, the project leverages the organization's expertise in addressing forestry issues that require strong public, private,and community collaboration. ITTO's proven track record in policy development andcapacity-building initiatives in its producer member countries further strengthens the project's foundation.

The development of management models for smallholder value chains in teak and other valuable species plantations and the introduction of supportive finance systems will encourage smallholders and forest communities to plan the sustainable management of plantation resources and quality timber production in longer rotations and efficient timber and timber products processing. Cooperation with smallholder farmers and entrepreneurs will increase livelihood

opportunities for local residents and reduce pressures on the unsustainable use of forests. The project also will assist in the practical application of the certification of sustainability of forest management, and the verification of timber legality. The capacity-building program of the project will be based on a rapid, participatory trainingneeds assessment that will be implemented in close cooperation with forestry authorities, academic and research institutions, NGOs, and interested development partners.

The project leverages existing experiences and knowledge from relevant ITTO projects on teak and other valuable species through South-South cooperation in the two tropical regions. Field activities in selected countries in the Asia-Pacific and West Africa will focus on smallholder farming systems, integrating valuable native multifunctional species to providealternate income sources alongside teak planting for long rotations. Key collaborating agencies include the Cambodia Forestry Administration, Thailand's Royal Forestry Department and Kasetsart University, the Vietnam Administration of Forestry/VietnameseAcademy of Forest Sciences, the Indian Council of Forestry Research & Education, Dehra Dun, and the Indonesian Ministry of Environment and Forestry. In Togo (West Africa), the University of Lomé will play a pivotal role.

The project also aims at harnessing synergies with other organizations working in the samefield, such as IUFRO and TEAKNET. A specific collaboration with the Thünen Institute of Forestry will be arranged to carry out feasibility studies for financing schemes for smallholders' teak and other valuable species plantations. The project will explore recent incentive programs and improve smallholders' access to finance and long-term investmentsto meet market specifications.

The first regional workshop on **"Enhancing Smallholder Plantations Towards Quality Timber Production of Teak and Other Economic Species and Carbon Neutrality in the Tropics"** is being jointly organized by the Faculty of Forestry, Kasetsart University, and ITTO in collaboration with the six participating countries in Asia-Pacific and West Africa.

Objectives:

The overall goal of this workshop will focus on the planning and implementation of researchand development activities of good quality timber production along with enhanced value chain processes in the wood industry and promoting carbon-supported plantation development, while the specific objectives are to:

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 chainsand micro-finance mechanisms for longer restoration and carbon restoration.

III. Review and share experiences on case studies, good practices and policy options to promote local communities and smallholders in planted teak and other valuable species, and agroforestry systems to support sustainable livelihoods.

The substance of this regional workshop includes four components: 1) Welcome remarks, 2) Keynote presentations, 3) Technical Presentation, 4) a post-workshop field excursion. Distinguished delegates from ITTO, BMEL, Kasetsart University and the Chair of the Project Steering Committee (on behalf of the six participating countries) will deliver welcome remarks and opening remarks. The organizing committee invites four keynote speakers to present science-policy relevant to economic tree plantations (*Dr.Khwanchai Duangsathaporn), the recent* Global Teak Resources and Markets (*Dr. P.K. Thulasidas,TEAKNET*), sustainable wood use policy and project (*Dr. TetraYanuariadi*), and the IPBES Nature Futures Framework and nature's contribution to people (*Dr. Osamu SAITO*).

In addition, the national coordinators or representatives of the participating countries will present situation, opportunities and constraints to promote smallholder plantations toward quality timber production. Furthermore, knowledge and case studies related to silvicultural practices and economic mechanisms that enhance high-quality timber production in a wide range of factors—including ecological, organizational, economic, and social aspects—that are crucial for achieving sustainable forest management, are presented by practitioners and scientists. A post-workshop field excursion to teak wood industries and teak plantations in northernThailand (Nan, Phrae and Lampang Provinces) will be organized.

The outputs of the First Regional Workshop will be shared among the six participating countries in the Asia-Pacific and West Africa, interested individuals and organizations. In addition, workshop outputs will be shared at the 5th World Teak Congress to be held in Kerala,India in 2025. The ITTO-BMEL Teak Newsletter and ITTO TFU will also share the outcomes.

On behalf of the Project Technical Committee and the six participating countries, I would like to thank all delegates, distinguished speakers and participants attending this Regional Workshop, especially the Federal Republic of Germany and ITTO, to support the project. I wish you had opportunities to share experience and gain knowledge from the Regional Workshop.

Professor Dr. Yongyut Trisurat

Regional Project Manager

Introduction to the ITTO-BMEL Teak and Other Valuable Species Plantation Project

Prof. Dr. Yongyut Trisurat, Regional Project Manager
Faculty of Forestry, Kasetsart University
Bangkok, Thailand

Background

Smallholder timber plantations in the tropics have the potential to provide sustainable supply chains of quality timber based on increasing forest landscape restoration initiatives as well as to provide other ecosystem services such as carbon sequestration and soil conservation, which can benefit both the local community and the wider region. Besides enhancing rural livelihoods, the development of smallholder agroforestry systems with teak and other valuable native tree species has a huge impact on environmental conditions and the supply of timber to the local industry. For instance, teak (*Tectona grandis*) plantations have been widely established across 80 tropical countries over an estimated 4.854 million ha. Smallholder systems account for approximately one-fifth of the global teak estate and are an important source of raw material for national and international teak industries. Despite widespread plantations, the productivity of planted teak is generally low, particularly in the plantations established by smallholders and local communities. This is due to poor quality of planting stock, inadequate silvicultural practices, limited financing to produce quality timber, and weak marketing and value chains.

The Project, "***Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics"* (**PP-A/54-331A) or ITTO-BMEL Teak Project Phase II is developed based upon the outcomes of the BMEL-ITTO Project "*Enhancing Conservation and Sustainable Management of Teak Forests and Legal and Sustainable Wood Supply Chains in the Greater Mekong Sub-region*" *(PP-A/54-331)*. The project supported the participating countries' policies and strategic goals of promoting sustainable management of teak resources and the afforestation efforts in public and private land; promote and assists in value chain process in wood industries and biodiversity based economic development; certification and legality of sustainably produced timber including small- and medium enterprises. The Project is also built on ITTO's comparative advantage in providing support to forestry issues that require strong interface with the public, private sectors and community and proven records of continued accomplishment in policy work and capacity building initiatives in its producer member countries.

The Project makes full use of the existing experiences and knowledge from the implementation of relevant ITTO's projects on teak and other valuable species resources through South-South cooperation in the three tropical regions. The Project aims to contribute to increasing the economic and social contributions of smallholder teak and other valuable species plantations in the tropics to facilitate the achievement of the Sustainable Development Goals (SDGs) for a sustainable future.

Specifically, the Project is to improve the production of high quality timber from teak and other valuable species plantations established by smallholders and communities in the Asia Pacific and West Africa; improve livelihoods and social and environmental outcomes through better silviculture practices, efficient wood transport and small-scale processing, financial schemes to invest in quality timber production from long rotations and access to voluntary carbon markets, as well as regional and international collaboration for sustainable smallholder plantations.


Launching Workshop, Bangkok, Thailand (11-13 October 2023)

Expected outputs and planned activities are as follows:

Output 1: Supply chains of smallholders and community-based teak and other valuable species plantation and management systems have been strengthened with easy availability of high-quality planting stock and implementation of improved practices in silviculture, and timber processing and legality.

Activities:
1.1 Conserve teak and other valuable species genetic variation through improved management of existing seed production areas, seed orchards, and provenance/progeny trials/clonal plantations (India, Indonesia, Thailand).

1.2 Support smallholders and local communities for improved management of existing and new demonstration plots (altogether 14 plots) for teak and other valuable species and field training on the following subjects: (1) seed production/nursery techniques; (2) silvicultural practices and improved stand management, including coppicing as a regeneration method; (3) minimizing harvesting loss, efficient transport and processing of teak roundwood and product designs and innovation; (4) teak and other valuable species and value-chains (5) timber legality and sustainability (all participating countries)

1.3 Promote timber legal compliance in smallholder/community plantations, aligning with national and local laws governing forest plantations, management, timber harvesting and legality (global)


Provenance test of good-quality teak in Kanchanabiuri Province, Thailand

Output 2: Financing schemes for quality timber production in smallholders and community-based teak and other species plantations have been analyzed and improvements have been suggested to increase economic outcomes

Activities:
2.1 Carry out a feasibility study for direct contracts/out-grower schemes with sourcing companies to ensure that smallholders' products will be purchased at remunerative prices (all participating countries)

2.2 Carry out a study to promote micro-lending schemes to address the credit constraints of smallholders to explore different options to overcome the problem with collaterals that smallholders often face trees as guarantees, and group-lending to a number of forest growers who can ensure loan repayments from each other (all participating countries)

2.3 Carry out a study to promote the formation of effective forest grower associations to reduce transaction costs and help improve access to micro-credits (all participating countries)

2.4 Carry out a study to access to voluntary carbon markets to increase revenues from longer rotation of smallholder and community-based teak and other valuable species plantations to increase financial security of farmers, address the issue of cash flows, and support their access to micro-lending schemes (global scope)

Teak Plantation and Silvicultural Practices Training on 27-28 March 2024

Output 3: Regional and international collaboration, information sharing and knowledge management, networking, policy development and outreach for sustainable smallholder teak and other species plantations have been strengthened

Activities:
3.1 Produce and disseminate outreach and training materials on the conservation and sustainable management of teak and other valuable species plantations and legal and sustainable supply chains in line with outcomes of Activities 1.2 and 2.1-2.4 to support forest policy development (regional scope).

3.2 Support and facilitate teak networking in ITTO's member countries in Africa, Asia-Pacific and Latin America in collaboration with TEAKNET and other partners through the organization of a quarterly-based Webinar (4 every year) to promote the conservation and sustainable management of teak forest resources and legal and sustainable supply chains (global scope).

3.3 Plan and organize two Regional Workshops in Thailand and in central Java, Indonesia with investors and financial institutions to discuss financing schemes promoting quality timber production in smallholder teak plantations (regional scope).

3.4 Support sharing lessons in promoting the quality teak production and legal and sustainable supply chains at the IUFRO World Congress 2024 (Sweden) and in the 5th World Teak Conference 2025 (Kerala, India) for improved global teak collaboration (global scope).

Budget and Duration

The Ministry of Food and Agriculture of the Federal Republic of Germany (BMEL) provides the financial support through ITTO of USD 1,413,449 to implement the planned activities. The duration of the project is 3 years (36 months) and expanded to December 2026 with no cost extension.

