



INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO PROJECT DOCUMENT

Title	Promoting Quality Timber Production in Smallholders and Community-based Teak and Other Valuable Species Plantations in the Tropics
Serial Number	PP-A/54-331A
<u>Summary</u>	<p>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 (<i>Tectona grandis</i>) plantations have been widely established across 70 tropical countries over an estimated 6.89 million hectares, nearly 80% of which is in Asia followed by 10% in Africa and 6% in Latin America. 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.</p> <p>The Project aims to significantly 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. This will be achieved by promoting policies to secure high quality planting stock, adoption of best silviculture practices, access to financing to promote longer rotations, value addition, and improved timber legality. Key activities include promoting financial schemes that invest in high-quality teak production with long rotations and provide access to voluntary carbon markets. Tapping into the carbon credit markets would provide additional incentives and support the global effort on climate change mitigation. Furthermore, it facilitates regional and international cooperation for sustainable smallholder plantations. Through the effective implementation of policies and the promotion of collaboration promotion, this Project will contribute to improving the economic outcomes of smallholder and community plantations in the tropics.</p>
Executing agency:	ITTO Secretariat
Collaborating agencies:	<p><u>Asia- Pacific</u> Cambodia: Forestry Administration Thailand: Royal Forestry Department/Kasetsart University Vietnam: Administration of Forestry/Vietnamese Academy of Forest Sciences India: Indian Council of Forestry Research & Education Indonesia: Research Centre for Plant Conservation Botanic Garden and Forestry /National Research and Innovation Agency (BRIN)</p> <p><u>West Africa</u> Togo: University of Lomé</p>
Duration	36 months
Approx. starting date	September 2023



INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO PROJECT DOCUMENT

Proposed budget and other funding sources:	Total USD 1,413,449 Source contribution (in USD) ITTO (Government of Germany) USD 1,413,449 <i>(equivalent to EUR 1,293,301: exchange rate as of 20 June EUR/USD 1: 1.0929)</i>
--	--

Table of Contents

LIST OF ABBREVIATIONS AND ACRONYMS.....	1
MAP OF PROJECT AREA IN ASIA-PACIFIC.....	3
MAP OF PROJECT AREA IN TOGO- WEST AFRICA.....	4
1 PROJECT CONTEXT.....	5
1.1 ORIGIN	5
1.2 RELEVANCE.....	6
1.2.1 <i>Conformity with ITTO's objectives and priorities and support to the SDGs and the UNSPF</i>	6
1.2.2 <i>Relevance to regional and the participating countries' policies</i>	7
1.3 TARGET AREA.....	19
1.3.1 <i>Geographic location</i>	19
1.3.2 <i>Social, cultural, economic and environmental aspects</i>	20
1.4 EXPECTED OUTCOMES AT THE COMPLETION OF THE PROJECT	22
2 PROJECT RATIONALE AND OBJECTIVE.....	23
2.1 RATIONALE.....	23
2.1.1 <i>Institutional set-up and organizational issues</i>	23
2.1.2 <i>Stakeholder analysis</i>	24
2.1.3 <i>Problem analysis</i>	26
2.1.4 <i>Logical framework matrix</i>	29
2.2 OBJECTIVE.....	31
3 DESCRIPTION OF INTERVENTIONS	31
3.1 OUTPUTS AND ACTIVITIES.....	31
3.1.1 <i>Outputs</i>	31
3.1.2 <i>Activities</i>	31
3.2 IMPLEMENTATION APPROACHES AND METHODS.....	35
3.3 WORK PLAN	37
3.4 BUDGET	39
3.5 ASSUMPTIONS, RISKS AND SUSTAINABILITY	46
3.5.1 <i>Assumptions and risks</i>	46
3.5.2 <i>Sustainability</i>	47
4 IMPLEMENTATION ARRANGEMENTS.....	48
4.1 ORGANIZATION STRUCTURE AND STAKEHOLDER INVOLVEMENT MECHANISMS	48
4.1.1 <i>Executing agency and partners</i>	48
4.1.2 <i>Project management team</i>	49
4.1.3 <i>Project steering committee</i>	50
4.1.4 <i>Stakeholder involvement mechanisms</i>	50
4.2 REPORTING, REVIEW, MONITORING AND EVALUATION	51
4.2.1 <i>Dissemination of results</i>	51
4.2.2 <i>Mainstreaming lessons learnt</i>	52
5 ANNEX.....	53
5.1 TERMS OF REFERENCE OF KEY PERSONNEL AND CONSULTANTS TO BE FUNDED BY THE PROJECT.....	53
5.2 LIST OF KEY STAKEHOLDERS IN THE SIX PARTICIPATING COUNTRIES	58