Data collect in Ativeme forest station (left)
and tree planting festival in Yen Bai Province, Vietnam (right)

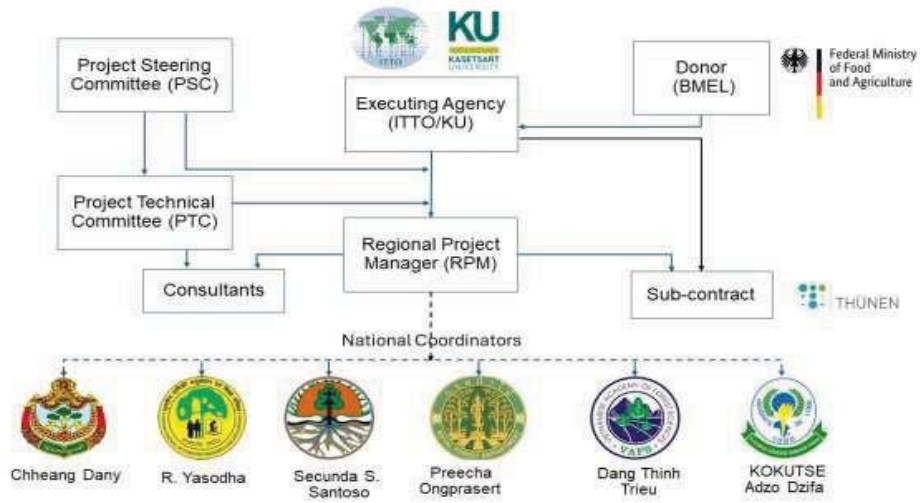
Project Organization and Project Team

The project is executed by Kasetsat University, Thailand with technical support from the ITTO. The collaborating agencies include Cambodia's Forestry Administration, Thailand's Royal Forestry Department and Kasetsart University, Vietnam's Administration of Forestry/Vietnamese Academy of Forest Sciences, Indian Council of Forestry Research & Education, Dehra Dun and the Indonesia's Ministry of Environment and Forestry. In Togo (West Africa), University of Lomé will be a key implementing agency.

Besides, the project also aims at harnessing synergies with other organizations working in the same field such as IUFRO and TEAKNET. A specific collaboration with the Thünen Institute of Forestry will be arranged to carry out feasibility studies for financing schemes for smallholders' teak and other valuable species plantations.

Project Implementation is under supervision of two committee. The Project Steering Committee (PSC), chaired by the Director-General of the RFD is to oversee the implementation of the Activity, approve expenditures within the budget, review the activities that have been carried out, and review and propose changes in budgets and activities. In addition, the Project Technical Committee (PTC), chaired by Dr. Suwan Tangmitcharoen - The Director of Research and Forest Development Office, RFD, is to support the work of the PSC through a periodic review of the implementation of all activities geared to the achievement of the Activity's objective.

Furthermore, the project management team consisting of the Regional Project Manager (RPM), and six National Activity Coordinators are to execute day-today and coordinate activities in the recipient countries. The management team is under the supervision of the PSC and collaborates with the PTC.



Organization chart of the ITTO-BMEL Teak and Other Economic Species Plantation Project

List of project management team

Position	Name	Affiliation/E-mail
Representative of Donor	Mr. Stephan Wagner	European and International Forest Policy Federal Ministry of Food and Agriculture (BMEL)
Project Supervisor	Dr. Tetra Yanuariadi	Trade and Industry Division, ITTO Email: tetra@itto.int
Executive Agency	Dr. Kobsak Wanthongchai	Dean of the Faculty of Forestry, Kasetsart University Email: fforksw@ku.ac.th
Regional Project Manager	Prof. Dr. Yongyut Trisurat	Kasetsart University, Thailand Email: fforyyt@ku.ac.th
Cambodia's Project Coordinator	Mr. Chheang Dany	Dy Director-General Forest Administration Email: wpo@online.com.kh;
Thailand's National Coordinator	Dr. Preecha Ongprasert	Director of Forestry Foreign Affairs Office, Royal Forest Department E-mail: precha_ong@yahoo.com
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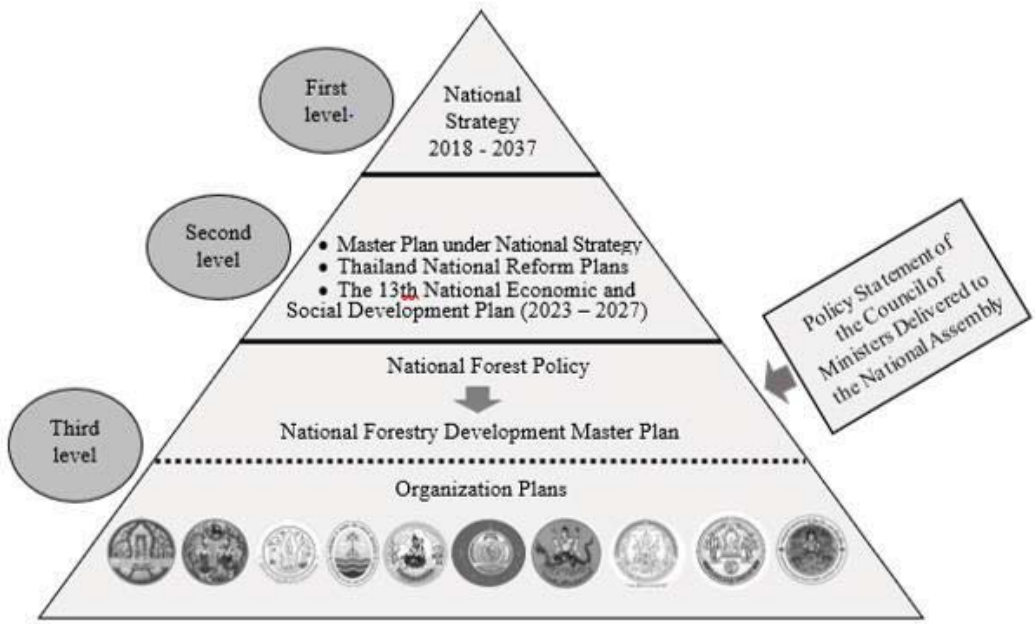
India's Project Coordinator	Dr. R. Yasodha	Indian Council of Forestry Research & Education Email: yasodha@icfre.org
Indonesia's Project Coordinator	Dr. Cumie Kristanti Rina	*Ministry of Environment and Forestry* *Email:*
Togo's National Coordinator	Prof. KOKUTSE Adzo Dzifa	University of Lome, mimidam@hotmail.com

ABSTRACTS

Thai Government Policy on Economic Tree Plantations

Khwanchai Duangsathaporn
Member of Thailand's National Boards on Forest Policy, Land Policy, Forest Community Policy, National Environment, and National Reform.

Abstract
Thailand is located in Southeast Asia, bordered by Myanmar, Laos, Cambodia, and Malaysia, encompassing a total area of 51.3 million hectares (320.625 million rai). Forest resources have historically been foundational to the country's economic, social, and environmental development. The National Forest Policy as a crucial mechanism within the forestry sector, aligning with the National Strategy, Master Plan under the National Strategy, National Reform Plans, and the 13th National Economic and Social Development Plan (2023-2027). It serves as a framework for developing the National Forestry Development Master Plan and organizational plans, facilitating development partners' contributions towards achieving targeted goals within specified timeframes. The hierarchical structure of Thai government policies related to economic tree plantations is illustrated in the figure below.



The National Forest Policy and the National Forestry Development Master Plan serve as guiding principles for advancing forestry development across all sectors of the country, with an intention to enhance the strengths and outstanding points, and to improve all weaknesses systematically, and promote sustainable progress. The National Forest Policy as the cornerstone in driving the country's forestry development, leading to the establishment of the National Forestry Development Master Plan, which emphasizes practical implementation at all levels—from strategy and mission to operational areas. Approved during the Cabinet Meeting on 6th November (BE) 2562, the National Forest Policy comprises four objectives and 24 regulated policies, focusing on three main aspects of development: forest management, utilization of forest products/forest ecosystem services and forest industry development, and forest administration system and organization development. Several provisions in the Policy are well-known to the public, including the goal of maintaining forest areas covering at least 40 percent of the

country's total area. This includes conservation forests constituting no less than 25 percent and economic and community forests accounting for no less than 15 percent of the country's area. Economic tree plantations in Thailand certified by the Forest Stewardship Council encompass nine species: Para rubber (Hevea brasiliensis Mull-Arg.), Eucalyptus (Eucalyptus spp.), Teak (Tectona grandis L.f.), Acacia spp., Hopea odorata Roxb., Aquilaria crassna Pierre, Dalbergia cochinchinensis Pierre, Pterocarpus macrocarpus, and Xylia xylocarpa (Roxb.) Taubert.

Global Teak Resources and Markets

PK Thulasidas[1], Walter Kollert[2] and Sandeep S[1]
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[2] Waka Forest Investment Services AG, Brazil and Switzerland

Abstract
Teak (*Tectona grandis* L.f.), the timber of kings, grows in about 80 countries in the tropical regions. It is considered a priority species in many of these countries for large-scale cultivation, and the versatile fast-growing timber offers the best opportunity to produce quality timber for a variety of end-uses and provide livelihood for forest dependent communities. Hence, large-scale investment opportunities for teak plantation establishment have taken place in the corporate sector worldwide where the climate is suitable for cultivation.

One of the recommendations of the 4th World Teak Conference held in Ghana in 2022 was the lack of data on teak resources and trade at global level. The Teak Resources and Market Assessment 2022, a joint project by TEAKNET, IUFRO and FAO, fills this data gap and presents a detailed assessment the world's teak resource and trade data of teak. The Global Teak Resources and Market Assessment provide the current status of country- level information on teak as of 2022 and the report updates the TRMA 2010 report of FAO, published a decade ago. Teak resources were assessed using a standardized questionnaire prepared in five languages - English, French, Spanish, Portuguese and Chinese and sent to qualified experts in the field with the help of Regional Coordinators appointed for the purpose and collected the data. International trade in teak logs and sawntimber was assessed using the UN COMTRADE database, which publishes teak data based on official customs records since January 2022. There is currently no better source of up-to-date information on teak resources and markets other than this TRMA 2022 report.

The major highlights of the study revealed that the area of natural teak and planted teak forests has expanded substantially, the harvest of teak roundwood has increased and teak's share of the global market is growing. India remains the dominant trading partner and imports 97 percent of the total trade volume. Comparing the TRMA 2010 assessment report of FAO, the present 2022 report highlights that area of natural teak forests have increased by 1.180 million ha globally while the global area of planted teak forests is estimated at 4.854 million ha, of which 80% in Asia, 13 % in Africa and 7% in Latin America. The data reported indicates that the global area of planted teak forests has increased by 507,000 ha since the 2010 study. The detailed presentation will report the major highlights of TRMA 2022. The report as IUFRO World Series publication # 44 is available online from IUFRO, TEAKNET and FAO websites.

Keywords: teak resources. Trade data, TRMA 2022, UN COMTRADE, *Tectona grandis*

ITTO's Work on promoting sustainable wood use

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Abstract
Competitiveness of tropical hardwoods is in continuing loss compared to wood products produced in temperate forests. In the current situation, the availability and quality of large-diameter tropical hardwood logs of primary wood species are declining. Changes in the global trading environment for tropical timbers, including teak, are occurring at a rapid pace. This requires a longer-term view to enable tropical timber industry policy decisions to be effective. Degraded forests have a reduced capacity to supply local, national and global markets with essential forest products. Yet demand for harvested timber and other products are increasing. Demand for tropical primary and secondary wood products is a derived demand, driven by residential, non-residential and public construction activity and by consumer wealth and spending. Global housing and construction trends are therefore important indicators of tropical wood products demand. Commodities produced in tropical countries are not always viewed in a positive light as they are associated with deforestation, forest degradation, illegality, etc. Increasing degraded forests have reduced their capacity to supply local, national and global market with essential forest products. The COVID-19 crisis has affected tropical timber and timber product trade and amplified the economic slowdown in its both producer and consumer countries. Tropical timber producer countries need to regularly assess the situation of competitiveness of their products in international markets to ensure continued maintenance of production and trade of sustainably managed tropical timber products. Ensuring sustainable tropical timber trade requires optimizing the utilization and improving productivity of production forests, which will, in turn, benefit conservation and protected forests, in terms of reducing pressures and disturbances. A key requirement of sustainability is compliance with all relevant legal frameworks.

Progress of the Project Activity Implementation in Cambodia

Say Sinly
Cambodia's Forestry Administration
Phnom Penh, Cambodia

Abstract
Since November 2023, the Cambodian Project Team of the BMEL-ITTO Project "Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics (Teak Project Phase II)" (PP-A/54-331A) has implemented a numerous activity. The 12 teak demonstration plots of silvicultural practices established in Kampong Cham province were started with measurement in every six-month, and the new silvicultural plots of other values timber species were established adjacent to those existing plots.

On the right track of the progress, the two consultants, the Production of Good-Quality Planting Material and Field Training Silviculture, have conducted literature reviews, and these guidelines are divided into several chapters. At least two chapters each of which have been drafted in Khmer version.

To promote timber legal compliance in smallholder/community plantations, aligning with national and local laws governing forest plantations, management, timber harvesting and legality, the Cambodian Project plans to promote the existing communication material through a VDO clip on "Current status of key selected tree species in Cambodia and a shift to more sustainable livelihoods through other hardwood, teak and fast-growing tree plantation, a substitute for rosewood hardwood products" comprising key contents: 1) An introduction to forest resources in Cambodia; 2) CITES conventions and its restricted practices for international trade of endangered tree species; 3) Current status of key selected tree species in Cambodia; 4) The practices with responsible purchasing and contribution to preventing illegal logging; 5) Alternatives to illegal logging (other hardwood, teak and fast-growing tree plantation can be substituted for rosewood hardwood products); 6) Promoting of establishment of private forest plantation (rosewood and agarwood) for ex situ conservation, and 7) The Global Rise of Teakwood.

With regard to minimizing harvesting loss, efficient transport and processing of teak roundwood and product designs and innovation, the Cambodian project team via coordinating with a local teak-product manufacturer plans to conduct a case study on processing of teak wood in Cambodia and its challenge.

Long-Term Teak Plantations Towards Good Quality Timber

Mr. Narongchai Chonlapap
Forest Industry Organization, Thailand

Abstract
The Forest Industry Organization (FIO) is the largest timber producer in Thailand, managing over 169,600 ha of economic forest plantations. These plantations are categorized based on investment levels and the purpose of land use. Key timber species include teak (*Tectona grandis*), eucalyptus (*Eucalyptus* spp), and rubber (*Hevea brasiliensis*), with teak covering a significant 78,325 ha, making it a substantial portion of the country's total teak production. Teak, with its valuable properties, has long been economically and culturally important in Thailand, and is in high demand both domestically and internationally.

As a state enterprise committed to the sustainable management of economic forests, the Forest Industry Organization (FIO) plays a crucial role in balancing economic, social, and environmental objectives. The FIO's strategy focuses on promoting sustainable forestry practices that not only support the national economy but also contribute to environmental conservation and social welfare.

At the core of FIO's operations is the teak production process, which begins with carefully selecting seedlings and continues through meticulous site preparation and long-term plantation management. This comprehensive approach is designed to produce high-quality teak while enhancing operational efficiency. By minimizing timber loss and maximizing the utilization of forest resources, the FIO ensures that every aspect of production is optimized for sustainability. These efforts aim to meet the demands of both domestic and international markets, ensuring a steady supply of teak that adheres to rigorous quality standards. Additionally, the FIO's initiatives support the broader goal of preserving the country's forest resources, reinforcing Thailand's commitment to sustainable development and forest conservation.

Through its dedication to sustainable practices, the Forest Industry Organization remains at the forefront of efforts to ensure that Thailand's forests are managed responsibly, balancing the needs of the present with the demands of the future.

Commercial Teak Plantations using Intensive Silvicultural Practices

Boonlert Srisuksai
Sritrang Rubber and Plantation company Teak Plantation
Nan Province, Thailand

Abstract
Commercial teak plantations in Thailand started over 30 years ago. The rotation period ranges from 15 to 20 years. Previously, there were no problems to sell medium- and large-size timbers, which were used for furniture products and construction. Currently, there is a limited demand for teak timbers of small-and medium sizes harvested from thinning, and their prices are declining. However, large-size timber from longer rotation and high-quality timber are demanding for both domestic and international markets. Therefore, teak plantations have to adapt to meet market demands. In addition, the silvicultural practices must be carefully and intensively undertaken in all steps from site preparation, seedling preparation, plantation, weeding, fertilizing, pruning, thinning, and pest and fire prevention from the first day of plantation until harvesting. A case study on commercial plantation by Sri Trang company is discussed.

Development of Smallholder Teak Plantation in Vietnam

Dang Thinh Trieu
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Hanoi, Vietnam

Abstract
First-six months of project implementation of Vietnam component (January - June 2024) Vietnam has launched project activities after participating the Launching Workshop held in Bangkok, Thailand on 11-14 October 2023. Major achievements are as follows:
The Project key staffs were appointed, including six members, in which Dr. Tran Lam Dong, Vice director of VAFS, is the Project Steering Committee and Dr. Dang Thinh Trieu is the National Coordinator. Two national consultants have been recruited as experts to support smallholders for establishing demonstration plots and field training on seed production/nursery techniques and silvicultural practices.

As for the Output 1, VAFS has surveyed and selected sites for development of demonstration plots, including two sites for smallholders in Northeast region (Yen Bai province) and Northwest (Son La province) and five sites for cooperation with some companies in intensive planting of Teak in three ecological regions in Vietnam: Northeast (Bac Giang and Tuyen Quang provinces), Central South (Binh Dinh), Southeast (Dong Nai and Binh Duong provinces). For smallholder demonstration plot establishment, the Project has cooperated with the Forest and Farm Facility Project (FFF, funded by FAO) and Yen Bai Farmer Union to organise a training and support households to establish three hectares of Teak plantations and mixed Teak-Cinnamon plantations. Planting day was in combination with the Tree Planting Festival event in March 2024.

For establishment of demonstration plots of intensive planting of Teak of the companies, Project has supported the companies to access the high-quality teak seedlings from Thailand. VAFS has organised a field visit, including the project staff and 2 forestry companies of Vietnam, to visit tissue culture lab and teak plantations of Thai Orchids Co., Ltd (TOL) in Thailand. VAFS also hosted two visits of TOL staffs to come to visit the planting sites and to discuss the cooperation in development of Teak plantation in Vietnam. VAFS and TOL has signed a contract for providing 13,390 tissue culture teak plantlets for experiment and demonstration plots. However, VAFS is waiting for the import permit of teak plantlets from Thai Orchids Co., Ltd.

As for the Output 3, Dr. Tran Lam Dong has represented for Vietnam component to participate the IUFRO World Congress 2024 in Sweden in June 2024 and presented in the Session “Strengthening Teak Forest management for sustainable teakwood supply chains and trade”.

VAFS has been active in the implementation of the Project activities and in time with the project plan. The next important activities are establishment of demonstration plots of the intensive Teak planting in cooperation with the companies when the teak plantlets import permit is issued.

Natural Teak Forests and Plantations in Lao PDR

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Ministry of Agriculture and Forestry, Lao PDR

Abstract
Lao PDR forms the easternmost limits of the natural distribution of Teak in the world. The largest natural areas in Laos occur in the Sayabouly Province, where there may be 10-20,000 ha of mixed deciduous forests with significant presence of teak. Small areas of teak are also found in the Bokeo Province. In order to conserve natural teak forest, Government of Laos has both policies and regulations in place and several projects are under implementation to manage teak and ensure its sustainable use. Teak has long been grown by small farmers in northern part of Laos, especially in Luang prabang Province, with an average parcel size of less than 1 ha. Larger areas, up to around 20 ha, are often owned by absentee owners or acquired overtime by entrepreneurs. For many of these plantation owners securing land use rights is the primary benefit. The planting of teak has been promoted by Government policies since the 1980s in recognition of its high value and its potential to provide opportunities for generation of farm income. The so-called '2+3 model' encouraged by the government, in which the smallholder provides land and labour while the plantation company is responsible for technology, finance and marketing, has been quite successful in attracting investment in teak planting.

Management of Natural Teak Forest and Teak Plantations in Myanmar

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Ministry of Natural Resources and Environmental Conservation, Myanmar

Abstract

In Myanmar, natural teak forests have been managed for many years with sustained timber production as the primary objective. Myanmar is the only country producing large teak logs from natural forest, which attract a price advantage compared with small logs from plantations and which is likely to continue in the foreseeable future. The forest resources of Myanmar scientifically managed since 1856 have been decreasing due to population pressure and rising demands for forest lands and products.

Myanmar's forests vary in species composition and stand structure, and constitute a valuable ecosystem due to their wide extent, varied topography and different climatic conditions. Myanmar is endowed with a forest covered area of 42.19% of the country's total land area that shows Myanmar position as one of the highest in the Asia-Pacific Region. And the deforestation rate was 220,000 ha/year during 1975-1989, but 289,000 ha/year during 2010-2020. Myanmar Selection System or MSS in short, has been the principal forest management system applied in managing the natural forests in Myanmar since 1856. Moreover, the forest plantations, especially Teak plantations, were established in a compensatory way up to 1962. In Myanmar, extensive teak plantations were formed in the 1970s, and a further large-scale plantation program was launched commencing from 1980. It started with an annual target of 6,200 ha, increasing gradually. The Forest Department (FD) of Myanmar launched a special teak plantation program in early 1998 in addition to the existing teak plantation scheme. Teak plantations will be formed only on locations with site quality II/III and better. This special program has a defined rotation age of 40 years and this program is, in fact, a national endeavor to maintain and increase the production of teak for both domestic and export markets with due consideration for social benefits and environmental restoration of degraded forests. With regards to establishing forest plantations, it is better noted that plantation forestry in Myanmar is not a substitute for natural forests management, supplementary as has been stipulated in the Myanmar Forest Policy, 1995. About half of the land area of Myanmar is still covered with forests, of which 38 % is composed of the mixed deciduous forest types where Teak grows naturally well as Teak bearing forest. The forestry sector has contributed significantly to the country's economy and timber, especially Teak wood, has been major source of export earnings for many years. More than a century and a half of scientific management the natural forests of Myanmar are still in comparatively good extent and condition.