List of Figures

<i>Figure 1: Map of Project area – Asia Pacific</i>	3
<i>Figure 2: Map of Project area- Togo (W. Africa)</i>	4
<i>Figure 3: Organizational structure of the project management team</i>	49

List of Tables

<i>Table 1: Stakeholder analysis</i>	31
<i>Table 2: Logical framework matrix</i>	295
<i>Table 3: Work plan</i>	42
<i>Table 4: Allocation of total budget to project years</i>	44
<i>Table 5: Tentative allocation of the total budget in USD by calendar year and by executing and collaborating agencies</i>	416
<i>Table 6: Estimated costs by project output and activities</i>	449
<i>Table 7: Assumptions and risk mitigation measures</i>	52
<i>Table 8: Consultants to be recruited for the technical tasks</i>	55

List of Abbreviations and Acronyms

AAC	Annual Allowable Cut
ADB	Asian Development Bank
AFoCO	Asian Forest Cooperative Organisation
AFR100	African Forest Landscape Restoration Initiative
AMAF	ASEAN Ministerial Meeting on Agriculture and Forestry
APFSOS	Asia Pacific Forest Sector Outlook Study
ASDP	Agricultural Strategic Development Plan (Cambodia)
ASEAN	Association of Southeast Asian Nations
BAAC	Bank of Agriculture and Agricultural Cooperatives (Thailand)
BMEL	German Federal Ministry of Food and Agriculture
BWP	Biennial Work Programme
CBD	Convention on Biological Diversity
CEP	Core Environment Programme
CIFOR	Centre for International Forestry Research
CIRAD	The French agricultural research and international cooperation organization (France)
CoC	Chain of Custody
CSO	Clonal Seed Orchard
DFID	Department for International Development
EFI	European Forest Institute
ELC	Economic Land Concession (Cambodia)
ESIA	Environmental and Social Risks and Impacts Assessment
EUTR	European Union Timber Regulation
FAO	Food and Agriculture Organization of the United Nations
FIO	Forest Industry Organisation (Thailand)
FLEGT	Forest Law Enforcement, Governance and Trade
FSC	Forest Stewardship Council
GIZ	German Agency for International Cooperation
GMS	Greater Mekong Sub-region
ha	hectare (10,000 sqm)
ICFRE	Indian Council of Forestry Research & Education
IRR	Internal Rate of Return
ITTA	International Tropical Timber Agreement
ITTO	International Tropical Timber Organization
IUFRO	International Union of Forest Research Organizations
LSSC	Legal and Sustainable Supply Chains
MAFF	Ministry of Agriculture, Forestry and Fisheries (Cambodia)
MERF	Ministry of Environment and Forest Resources (Togo)
MRC	Mekong River Commission
NABARD	National Bank for Agriculture and Rural Development (India)
NPC	National Project Coordinator
NAMA	Nationally Appropriate Mitigation Action
NFMP	National Forest Master Plan
NTFP	Non-Timber Forest Products
NDC	Nationally Determined Contributions under the UNFCCC
ODEF	Forest Development and Exploitation Office (Togo)
PEFC	Programme for the Endorsement of Forest Certification
PFE	Public Forest Estate (Togo)
PMT	Project Management Team
PSC	Project Steering Committee