Key words: Myanmar, Teak, Myanmar Selection System, Teak plantations

The Nature Futures Framework: Tool to support desirable futures for people, Nature and Mother Earth

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Abstract
The Nature Futures Framework (NFF) was developed by Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) to facilitate building future scenarios and models desirable futures for people, nature and Mother Earth as a flexible tool for researchers, policy makers, and local stakeholders. The NFF presents three value perspectives of nature in a triangle. In the “nature for nature” perspective, people view nature as having intrinsic value, and value is placed on the diversity of species, habitats, ecosystems and processes that form the natural world, and on nature’s ability to function autonomously. The “nature as culture”/“one with nature” perspective primarily highlights relational values of nature, where societies, cultures, traditions and faiths are intertwined with nature in shaping diverse biocultural landscapes. The “nature for society” perspective highlights the utilitarian benefits and instrumental values that nature provides to people and societies. This presentation will cover theoretical background of the NFF, methodological guidance for using the NFF, and some case studies using the NFF in Asia. Implications for future policy and research will be also addressed to promote quality timber production along with enhanced value chain processes including carbon-supported plantation development.

Enhancing Teak Value Chains: Challenges and Opportunities

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Abstract
Thailand has very unique situation in plantation and value-added timber industry due to the government policy in the past 30 years. With the strong global environmental concern issue at the moment, it has shaped the world economic policy and created a significant change in consumers' perception on green products. There are lots of great opportunities to build a Plantation and value-added timber products industry and make it the next economic engine for Thailand. As Teak is best known for its durability, stability and nice look, there are great potential for Thailand to promote and build on integrated timber industry with the focus on teak. This presentation will discuss the opportunities and challenges on this issue.

Advancing the Sustainability and Quality of Thailand's Teak Forestry through Innovative Silviculture and Governance

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Abstract
The potential of teak-growing smallholders as the foundation of a value-oriented bioeconomy in Thailand has yet to be realized. Teak cultivation offers "living savings accounts" and intergenerational investments, but is not conducive to short-term profit maximization. Smallholders need to be aware of this to set realistic expectations. A level playing field is required to empower smallholders. Associations could enable smallholders to access markets more easily, engage in collective bargaining, share knowledge, pool resources, and advocate for their interests politically. Additionally, these associations could employ forest professionals to enhance profitability. By associating, members could benefit from spreading financial risks and securing regular incomes. However, the success of these initiatives depends on establishing fair pricing mechanisms based on transparent log grading standards that ensure adequate compensation for high-quality timber. Addressing these challenges requires significant political reform aimed at reducing bureaucratic burdens. Streamlining licensing procedures, simplifying permit processes, clarifying regulations, and creating transparent fee structures are essential steps. By shifting the perception of smallholders from mere service providers to innovative forest owners, we can align their contributions more closely with national goals for forest restoration and ensure their indispensable role in the bioeconomy is recognized and supported.

Low-Cost UAV as a Tool for Aboveground Biomass Assessment in Teak Plantations: Pros and Cons

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Abstract
Accurate assessment of aboveground biomass (AGB) in teak (*Tectona grandis*) plantations is essential for effective forest management, carbon sequestration, and sustainable resource use. Traditional ground-based methods, while reliable, are labor-intensive and time-consuming. The advent of low-cost unmanned aerial vehicles (UAVs) offers a promising alternative for AGB estimation, providing rapid data collection and high-resolution imagery. Low-cost UAVs can efficiently cover large areas, making them a cost-effective solution for frequent monitoring. However, the accuracy of AGB estimates from UAVs may be influenced by sensor quality, environmental conditions, and the need for technical expertise in data processing. Despite these challenges, UAVs have shown strong potential in improving the efficiency of biomass assessments, particularly when integrated with traditional methods.
In conclusion, our findings from the recent study "Estimation of aboveground biomass using aerial photogrammetry from unmanned aerial vehicles in teak (*Tectona grandis*) plantation in Thailand" by Rinnamang et al. (2020) (download from QR code below) demonstrated that UAV-derived data closely matched ground-based measurements, with total biomass estimates for 15- and 36-year-old stands showing strong correlations. The study underscores the potential of low-cost UAVs in forestry management, highlighting their advantages in surveying and monitoring stand productivity. The results suggest that low-cost UAVs are a valuable tool for AGB assessment in teak plantations; their optimal use may require a hybrid approach that combines UAV data with traditional methods to address current limitations. Future research should focus on enhancing UAV technologies and refining data processing techniques further to improve the accuracy and reliability of AGB estimates.

Monitoring and Prevention of Insect Pests in Teak Plantations

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Abstract
There are more than 70 species of teak pests. The most important species is the teak beehole borer (TBB), followed by the teak defoliator. TBB destroys teak wood in a cumulative manner, causing the price of teak to drop by 60%. Teak trees that are 2 years old or have a diameter of 4 cm or more are bored by TBB. The damage is found in the northern part of Thailand. The life cycle is 1-2 years. The larvae live inside the teak trunk for up to 10 months, making it very difficult to eliminate TBB. In the past, there was no good method to eliminate TBB. Until the study of the occurrence and location of TBB damage in a year, it was possible to design a precise and sustainable TBB control plan. The 1^{st}-2^{nd} stages of larvae, which live on the outer and inner bark, are the best stages for TBB eradication. Currently, teak plantations have used this method to eliminate TBB and have seen clear results in teak trees that are 2-10 years old, causing the TBB population to decrease within 5 years if the operation is continuous.

Monitoring the Health and Productivity of Teak Plantations in Guinean Zone of Togo: A comparative study of historical and newly introduced provenances

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Abstract
This study evaluates the health and productivity of teak plantations in Togo's Guinean zone by comparing historical and newly introduced provenances. Teak, a valuable timber species introduced to Togo in 1905, has seen declining productivity and quality due to limited genetic diversity. To address this, new teak provenances from Cote d'Ivoire, Tanzania, Malaysia, and India were tested at the Zogbépimé forest station. The study, conducted in the Maritime Region with a sub-equatorial climate and diverse ferrallitic soils, focused on growth parameters and aimed to assess growth parameters, guide thinning practices, and ultimately enhance the productivity and sustainability of teak plantations in Togo. Seven teak provenances, along with *Khaya* spp. and *Pterocarpus erinaceus*, were planted across various plots. Dendrometric measurements, including total height, diameter, and basal area, were analyzed for growth performance. After eight years of monitoring, the Indian provenance showed the largest diameters (17.91±2.51 cm) and high tree heights (16.52±1.22 m), followed by the Avetonou (17.22 ± 2.92 cm) and Luasong (16.5 ±2.30 cm and 16.85±2.88 m) provenances. Avetonou, despite its early flowering, resulted in lower, branchier trees with reduced height (14.5±1.47 m). These findings highlight the newly provenances (particularly Indian and Luasong provenances) as promising options for improving the productivity and sustainability of teak plantations in Togo.

Keywords: Teak Provenances, Plantation Productivity, Genetic Diversity, Dendrometric Measurements, Togo Forestry

POSTERS

ITTO Project's Progress (Cambodia's component)

(By August 2024)

"Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics (Teak Project Phase II)"

(PP-A/54-331A)

Federal Ministry of Food and Agriculture

ITTO

Introduction: The Project is developed based upon the outcomes of the BMEL-ITTO Project "Enhancing Conservation and Sustainable Management of Teak Forests and Legal and Sustainable Wood Supply Chains in the Greater Mekong Sub-region" (PP-A/54-331) . The Project makes full use of the existing experiences and knowledge from the implementation of relevant ITTO's projects on teak and other valuable species resources through South-South cooperation in the three tropical regions. The implementation of the field activities in the selected countries in the Asia-Pacific and West Africa will be focused on smallholder farming systems in which valuable native multifunctional species is integrated to meet alternate income sources in addition to planting teak for long rotations.

Objective: To Contribute to increasing the economic and social contributions of smallholder teak and other valuable species plantations in the tropics to facilitate the achievement of the Sustainable

Output 1: The Supply chains of smallholders and community-based teak and other valuable species plantation and management systems have been strengthened with easy availability of high-quality planting

59th ITTC; Project Launching Workshop; and Project Steering Committee (PSC)

- The MoU between International Tropical Timber Organization (ITTO) and the Forestry Administration (FA) has been finalized and signed in November 2023;
- The Forestry Administration sent one senior official and two officers to attend the 59th International Tropical Timber Council (59th ITTC; Committee Session) in Pattaya, Thailand on 13-17 November 2023
- The Cambodia's Forestry Administration (FA) participated (online) in the Launching Workshop organized on 11-14 October 2023 in Thailand, which the PSC is chaired by the Director-General of the RFD and other 17 members, including ITTO, BMEL, representatives of six participating countries, Forest Industry Organization (FIO), relevant agencies, and forestry experts in which the Regional Project Manager serves as the Secretary.
- The Inception Workshop held in Bangkok, Thailand, and the Project Steering Committee on 25 January 2024.

The 59th International Tropical Timber Council (59th ITTC, Committee Session) in Pattaya, Thailand on 13-17 November 2023

Establish demonstration plots of teak and other valuable species

- The demonstration plots on teak silvicultural practices were established with 10 plots in Kampong Cham (KPC) and and 12 plots in Kampong Speu province (KPS); 11 plots were pruned, and the other 11 pots were control plots (non-silvicultural practice); the project plans to visit additional teak plantation in Ratanakiri province where thinning practices has been conducted.

Measurements of teak demonstration plots in Kampong Spue province

Demonstration plots of other valuable species in Kampong Spue province

Support smallholders and local communities for improved management of existing demonstration plots for teak and other valuable species and field training on the following subjects: (1) seed production/nursery techniques; (2) silvicultural practices and improved stand management, including coppicing as a regeneration method

- Recruited two national consultants;
- The draft of Guidelines on Production of Good-Quality Planting Material has been on progress of producing in Khmer version (at least two chapters); the Guidelines include teak and other native valuable timber species in Cambodia; the guidelines will be following the OECD scheme on forest reproductive material;
- The key contents cover all technical aspect of seed production, including:
  - Chapter I: Introduction (background, objectives, teak and selected native timber species,..)
  - Chapter 2: (Planning of seed production, identifying areas for seed sources and fruit collection)
  - Chapter 3: (Arrangement of fruit harvest and seed collection, and transpiration)
  - Chapter 4: (seed Extraction, cleaning, grading, quality control, and storage)
- The Technical Guidelines on Nursery Techniques and Silvicultural Practices to Improve Stand Management in Cambodia (Khmer version) has been drafted, and the key contents cover:
  - Chapter I: Introduction (background, objectives..)
  - Chapter 2: Nursery Techniques
  - Chapter 3: Establishment of Tree Plantation
  - Chapter 4: Techniques for Silvicultural Practices
- After completion of the guidelines, a training program will be produced.
- These final drafted Guidelines will be translated and submitted to the PSC for reviews and feedback.

Support smallholders and local communities for improved management of existing demonstration plots for teak and other valuable species and field training on the following subjects: (3) minimizing harvesting loss, efficient transport and processing of teak roundwood and product designs and innovation; (4) teak value chains and other valuable species and NTFP (5) timber legality and sustainability

- The Cambodian project has been conducting a case study on teak efficient processing, teak product designs, and economic analysis;
- To promote timber legal compliance in smallholder/community plantations, the Cambodian Project plans to promote the existing UN-REDD communication material through communication plan and a vide clip on "Current status of key selected tree species in Cambodia and a shift to more sustainable livelihoods through other hardwood, teak and fast-growing tree plantation, a substitute for rosewood hardwood products" comprising key contents:
  - An introduction to forest resources in Cambodia;
  - CITES conventions and its restricted practices for international trade of endangered tree species;
  - Current status of key selected tree species in Cambodia;
  - The practices with responsible purchasing and contribution to preventing illegal logging;
  - Alternatives to illegal logging (other hardwood, teak and fast-growing tree plantation can be substituted for rosewood hardwood products);
  - Promoting of establishment of private forest plantation (rosewood and agarwood) for ex situ conservation)
  - The Global Rise of Teakwood.

Output 2: Financing schemes for quality timber production in smallholders and community-based teak and other species plantations have been analyzed and improvements have been suggested to increase economic outcomes.

Output 3: Regional and international collaboration, information sharing and knowledge management, networking, policy development and outreach for sustainable smallholder teak and other species plantations have been strengthened.

- The activities of the output 2 and output 3 are considering for implementation in the end of 2024.

Federal Ministry of Food and Agriculture

ITTO-BMEL PROJECT (PP-A/54-331A)

"Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics"

Biomass and carbon stock in teak (*Tectona grandis* L.f.) plantation in Thailand

INTRODUCTION

In circumstances where climate change or global warming is more severe, which may cause the world's disadvantage, tree and forest are a major assistant in helping to absorb greenhouse gases, which are a major cause of global warming. Teak is an indigenous and high-value species that has been of importance to Thailand from the past until the present. According to the tree economic planting promotion program by the Royal Forest Department, teak is the most popular tree species among farmers. Teak is not only being able to use timber to create economic value, a source of carbon storage, and carbon credit trading are also incentives for promoting planting. So the study of biomass and carbon stock in certain teak plantations and creating the friendly use tables that present the biomass and carbon stock are matters of study.

METHODOLOGY

A 40 × 40 m² plot was set in each of the 14 teak plantations.

Tree height and DBH were measured and selected 5-10 trees of different sizes were selected in each plot for samples

For each sample tree, tree parts were separated into stem, branches leaves and root.

The 500 g of each component were brought back to the laboratory. Their dry/fresh mass ratio were determined after oven-drying.

The sample trees without damaged crowns or broken trunks were selected to cut. After felling, diameter at any level (0.0, 0.3, 1.3 m. and every 1.0 m length) to the top were measures

Fresh masses of each tree parts were measured in the field.

The power-form of allometric equations ($y = ax^b$; y is the dry mass of each component, x is the size parameter, a and b are coefficients) were created. For each component

RESULTS

Allometric equations

The result indicated that the allometric equations can estimate biomass in 14 teak plantations even where their site index, plant spacing, and region of plantations are different. For convenience and ease of application, only the DBH variable was used to create allometric equations for estimating the dry weight of teak above-ground and below-ground biomass as follow;

W_{TOP} - $0.0647\ DBH^{2.5715}$ $R^2 = 0.99$

W_R - $0.0453\ DBH^{2.1839}$ $R^2 = 0.90$

By W_{TOP} - Above-ground biomass (kg/tree)

W_R - Below-gromnd biomass (kg/tree)

DBH - Diameter at breast height (cm)

Biomass, carbon stock and carbon dioxide (CO_2) absorption

Stand mean DBH (6.3 - 34.7 cm) and H (4.3 - 22.6 m). Tree density (163 - 1,106 trees ha^{-1}) and the site index (defined as the dominant tree height at a stand age of 30 years) ranged from 12 to 32. The biomass, carbon stock and carbon dioxide in each stand showed as follow;

	Biomass (ton ha^{-1})	Carbon stock (ton C ha^{-1})	CO_2 absorption (ton CO_2 ha^{-1})
W_{TOP}	1.30 to 67.70	1.30 to 67.70	1.30 to 67.70
W_R	0.40 to 13.70	0.40 to 13.70	0.40 to 13.70

For more convenience and friendly use for people and farmers, the Table of Dry weight, Carbon stock, and CO_2 absorption in Teak Plantations in Thailand was also the output of this study.

MORE INFOMATION

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Federal Ministry of Food and Agriculture

ITTO

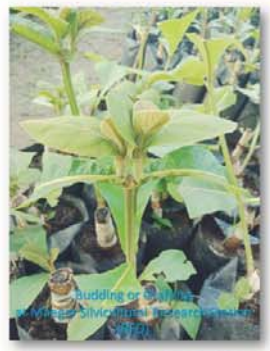
ITTO-BMEL PROJECT (PP-A/54-331A)

"Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics"

Demonstrate Teak Clonal test plot, planting in 2021

Operation 1

Prepare teak seedlings (budding or grafting) to cutting. Test planting of 108 Plus tree, select seedlings for clonal test form cutting to planted 100 plus tree.



Operation 2

Planted layout the RCBD plot for 4 blocks (rep.), planting 3 trees in rows at a spacing of 4x4 meters, planting another 1-2 rows of buffer zone.

Operation 3

Determine 3 planting areas of 15 rai each.	Chemical properties of soil. pH	% Organic Matter	N, P, K	Measuring tree growth. (DBH – cm)	(Ht – m)	% survival rate
Silvicultural Research Center No. 5 (Khon Kaen), Chum Phae District, Khon Kaen Province.	6.48 - 8.05	1.478 - 4.601 (Silt Mix. C or L)	N = 0.023 - 0.119 P = 46.06 – 163.36 K = 13.00 - 29.67	1.51 - 4.72	1.45 - 4.55	81.67
				Information as of 2023		
Thung Kwian Reforestion, Hang Chat District, Lampang Province	5.10 - 6.37	1.18 - 3.22 (Clay Loam)	N = 0.02 - 0.12 P = 50.99 - 95.18 K = 41.67 - 115.00	1.59 - 9.24	0.45 – 8.20	92.78
				Information as of 2024		
Kroeng Krawia Reforestion, Thong Pha Phum District Kanchanaburi Temple Province.	5.70 - 6.98	1.679 - 3.25 (Clay Loam)	N = 0.023 - 0.119 P = 49.89 - 101.39 K = 74.00 - 193.67	0.56 - 8.30	0.40 - 5.88	75.75
				Information as of 2023		

Operation 4

Maintain, monitor and evaluate the growth of teak clonal test in different environmental zones.

MORE INFOMATION

NAME: SOMPORN KHUMCHOMPOO

Affiliation, Role: Forest Research and Development Office of Royal Forest Department, Scientist, Professional Level.

E-mail: forest.636383@gmail.com

Federal Ministry of Food and Agriculture

ITTO

Monitoring the Health and Productivity of Teak Plantations in the Guinean Zone of Togo: A Comparative Study of Historical and Newly Introduced Provenances

Adzo Dzifa KOKUTSE, Kossi SEGLA, Kossi ADJONOU, Komlanvi Katché AKOETE, Kossi HOUNPKATI, Essè AYIGA, Kouami KOKOU*

Forestry Research Laboratory, University of Lomé, Togo

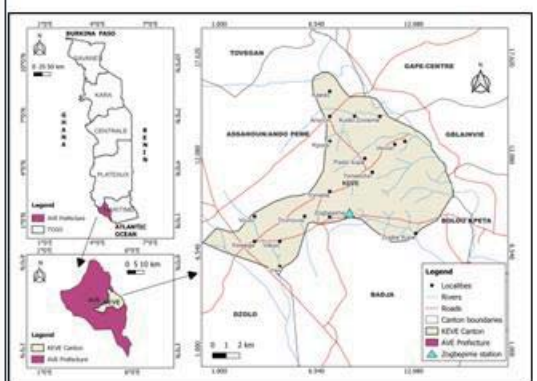
Corresponding Author: kokoukouami@hotmail.com

INTRODUCTION

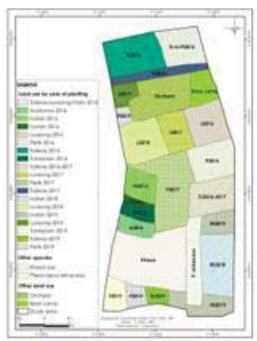
Teak (*Tectona grandis*), a tropical timber species introduced to Togo in 1905, plays a key role in the country's forestry sector. The productivity of these plantations has declined due to low genetic diversity. This study, conducted at the Zogbépimé forest station, evaluates the growth performance of seven teak provenances, including new introductions from India, Malaysia, and Tanzania, to identify superior provenances for future reforestation efforts.

METHODOLOGY

- **Location:** Zogbépimé Forest Station, Guinean Zone of Togo.



- **Study Design:** Comparative analysis of seven teak provenances (IN: Indian, T: Tanzanian, IV: Ivoirian, P: Perlis, TL: Taliwas, L: Louasong, A: Avétonou).



- **Data Collection:** Systematic inventory with measurements of tree height and diameter using forestry tapes, dendrometers, and clinometers.
- **Analysis:** Dendrometric data (total height, diameter at 1.30m, basal area) analyzed in Excel 2013, with ANOVA performed to compare growth performance.

RESULTS

Table: Growth Performance of Different Teak Provenances in Zogbépimé Forest Station

Provenance	DBH (cm)	Height (m)	Basal Area (m^2/ha)
Avétonou	17.22 ± 2.92	14.5 ± 1.47	13.42
Tanzanian	16.33 ± 3.3	15.70 ± 2.28	22.27
Ivoirian	16.14 ± 2.79	15.54 ± 2.09	11.20
Indian	17.91 ± 2.51	16.52 ± 1.22	23.38
Perlis	15.85 ± 2.63	16.07 ± 1.32	19.41
Luasong	16.5 ± 2.30	16.85 ± 2.88	18.46
Taliwas	14.45 ± 2.42	15.85 ± 2.02	15.50

- **Indian Provenance:** Highest DBH (17.91 cm), basal area (23.38 m^2/ha), good height (16.52 m).
- **Luasong Provenance:** Tallest trees (16.85 m), with high productivity but slightly lower DBH (16.5 cm).
- **Tanzanian Provenance:** Strong performance with notable basal area (22.27 m^2/ha) and height (15.70 m).
- **Avétonou Provenance:** Lower height (14.5 m), basal area (13.42 m^2/ha), indicating growth limitations.
- **Intermediate Performances:** Perlis, Taliwas, and Ivoirian provenances.

CONCLUSION

The newly introduced Indian and Luasong provenances show promising potential for improving teak plantation productivity in Togo. Further studies should explore other attributes like wood quality and the influence of site conditions on performance.

More information
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Email: kokoukouami@hotmail.com

Forestry Research Laboratory, Faculty of Science, University of Lomé

SOME MAJOR ACHIEVEMENTS FROM VIETNAM COMPONENT IN 2023-2024

Output 1: Supply chains of smallholders and community based teak and other valuable species plantation and management systems have been strengthened

Activity 1.1. Improved management of existing and new demonstration plots for teak and other valuable species to support Smallholders and local communities.