RPM	Regional Project Manager
RECOFTC	The Center for People and Forests (former name: Regional Community Forestry Training Center for Asia and the Pacific)
RFD	Royal Forest Department (Thailand)
RTG	Royal Thai Government
SAP	Strategic Action Plan
SFM	Sustainable Forest Management
SDG	Sustainable Development Goals
SPA	Seed Production Area
SVLK	Sistem Verifikasi Legalitas Kayu/Timber Legality Assurance Standard (Indonesia)
TEAKNET	International Teak Information Network
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNSPF	United Nations Strategic Plan for Forests
VFDS	Vietnam Forest Development Strategy
VPA	Voluntary Partnership Agreement

Map of Project Area in Asia-Pacific

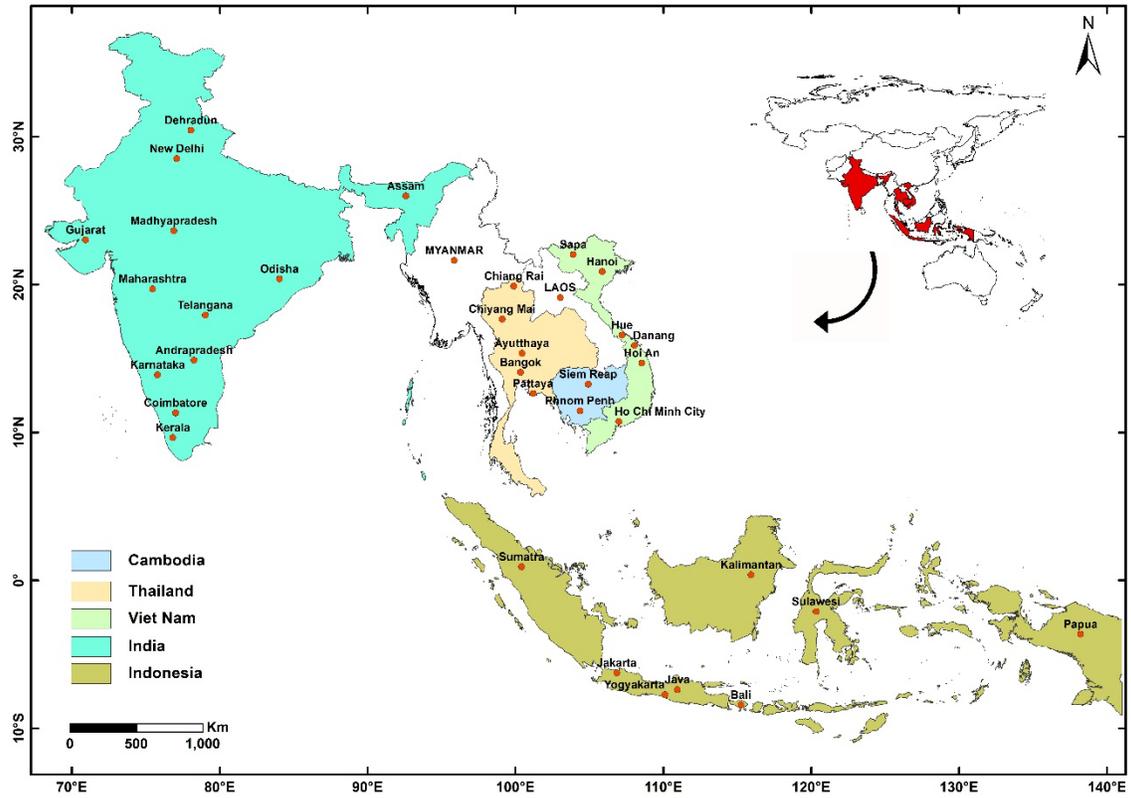


Figure 1: Map of Project area in the Asia- Pacific

Map of Project Area in Togo- West Africa

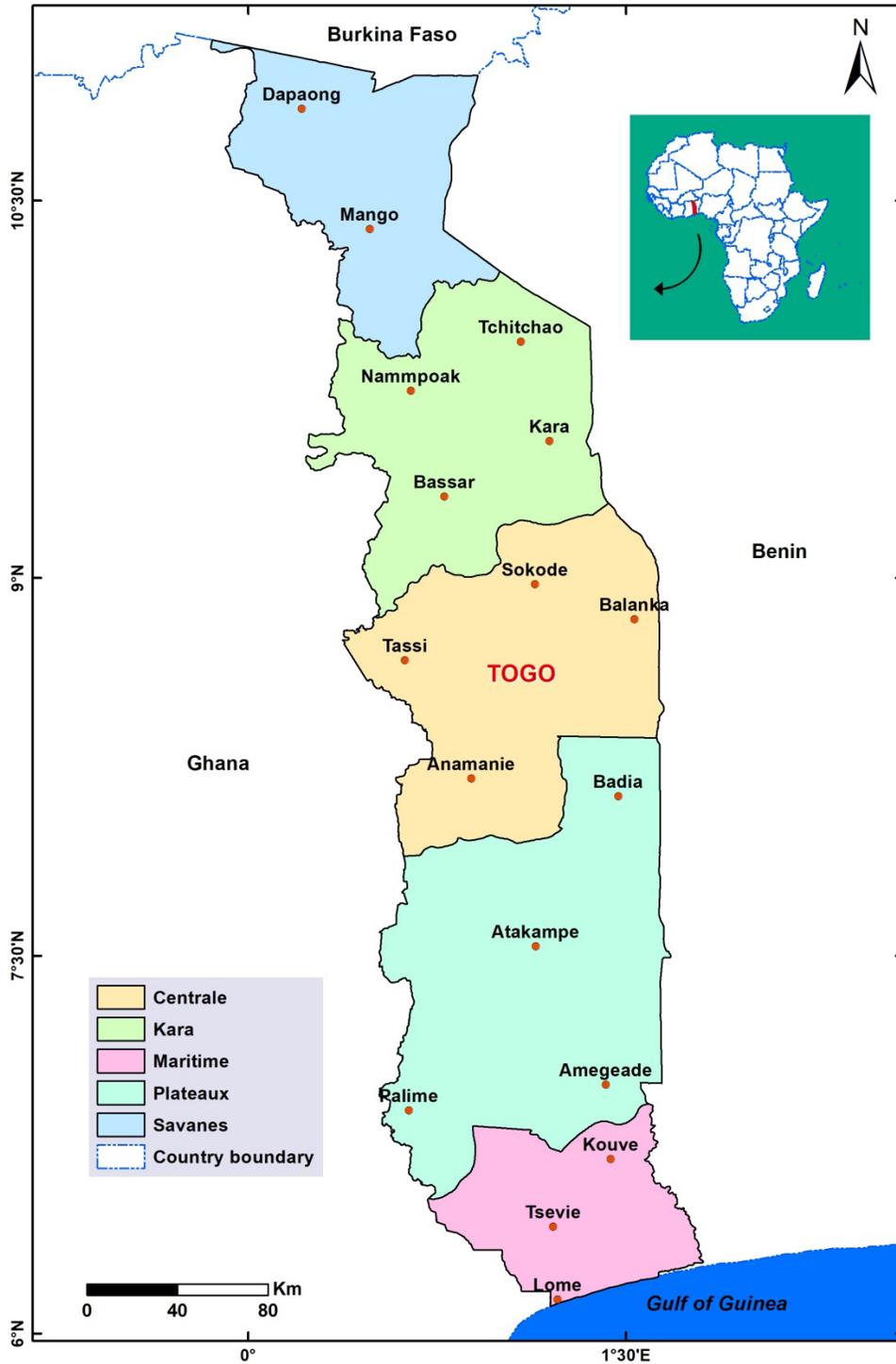


Figure 2: Map of Project area in TOGO- W. Africa

1 Project Context

1.1 Origin

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 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 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. The collaborating agencies include Cambodia Forestry Administration, Thailand Royal Forestry Department and Kasetsart University, Vietnam Administration of Forestry/Vietnamese Academy of Forest Sciences, Indian Council of Forestry Research & Education, Dehra Dun and Research Centre for Plant Conservation Botanic Garden and / National Research and Innovation Agency (BRIN) in Indonesia. In Togo (West Africa), University of Lomé will be a key collaborating agency. 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 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 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 smallholder teak and other valuable species plantations. Recent CIFOR’s launched platform to connect agriculture and forestry- based Micro, Small and Medium Enterprises (MSMEs) with investors and financial institutions will be referred, along with the organization of training event series in Indonesia. The