Select suitable sites for silvicultural experiments

Planting teak in March 2024

August 2024

Teak at five months after planting

Cooperated with FFF Project to support small households in Yen Bai province establishing 3 ha of teak

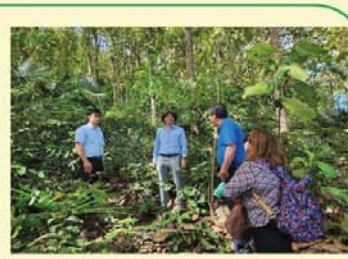
Activity 1.2. Field training on silvicultural practices and improved stand management of teak and other valuable species

Cooperated with FFF Project to organized one training on planting Teak and other native tree species for local people in Son La province

Output 3: Regional and international collaboration, information sharing and knowledge management, networking, policy development and outreach for sustainable smallholder teak and other species plantations have been strengthened

Participated 26th IUFRO World Congress in Sweden

Visited Thai Orchids Lab Co. Ltd. for importing high quality Teak clones



Delegate of Thai Orchids Lab Co. Ltd. visit Teak plantation in Dong Nai province

BIOGRAPHY OF SPEAKERS

Dr. Tetra Yanuriadi is the ITTO Projects Manager of Trade and Industry (since 2008) where goals include enhancing SFM in the tropics while expanding and diversifying the trade in tropical wood products from sustainably managed and legally harvested forests. Objectives are to grow financial/ policy support for the implementation of SFM in the tropics, address market access/customs regulations and international policies for tropical forest products and identify measures to implement and balance sustainable production/ consumption in line with the SDGs 2030. Tetra was previously the Head of Forestry Division/ Forestry Attaché of the Indonesian Embassy, Tokyo (2007); Forest Program Coordinator of WWF Indonesia (2005-2006), and Head of Evaluation Division of the Indonesian Ministry of Forestry and Environment (2001-2005).

He graduated from Forestry Faculty of Mulawarman University, Indonesia (1985) and holds a Master degree in Forest Science from ITC- Twente University (1991) and a PhD degree in Agricultural and Environmental Sciences from Wageningen University, the Netherlands (1999).

Yongyut Trisurat is a Full Professor of Forestry at Kasetsart University in Bangkok, Thailand, and the Regional Project Manager of the ITTO-Teak Project in the Tropic. He has been active in the areas of protected areas, biodiversity conservation, landscape ecology, climate change, and GIS for over 30 years and has been a frequent contributor to several international agencies.

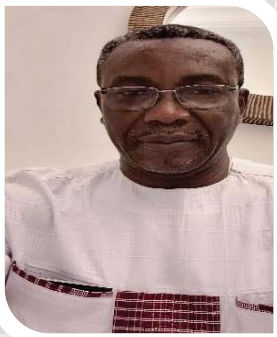
Professor Yongyut Trisurat is a member of Thailand's National Committee for the Conservation and Sustainable Use of Biodiversity, a member of Thailand's National World Heritage Committee, a Bureau Member of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), a co-chair of the Asia-Pacific Biodiversity Observation Network (*APBON*), Chair of Scientific Committee for International Long-term Ecological Network-for East-Asia Pacific Region, and a committee member of Key Biodiversity Areas (KBAs). In addition, he was a coordinating lead author of the 6th IPCC AR WGII and a lead author of the IPBES Scenarios and Models Assessment Report.

Dr. Khwanchai Duangsathaporn is a senior lecturer and former head of the Department of Forest Management at the Kasetsart University Faculty of Forestry (KUFF) in Bangkok, Thailand. He also serves as an adjunct lecturer on Forest Laws and Policy at several universities. His areas of expertise and interest include Forest Policy and Planning, Forest Inventory and Monitoring, Forest Certification, and Dendrochronology. Currently, he heads the Thailand National Forest Policy and National Forestry Master Plan Drafting Committee and holds various positions outside the university, such as being a member of Thailand's National Boards on Forest Policy, Land Policy, Forest Community Policy, National Environment, and National Reform.

He is the founder of the Laboratory of Tropical Dendrochronology (LTD) at KUFF. He has been actively involved in improving Thailand's primary forest laws, having contributed to more than nine acts. He also served as a member of the Board of Directors of the Thailand Greenhouse Gas Management Organization for around three years.

Dr. Michael Jenke is a Lecturer in the Department of Silviculture at Kasetsart University. He earned his Ph.D. in Tropical Forestry from Dresden University of Technology, Germany, specializing in community forestry. His current work focuses on developing silvicultural practices that enhance high-quality timber production in Thailand. He studies a range of factors including ecological, organizational, economic, and social aspects that are crucial for achieving sustainable forest management. In both his research and teaching,

Dr. Jenke uses individual-based forest models to tailor silvicultural practices to the specific needs of forest owners and sites.



Kouami KOKOU is a Full Professor at the University of Lomé (Togo), specializing in Natural Resource and Environmental Management, Forest Ecology, and Botany. He served as the National Director of Scientific and Technical Research in Togo from 2014 to 2023 and has been a key expert with the African and Malagasy Council for Higher Education (CAMES). He has contributed significantly to the Agence Universitaire de la Francophonie in West Africa and is Steering Committee Member of the World Bank's Centers of Excellence. Prof Kokou has supervised over 100 theses, participated in numerous thesis defenses and various scientific conferences. He has reviewed for more than 50 international journals and directs the Togolese Journal of Sciences.

His work has earned him the Officer of the Order of Academic Palms of Togo in 2018 and the IFS/DANIDA Prize in 1999. With over 250 published articles and the coordination of around 30 projects, he has also served on the Forest Stewardship Council, promoting sustainable forest management.

Assoc. Dr. Ponthep Meunpong is an accomplished Associate Professor specializing in arboriculture and tree care, holding a B.Sc., M.S., and Ph.D. in Forestry. Currently at Kasetsart University in Bangkok, Thailand, he brings over a decade of experience, transitioning from roles as a Government Forest Officer and Researcher to a certified Professional Arborist.

Recognized by the International Society of Arboriculture, Dr. Meunpong co-founded the Thailand Arboriculture Association, actively shaping professional standards In Thailand. His commitment extends to collaborating with the Thailand Professional Qualification Institute, working on establishing occupational standards and assessment centers for the growth of arboriculture in Thailand. A highly respected figure, Dr. Meunpong's dedication influences both current and future generations of arborists, making significant contributions to tree preservation and care.

Mr.Nattawin Phongsphetrarat is a Managing Director of TPS Garden Furniture Co.,Ltd. TPS Garden Furniture Co.,Ltd is a manufacturer and exporter of Teak products for over 60 years. He is also Managing Director of Marchetti Group in Myanmar running Construction solution business, Telecom & IT business and Trading business.

Mr. Nattawin is also Honorary Trade Advisor to Ministry of Commerce (HTA) Thailand to Myanmar, Honorary Advisor to Thai Business Association of
Myanmar and Advisor to Thai - Myanmar Cultural and Economic Cooperation Association.

Mr. Nattawin Phongsphetraeat obtained Master of Business Administration, Anderson School, University of California Los Angeles (UCLA) and Bachelor of Business Administration Finance and Banking, Chulalongkorn University, Thailand

Dr. Osamu Saito is Principal Policy Researcher at Institute for Global Environmental Strategies (IGES). He worked for United Nations University Institute for the Advance Study of Sustainability (UNU-IAS) as Academic Director from 2011 to 2020. As an expert in the field of biodiversity and ecosystem services, he has been working on the interlinkages between ecological, human and social systems through sustainability science approaches. His research experiences include socio-ecological studies on the ecosystem services provided by traditional rural production landscapes (*Satoyama*) in Japan, other Asian countries, and Sub-Sahara Africa. He has been also actively promoting various activities for Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) as a lead author of both regional and global assessments. He has been a managing editor of the *Sustainability Science* journal (Impact Factor 2023: 5.1) published by Springer Nature since 2011. He is also Visiting Professor, the University of Tokyo, and Visiting Professor, University of Philippines.

He published more than 150 peer-reviewed journal articles and 12 edited books including “Sharing Ecosystem Services: Building More Sustainable and Resilient Society” (Saito, 2020), “Managing Socio-ecological Production Landscapes and Seascapes for Sustainable Communities in Asia: Mapping and Navigating Stakeholders, Policy and Action (Saito et al. 2020), and “Assessing, Mapping and Modelling of Mangrove Ecosystem Services in the Asia-Pacific Region” (Dasgupta, Hashimoto, Saito. 2022).

Mr. Say Sinly, Staff of the Project: “Promoting Quality Timber Production in Smallholders and Community based Teak and Other Valuable Species Plantations in the Tropics (Teak Project Phase II)”

Mr. Sinly graduated in the field of Forestry Science from Royal University of Agriculture in 2005, and he got his Master of Business Administration in 2016.
He has been working for the Ministry of Agriculture, Forestry and Fisheries since 2006. From 2019, he has commenced his vice chief of Private Forest and Partnership Office of the Department of Private Forest and Forest Plantation Development, Forestry Administration of Cambodia.
From 2013-2015, he fulfilled his position of field assistant to the “ITTO Project PD577/10 Rev.1 (F) “Management of the Emerald Triangle Protected Forests Complex to Promote Cooperation for Trans-boundary Biodiversity Conservation between Thailand, Cambodia and Laos (Phase III)”.

As a field and technical coordinator, he also used to be involving in the Project titled “Investigating the Risk of Human Disease from Parasites of Small Mammals and Bats” from 2016-2019; the CITES Project titled “Integrating the Development of Guidelines and Incentives for Piloting the Establishment of Small-scale Private Dalbergia Plantation with Determination of a Non-detriment Finding Report in Prech Vihear Province in Cambodia” from 2020-2021; the Project “The Registration of small-scale private forest plantation in Cambodia” which was funded by AFoCO from 2020-2022. Last but not least, he was involved with the BMEL-ITTO Project: “Enhancing Conservation and Sustainable Management of Teak Forests and Legal and Sustainable Wood Supply Chains in the Greater Mekong Sub-region” from 2019-2022.

Mr. Narongchai Chonlapap is a seasoned forestry professional with over 20 years of experience in sustainable forest management and environmental conservation. As the Carbon Business Division Chief at the Forest Industry Organization, Ministry of Natural Resources and Environment, he has played a pivotal role in driving initiatives related to carbon credit management and sustainable forest practices.

His career trajectory, which spans from field-level roles in national parks to high-level management positions, underscores his deep understanding of forest ecosystems and the challenges they face. Dr. Chonlapap has been instrumental in developing and implementing sustainable forest management standards, conducting high conservation value (HCV) assessments, and contributing to research on forest resource economics.

With a Ph.D. in Forestry from Kasetsart University, Dr. Chonlapap possesses a strong academic foundation. His practical experience, coupled with his academic qualifications, has made him a sought-after expert in the field. He has actively participated in national and international forums, contributing to the development of policies and guidelines related to forest conservation and climate change mitigation.

Boonlert Srisuksai

Education

- Bachelor of Science (Forestry), Faculty of Forestry, Kasetsart University.
- Master of Science (Forestry), Major in Silviculture, Kasetsart University.

Work Experience

Worked at Forest Industry Organization (FIO), Ministry of Natural Resources and Environment between 1973 to 2011. There were many responsibilities as below

- 1973-1997, In the position of assistance chief and chief of plantation units.
- 1997-2011, administrator was responsible for plantation administration.
- Final position, Deputy manager of Forest Industry Organization (head office).

Observational Study

- Observed about teak management at Myanmar.
- Visitor of plantation company at Japan.

Awards and Honors

- 1980, Best chief of plantation annual award.
- 2008, Best Alumni of faculty of forestry, Kasetsart University. (academic and practical expert)

Present

- Advisory of Forest Industry Organization in the field of organized management and plantation.
- Advisory of B-Farm company teak plantation, Petchabun Province.
- Advisory of Sritrang Rubber and Plantation company Teak Plantation.

Dr. P.K. Thulasidas was the former Principal Scientist & Head of the Dept. of Wood Science and Technology at Kerala Forest Research Institute, India. He was also the Former Coordinator of International Teak Information Network (TEAKNET) based in India. He holds Ph. D in Wood Science & Technology from the Forest Research Institute, Dehra Dun, India and has more than 36 years' vast experience in tropical forestry research with profound interest in the wood quality assessment of teak and other tropical timbers and is an expert in timber identification and testing. At present, he is International Consultant for knowledge management and networking for the ITTO- BMEL Teak project currently under implementation by ITTO (2023-2026) and in the previous completed ITTO Teak Mekong project (2019-2022). He also holds Dy. Coordinatorship of IUFRO Teakwood Working Party (Div 5.06.02), Vienna, Austria since 2009 and is Member, Steering Committee of TEAKNET. At present, he is the Chief Editor of ITTO- BMEL Teak Newsletter (bi- monthly online) and member of the Editorial Board of Teaknet Bulletin, Brazilian Journal of Forestry Research (PFB) and Journal of Sylva Indonesiana and guiding research scholars for their PhD.

He was forestry consultant to Life Forestry Group Switzerland AG (2017) for evaluating the yield of 20-25-years old short- rotation teak plantations in Costa Rica and FAO consultant to FRI, Yezin, Myanmar (2018) for imparting one week training to FRI Scientists and researchers. Recently, he was Consultant to ITTO, Japan for the formulation of ITTO- BMEL Teak project now under implementation in 6 participating countries in Asia Pacific and Togo (2023). He had organized many international events and side events on teak at many conferences sponsored by IUFRO, Teaknet, FAO, ITTO and other international organizations across different parts of the world; chaired the sessions and presented papers. In addition, he was associate editor of many conference proceedings, published books, chapters in books and research reports to his credit. He had visited more than 20 countries as part of his professional job and is author of more than 70 peer- reviewed papers in reputed journals and is reviewer to many international forestry journals.

Dr. Dang Thinh Trieu is a senior reseacher in Silviculture Reseach Institute – Vietnamese Academi of Forest Science. He has 30 years working in forest rehabilitation, sustainable forest management, forest biomass and carbon estimation and rural development.

He was leader of many projects and assignments. He has been working for numbers of national and international organizations such as Ministry of Agriculture and Rural Development (MARD), Ministry of Science and Technology (MOST), Food and Agriculture Organization of the United Nations (FAO), United Nations Development Programme (UNDP), International Tropical Timber Organization(ITTO), Netherlands Development Organization (SNV), Japan International Cooperation Agency (JICA), German International Cooperation (GIZ), International Bamboo and Rattan Organization (INBAR), Australian Centre for International Agricultural Research (ACIAR), World Agroforestry Center (ICARF), Earthworm Foundation (EF), Niras Finland Oy, United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD), Fauna and Flora International (FFI), The Australian Agency for International Development (AusAID), The Center for International Forestry Research (CIFOR) and Vietnam Conservation Fund (VCF).

Mr. Vongvilay Vongkhamsao holds a Master's degree in Natural Resource Management (NRM) from the Asian Institute of Technology (AIT). With a career spanning thirty years, he has led numerous projects focused on forestry and non-timber forest products at the National Agriculture and Forestry Research Institute (NAFRI), under the Ministry of Agriculture and Forestry in Laos.

From 2015 to 2022, Mr. Vongvilay served as the Director of the Forest Sciences Research Centre. He possesses strong skills in project management, planning, and communication. Recently, he collaborated with the Faculty of Forestry at the National University of Laos (NoUL) to implement the ACIAR Improvement Policy, aimed at promoting tree plantations among smallholders in Laos and Vietnam.

Between 2019 and 2022, he was the National Project Coordinator for the ITTO Teak project in the Mekong Region, which was funded by the Government of Germany. Additionally, he serves as the National Focal Point for several important initiatives, including the ASEAN Working Group on Forest Product Development (AWG-FPD), the Sino-ASEAN Forestry Research Institutes (SANFRI), APFNet, and the Asia Food Agriculture Cooperation Initiative (AFACI) Project.

Assoc. Prof. Dr. Decha Wiwatwittaya is a lecturer at the Department of Forest Biology, Faculty of Forestry, Kasetsart University, who graduated with a doctorate in forest entomology at Kyoto University, Japan.

He has more than 30 years of research experience. He has studied *teak beehole borer (TBB)* for more than 15 years until he was the first to design a precise TBB control. He has also studied ants for more than 25 years in the areas of taxonomy, biology, ecology, behavior, and application. He is considered a pioneer in the serious study of ants in Thailand and founded the *Ant Museum*, Faculty of Forestry in 2001.

Dr. Zar Chi Hlaing is working at the Forest Research Institute (FRI) of Forest Department of Myanmar since 2007. Now she is working at FRI as Assistant Director/ Research Officer. She supervises the Natural Resources Section of Forest Development Division under the FRI in which, especially, forest soil and water laboratories and related research are implementing together with other researchers. She is also in-charge of two Research Stations where natural forest and plantation (especially teak plantation) management, establishment of demonstration plots and research trials for the Teak plantation such as planting stocks, gene bank, clonal seed orchard (CSO) and hedge garden (HG). And she is conducting the research related to the spacing effect on the growth of plantations (Teak plantation) and artificial natural regeneration (ANR) effects on the natural resource management.

She graduated from University of Forestry of Myanmar (now University of Forestry and Environmental Sciences) in 2006. She holds a Master degree in Environmental Sciences (Plantation Management) at the Collage of Agriculture and Life Science (CALS) of Seoul National University, South Korea, in 2012, and PhD degree in Sustainability Science at United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS), Tokyo, Japan in 2017.

Woraphun Himmapan is a senior researcher in Forest Research and Development Office, The Royal Forest Department, Thailand. She has been working as the coordinator of Japanese Researchers from Japan International Research Center for Agricultural Sciences (JIRCAS).

Moreover, she has been the project leader of research studied the teak management such as the effect of thinning and pruning to the growth and shape, the volume, biomass and carbon estimation of teak. This present she is studying with the biomass equation of high-valued tree species in Thailand.

Somporn Khumchompoo is a scientist, professional level working in Forest Research and Development Office, Royal Forest Department. Bachelor of Science (Forestry), Faculty of Forestry, Kasetsart University and Master of Science (Biology), Silpakorn University, Bangkok, Thailand. Head of Project to Teak Clonal test Plantation in farmer areas and maintain plots planting in 2021.

Draft Concept Note

Regional Workshop on

"Enhancing Smallholder Plantations Towards Quality Timber Productionof Teak and Other Economic Species and Carbon Neutrality in the Tropics"

18-21 September 2024, Bangkok, Thailand

Background:

The project ITTO-BMEL **Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics** (PP-A/54-331A) aims to support the six participating countries' policies and strategic goals in promoting the sustainable management of teak resources and plantation efforts on public and private land. Additionally, the project focuses on the certification and legality of sustainablyproduced timber, including that from small- and medium-sized enterprises, along with enhanced value chain processes in the wood industry and promoting carbon-supported plantation development. Building on ITTO's comparative advantage, the project leverages the organization's expertise in addressing forestry issues that require strong public, private, and community collaboration. ITTO's proven track record in policy development and capacity-building initiatives in its producer member countries further strengthens the project's foundation.

The development of management models for smallholder value chains in teak and other valuable species plantations and the introduction of supportive finance systems will encourage smallholders and forest communities to plan the sustainable management of plantation resources and quality timber production in longer rotations and efficient timber and timber products processing. Cooperation with smallholder farmers and entrepreneurs will increase livelihood opportunities for local residents and reduce pressures on the unsustainable use of forests. The Project also will assist in the practical application of the certification of sustainability of forest management, and the verification of timber legality. The capacity-building program of the Project will be based on a rapid, participatory training needs assessment that will be implemented in close cooperation with forestry authorities, academic and research institutions, NGOs, and interested development partners.

The project leverages existing experiences and knowledge from relevant ITTO projects on teak and other valuable species through South-South cooperation in the two tropical regions. Field activities in selected countries in the Asia-Pacific and West Africa will focus on smallholder farming systems, integrating valuable native multifunctional species to provide alternate income sources alongside teak planting for long rotations. Key collaborating agencies include the Cambodia Forestry Administration, Thailand's Royal Forestry Department and Kasetsart University, Vietnam Administration of Forestry/Vietnamese Academy of Forest Sciences, Indian Council of Forestry Research & Education, Dehra Dun, and the Indonesian Ministry of Environment and Forestry. In Togo (West Africa), the University of Lomé will play a pivotal role.

The project also aims at harnessing synergies with other organizations working in the same field such as IUFRO and TEAKNET. A specific collaboration with the Thünen Institute of Forestry will be arranged to carry out feasibility studies for financing schemes for smallholders' teak and other valuable species plantations. The project will explore recent incentive programs and improve smallholders' access to finance and long-term investments to meet market specifications.

Knowledge sharing and outreach efforts for the two tropical regions will be strengthened through webinars and workshops, and participation in important events such as IUFRO World Congress 2024 and the fifth World Teak Conference in 2025.

The first regional workshop on **Enhancing Smallholder Plantations Towards Quality Timber Production of Teak and Other Economic Species and Carbon Neutrality in the Tropics** is being jointly organized by the Faculty of Forestry, Kasetsart University, and ITTO in collaboration ~~of~~ with the six participating countries in Asia-Pacific and West Africa.

Objectives:

The overall goal of this workshop will focus on the planning and implementation of researchand development activities of good quality timber production along with enhanced value chain processes in the wood industry and promoting carbon-supported plantation development, while the specific objectives are to:

IV. Review status of smallholder and community-based teak and other valuable species plantations and management in the Asia-Pacific and West Africa regions

V. Review policy and institutional arrangements for legal and sustainable supply chains and micro-finance mechanisms for longer restoration and carbon restoration.

VI. Review and share experiences on case studies, good practices and policy options to promote local communities and smallholders in planted teak and other valuable species, and agroforestry systems to support sustainable livelihoods

A post-workshop field excursion to teak wood industries and teak plantations in northern Thailand will be organized.

The outputs of the First Regional Workshop will be shared among the six participating countries in the Asia-Pacific and West Africa, interested individuals and organizations.

In addition, workshop outputs will be shared at the 5th World Teak Congress to be held in Kerala,India in 2025. The ITTO-BMEL Teak Newsletter and ITTO TFU will also share the outcomes.

Language of the Meeting: English

Sponsorship:

The ITTO-BMEL Teak Project in Mekong will support invited participants from the participating countries and selected experts.