Project will explore more of the recent incentive programs, enhance their access to finance and long-term investments to smallholders’ produce trees to meet the market specifications. Knowledge sharing and outreach efforts for the three tropical regions will be strengthened through the organization of webinars and workshop, as well as the participation in important fora such as IUFRO World Congress 2024 and in the fifth World Teak Conference in 2025.

1.2 Relevance

1.2.1 Conformity with ITTO's objectives and priorities and support to the SDGs and the UNSPF

Compliance with the International Tropical Timber Agreement, 2006

The Project conforms with the objectives of the International Tropical Timber Agreement, 2006 (ITTA, 2006) to promote the expansion and diversification of international trade in tropical timber from sustainably managed and legally harvested forests and to promote the sustainable management of tropical timber producing forests. It relates in particular to the following items of Article 1 of the ITTA 2006:

- Providing an effective framework for consultation, international cooperation and policy development with regard to all relevant aspects of the world timber economy (item a);
- Contributing to sustainable development and to poverty alleviation (item c);
- Promoting and supporting research and development with a view to improving forest management and efficiency of wood utilization and the competitiveness of wood products relative to other materials, as well as increasing the capacity to conserve and enhance other forest values in timber producing tropical forests (item f);
- Encouraging members to support and develop tropical timber reforestation, as well as rehabilitation and restoration of degraded forest land, with due regard for the interests of local communities dependent on forest resources (item j);
- Encouraging information sharing for a better understanding of voluntary mechanisms such as, forest certification, to promote sustainable management of tropical forests, and assisting members with their efforts in this area (item o).