Meeting venue (TBC):

Best Western Nada Don Mueang Airport, Bangkok (SHA+ Certified)

235/8 Phahonyothin Road, Anusawari, Bang Khen, Bangkok, Thailand More detail from QR Code below or https://www.bwnadadonmueang.com

Contact persons:

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E-mail: fforyyt@ku.ac.th

ITTO:
Dr. Tetra Yanuariadi
Projects Manager of Trade and Industry Division ITTO
Yokohama, Japan
Tel. 81-45-223-1110
Email: tetra@itto.int

Regional Conference on Regional Workshop on

"Enhancing Smallholder Plantations Towards Quality Timber Production ofTeak and Other Economic Species and Carbon Neutrality in the Tropics"

18-21 September 2024, Bangkok, Nan and Phrae, Thailand

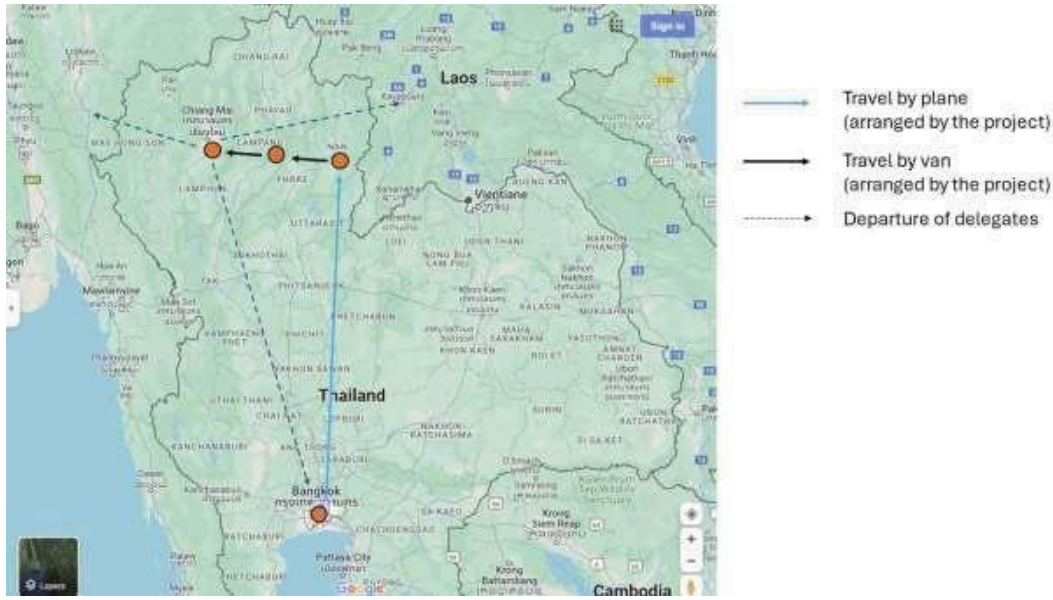
Co-organizers: ITTO, RFD

Draft Provisional Agenda

As of 2 September 2024

Date	Topics
Day 1: Wed, 18 September 2024	
0:09-09:00	**Registration**
09:00-09:30	**Opening Session (MC: Mr. Montree Intasen)** • Welcome remarks by ITTO (*Dr. M. Nurudeen Iddrisu, Director of Trade and Industry Division*) • Welcome remarks by BMEL (*Mr. Stephan Wagner*) • Welcome remarks by RFD (Mr. Bannaruk Sermthong, Deputy Director-General of the RFD) • Opening remarks by Kasetsart University (*Assist. Prof. Kobsak Wanthongchai, Dean of KUFF*) • Introduction of ITTO-BMEL Teak and Other Valuable Species Plantation Project (*Prof. Dr. Yongyut Trisurat, Regional Project Manager*) **Group photo**
09:30-10:15	**Keynote Presentation (MC: Prof. Yongyut Trisurat)** ➢ Thai Government Policy on Economic Tree Plantations *(Dr. Khwanchai Duangsathaporn, Member of Thailand's National Boards on Forest Policy and Forest Community Policy)* ➢ Global Teak Resources and Markets (*Dr. P.K. Thulasidas,TEAKNET*) ➢ ITTO's Work on promoting sustainable wood use (*Dr. Tetra Yanuariadi, Projects Manager*)
10:15:10:30	**Coffee Break and Poster Presentation**
10:30-12:00 (15 minutes each)	**Technical Session 1: Smallholder Plantations Towards Quality Timber Production (***Co-chairs: Dr. Tetra Yanuariadi and Mr. Suchat Kalyawongsa***)** ➢ Progress of the project activity implementation in Cambodia (Mr. Say Sinly, Forest Administration) ➢ Long-term Teak Plantations towards good quality timber (FIO) (Mr. Narongchai Chonlapap Forest Industry Organization) ➢ Commercial Teak Plantations using Intensive Silvicultural Practices (*Mr. Boonlert Srisuksai, Technical Advisor to Sri Trang)* ➢ Development of smallholder Teak plantation in Vietnam (Dang Thinh Trieu, *VAFS*) ➢ Natural Teak Forests and Plantation in Lao PDR (*Mr. Vongvilay Vongkhamsao, NAFRI*) ➢ Management of Natural Teak Forest and Teak Plantations in Myanmar (*Dr. Zar Chi Hlaing, Forest Department*) **Q&A**

12:00-13:00	**Lunch Break**
13:00-13:30	**Keynote Presentation:** • The Nature Future Framework: Tool to support desirable futures for people, Nature and Mother Earth (*Dr. Osamu SAITO, IGES, Japan*)
Afternoon Session 13:30-15:30 (20 minutes each) **(including tea/ coffee break)**	**Session 2: Forest Plantations and Restoration Contributing to Carbon Neutrality and Teak Value Chains & Micro-finance (***Co-chairs: Dr. Suwan Tangmitcharoen or P.K. Dr Thulasidas***)** ➢ Enhancing teak value chains: Challenges and opportunities (*Mr. Nattawin Phongsphetrarat, MD of TPS Garden Furniture Co., Ltd.*) ➢ Advancing the sustainability and quality of Thailand's forest through innovative silviculture and governance (*Dr. Michael Jenke, KUFF*) ➢ Low-Cost UAV as a Tool for Aboveground Biomass Assessment in Teak Plantations: Pros and Cons (*Assoc. Prof. Dr. Ponthep Meunpon, KUFF*) ➢ Monitoring and prevention of insect pest in teak plantations (*Assoc. Prof. Dr. Decha Wiwatwitaya, KUFF*) ➢ Monitoring the health and productivity of teak plantations in Togo: A comparative study of historical and newly introduced provenances (*Prof. Adzo Dzifa KOKUTSE, University of Lomé, In Togo (online*) **Q&A**
15:30-16:00	**Closing Session** • Workshop summary (ITTO-BMEL Project) • Closing Remarks (ITTO, Director of Trade and Industry Division)
	Field Excursion (Only Invited Delegates)
16:00 (Evening)	• Departure to Nan Province from Don Mueng Airport (Thai Air Asia FD3558, @17.45 hrs) • Stay overnight in Nan (Ban Nan Hotel)
	19 Sep 2024
Morning Session	Field Visit to Sri Trang's Teak Plantation at Pua District, Nan Province (by Bus)
Afternoon Session	Travel to Prae Province by Bus
	Stayover night in Phrae Province (Huern Kan Thong Hotel)
	20 Sep 2024
Morning Session	Visit: Teak-wood-based industry: Teak sawmill; Teak wood manufacture and furniture (*Hosted by The Federal Of Thai Industries Phrae Chapter)*
09-12.00	Discuss with Phrae Industry Chamber and wood-based industry ownerson Thailand Creative and Learning Wood Industrial Center (by Bus)
Afternoon session	Field visit to FIO's long rotation of teak (Lampang Province - optional) (by Bus)
	Stay overnight in Chiangmai Province (The Nimman Hotel)
	21 Sep 2024
Morning	• Departure of participants



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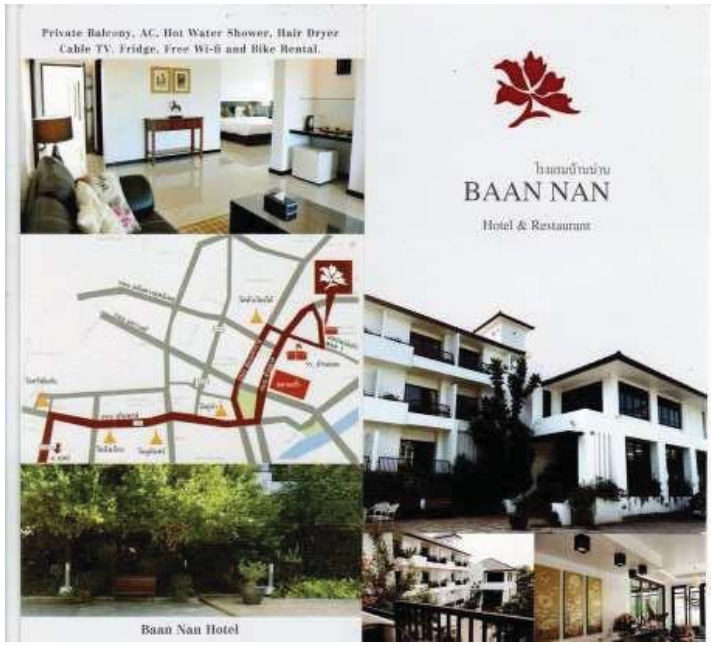
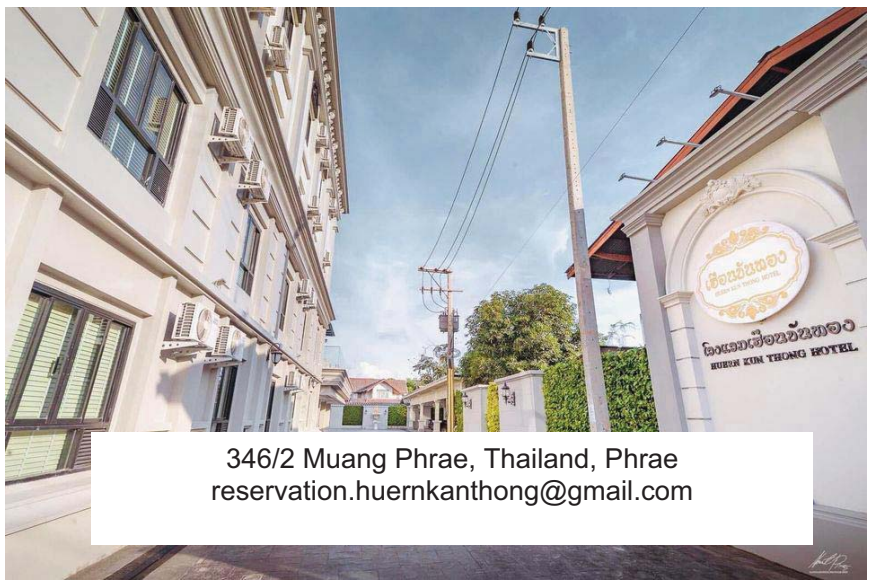
Hotels

Best Western Nada Don Mueang Airport Hotel
235/8 Phahonyothin Road, Anusawari, Bang Khen, Bangkok, Thailand More detail from QR Code below ohttps://www.bwnadadonmueang.com





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URL: https://itto-bmel-project.com/our-aims/