Compliance with ITTO Strategic Action Plan 2022- 2026

The proposal complies with ITTO's objectives and Strategic Action Plan (SAP 2022-2026) towards promotions of the expansion and diversification of international trade in tropical timber from sustainably managed and legally harvested forests.

Strategic Priority 1. Promote good governance and enabling policy frameworks for strengthening sustainable forest management (SFM) and related trade and enhancing SFM financing and investment.

Strategic Priority 2. Increase the contribution of tropical forests to national and local economies, including through international trade of timber and other forest products.

Strategic Priority 3. Reduce tropical deforestation and forest degradation and enhance the provision of forest landscape restoration, biodiversity conservation and ecosystem services.

Strategic Priority 4. Improve the quality and availability of information on tropical forests, forest product markets and trade.

Relevance to the ITTO Program Lines

This proposed project is relevant to ITTO's program line on LSSC. For smallholders (local growers and local wood processors), the impact of LSSC will be on improving quality of wood produced, efficient wood processing, wider access to financial institutions, enhancing value and supply chains and improving livelihood and domestic economy.

Compliance with ITTO's policy guidance

The Project supports the implementation of the ITTO Voluntary Guidelines for the Sustainable Management of Natural Tropical Forests (2015) and the ITTO Criteria and Indicators for the Sustainable Management of Natural Tropical Forests (2016). Also support the ITTO's Guidelines for Environmental and Social Risks and Impacts Assessment (ESIA, 2017) and ITTO's policy on Gender Equality and Empowering Women (GEEW, 2017). In addition, the Project supports the reporting framework of the ITTO Market Information Service (MIS) that regularly reports data and information on global teak markets.

Support to the achievement of the Sustainable Development Goals (SDGs) and United Nations Strategic Plan for Forest 2017-2030 (UNSPF)

The Project contributes to the achievement of SDGs, especially SDG 1 (No Poverty), SDG 13 (Climate Action), and SDG 15 (Life on land). More specifically, 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. The proposed project further supports the pursuance of the countries' strategic objectives and policies on the conservation and sustainable development of forest resources as well widening access to financial institution to support sustainable supply chains of valuable tropical timber and timber products.

Furthermore, the proposed Project is also in consistent with some of the six global goals of the UNSPF 2017-2030, namely:

- Global Forest Goal 1- Reverse the loss of forest cover worldwide through SFM, including protection, restoration, afforestation and reforestation, and increase efforts to prevent forest degradation and contribute to the global effort of addressing climate change.
- Global Forest Goal 2 - Enhance forest-based economic, social and environmental benefits, including by improving the livelihoods of forest dependent people.
- Global Forest Goal 5 - Promote governance frameworks to implement SFM, including through the UN Forest Instrument, and enhance the contribution of forests to the 2030 Agenda.

Linkages to previous/ongoing ITTO and other projects/activities

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).

1.2.2 Relevance to regional and the participating countries' policies

The Project supports the regional and the participating countries' policies and strategies on forest resource management and the endeavors to advance the legality and sustainable wood supply chains in the Asia Pacific and Togo in West Africa.

Sustainable forest resource management

All participating countries in the Asia Pacific and Togo in W. Africa have adopted policies that support a paradigm shift from forest resource exploitation towards sustainable forest management that balances

the social, economic and environmental aspects of forestry and smallholder agroforestry systems in the tropics. The Project is in line with this trend and provides an opportunity for the recipient countries to build-up value chain of smallholder's SFM capacities. The Project further supports the pursuance of the countries' strategic objectives and policies on the conservation and sustainable development of forest resources, smallholder agroforestry systems with teak and other species plantations which are of particular economic and ecological significance in all participating countries of Asia Pacific and Togo.

The legality of wood supply

The long and complex supply chains for roundwood products in the Asia Pacific raise some challenges with respect to verifying the origin or legality of the raw material supplied except for Indonesia wherein, since 2017 the country follow due diligence to EUTR- FLEGT and VPA agreement for its wood product export and log import to the country enforcing SVLK. The countries in the Greater Mekong Sub-region (GMS), the products are often made with wood from different sources and processing often takes place in an intermediary country before export to the final marketplace. In the case of Togo, ITTO initiative of legality is yet to reap results of SFM.

In view of the regulations put in place by industrialized countries to curb imports of timber of unknown origin onto their markets (e.g. the Lacey Act, USA; the EU-FLEGT Timber Regulation; the Japanese Clean Wood Act, the Australian Illegal Logging Prohibition Act), importers are requested to demonstrate either the legality of their supplies through forest management and chain-of-custody certification or due diligence by actively protecting themselves against the risk of trading in illegal wood like enforcing SVLK (TLAS) in Indonesia.

As a consequence, all participating countries of the GMS, Indonesia and Togo are in various stages of introducing and implementing forest management and chain of custody certification schemes to facilitate and advance the legality of wood supply. Engaging further in the process of developing a timber legality program will serve as a formal commitment to address weaknesses in the current timber flow system, help address improvements in forest law enforcement and governance, create enabling conditions for forest investments and pave the way towards marketing legal timber.

ASEAN (Association of South-East Asian Nations)

The Project contributes to the implementation of the ASEAN Cooperation in Food, Agriculture and Forestry that has been launched by the ASEAN Ministerial Meeting on Agriculture and Forestry (AMAF 2016-2025) in order to develop and implement regional cooperation activities to enhance the international competitiveness of ASEAN's food, agriculture and forestry products. The ASEAN cooperation program specifically developed five strategic thrusts for the forestry sector, all of which are relevant and in line with the objectives of the Project:

1. Sustainable forest management;
2. Strengthening ASEAN cooperation and joint approaches in addressing international and regional forestry issues;
3. Promotion of intra- and extra-ASEAN trade in forest products and private sector participation;
4. Increasing productivity and efficient utilization of forest products;
5. Capacity building and human resources development.

The Project also contributes to the implementation of the mission statement of the **Mekong River Commission (MRC)**¹ to *promote and coordinate sustainable management and development of water and related resources for the countries' mutual benefit and the people's well-being*. The MRC explicitly acknowledges the significance of forest resources to prevent soil erosion, flash floods, and a decline in the provision of ecological goods and services.

Participating country's national policy and programme

The participating country's national policy guidelines and regulations for tree planting and augmenting its natural resources, improving the economic outcomes of smallholders and community plantations, promotion of native species plantations and financial schemes and support available in each country context are briefly outlined below.

Cambodia

Cambodia has a forest cover of 42.34% of country-land, equivalent to 7.69 million ha as of 2022, approximately, 3.41 million ha of forest has been lost between 2002 to 2022, an average of 170,000 ha, annually. Population in Cambodia continues to grow from 12.71 million in 2002 to 16.77 million people in 2022. Population and demand for wood, forest and non-forest timber products are predicted to increase. Global wood demand will increase more than 50% in 2050 while the demand for wood utilization will grow as well in Cambodia in the future because majority of the Cambodian people use wood for construction, firewood, furniture and charcoal production. Wood-based products used in construction are approx.34% from Forest Plantations and 1% from agroforestry systems.

The Forestry Administration of Cambodia has thrived to engage private sectors both legal private entities and individuals to invest in small- and medium-scale private tree plantations. Large-scale forest plantations establishment was initiated through public-private partnerships with the Declaration on Tree Plantation Development (2017), the National Forest Programme 2010-2029 including the most recent declaration in the Agricultural Strategic Development Plan (ASDP) 2019-2023.

The Ministry of Agriculture, Forestry and Fisheries (MAFF) has promoted the establishment of teak plantations since 1993. As of 2002, teak plantations between 6100 - 7000 ha exists in six provinces including Tbong Khmum, Kampong Cham, Kratie, Ratanakiri, Kampong Spure, and Kampot, 80% of which have been planted by a private investor in an Economic Land Concession (Chheang, 2022). Few private teak plantation companies have also been able to get large economic land concessions (ELC) from the government for raising plantations like in 2014, 4848 ha to Grandis Timber Limited; and in 2018, 350 ha to Teak Farm Co. Ltd, an Israeli Company; 300 ha by US Teak Plantation in 2000. They use selected clones of superior plus trees of known genetic origin, tested for its suitability for the local climate conditions and planted and is expected to be harvested at 6 years since they have applied intensive fertigation including the uses of soluble fertilizer, dripping, and adopt systematic silvicultural practices as well as genetically improved clones as has been done in Indonesia (Sinly S. *et al.*, 2022).The rapid increase in teak plantations in Cambodia over the last two decades is primarily on account of investments by private sector and, to a lesser extent, by smallholders encouraged by government campaigns, and distribution of teak seedlings by local forest administrations to local communities for planting as tree plantations and in agroforestry.

¹ Cambodia, Lao PDR, Thailand, and Vietnam are members of the MRC.

Supporting programmes for plantation investment: The Forestry Administration has set a target of at least 10,000 ha of forest plantations to be established annually, inclusive of 9,000 ha by the private sector. There are a number of enabling policies and regulations for the promotion of private forest plantations and tree plantation development in Cambodia. There are many challenges that may undermine the development of teak sector in Cambodia. Teak plantation needs substantial financial investment, especially in the first few years for establishing teak plantation for a 20-25 years rotation. Financial institutions are reluctant to finance with low interest rates in the long run. The currently available incentives, both monetary and non-monetary, for private tree plantation under ELCs, forest-based PPP projects, and privately-owned land, are as follows:

- A reduction of 50% of the total obligatory export fees for the export of products from forest plantation and a 100% exemption of export fees for furniture and processed products produced from forest plantations.
- A qualified Investment proposal is required yearly to obtain a Certificate of Compliance from the Council for the Development of Cambodia to enjoy the investment incentives.
- Currently, more than 300,000 ha of the forest land designated as Forest Extension and Restoration Stations (FERS) have been made available for PPP-based tree plantation investment in 10 provinces in Cambodia.
- The State will not require the payment of royalties or premiums for the harvesting of forest products and by-products from private forest plantations. The owners of private forest plantations registered with the FA are not required to pay any license fees to harvest and use timber and non-timber forest products from their plantations, including royalty, permit fees for transportation and transport quota.
- The benefit-sharing between the RGC and the approved forest-based PPP project shall be 10/90, meaning that 10% of standing trees will be the share of MAFF, and the other 90% of standing trees will be the share of the private company.
- Tree plantation registered and obtained a Private Forest certificate will have the right to maintain, develop, use, sell, and distribute its products. In the event that private forest owners need technical assistance, the FA could provide technical training services for afforestation and plantation management. Transportation of wood products originating from private forests to supply customers or the local market does not require a permit.

Smallholder plantation species: The majority of the villagers' desires to plant the species of trees that would exhibit sufficient market demand to increase profitability, provide greater capacity for resilience characterized by their inherent tolerance to drought and flooding, contribute to the genetic conservation of indigenous tree species, and provide the multiple-purpose products that are associated with the provision of food, medicines, and fuelwood to meet their subsistence requirements. The preference of tree species vary according to individual perspectives since some of them wished to harvest wood products and/or to gain measurable benefits in the short-run, while others preferred to obtain more of those benefits that would be available over the longer run. The highest ranked priority species for the establishment of private forest plantations include (i) *Albizia lebeck*, (L) Benth; (ii) *Xylia xylocarpa* (Roxb.) Taub.; and (iii) *Dipterocarpus alatus*, Roxb. The second ranked group of timber species prioritized include (i) *Sindora cochinchinensis* Baill; (ii) *Afzelia xylocarpa* (Kruz.) Craib.; (iii) *Dalbergia cochichinensis* ; (iv) *Pterocarpus macrocarpus* Kurz; (v) *Tectona grandis* L.f.; (vi) *Hopea odorata* Roxb.; (vii) *Anisoptera costata* Korth.; and (viii) *Dalbergia oliveri*, Pierre. The third ranked group of timber species, which includes (i) *Shorea siamensis* Miq.; (ii) *Azadirachta indica* A.Juss.; (iii) *Diospyros cruenata*, Thwaites.; (iv) *Lagerstroemia speciosa*; and (v) *Swietenia macrophylla* King.

Thailand

Thailand's 20-year National Strategy (2018-2037) targeted at increasing the forest cover up to 40 percent of the land area (25 percent for conservation forests and 15 percent for economic forests, followed by very significant amendments to forest laws and regulations enacted in 2019², aimed at motivating people to plant more trees for economic benefits and enrich the timber trade. In addition, the RFD Strategy and Action Plan for Extension of Integrated Economic Trees (2018-2037) target areas for economic plantations are 4.1 million ha by 2037.

Thailand has the second largest area of natural teak forests at an estimated 8.7 million ha (30% of the total global area of natural forests), all of which are located in protected areas. Northern Thailand is recognized as the home of teak in the country. A complete ban on logging in natural forests was introduced in 1989, which may have contributed to the recovery of natural teak forests that have been intensely logged in northern Thailand since the end of the nineteenth century. In its aftermath of logging ban, the focus of the policy shifted towards an emphasis on forest protection and conservation, setting aside wood production targets. Thailand has a history of more than 100 years of establishing and managing teak plantations, which have expanded today to an estimated 140,000 ha. Currently teak logging work is allowed in the teak plantations by the Forest Industry Organization (FIO), the recognized main agency to implement commercial plantation, and private plantations. The area of planted teak under FIO has around 78,385 ha of various stand ages, of which about 55% are FSC certified. The initial rotation period of teak was 60 years and later shortened to 30 years.

Public and private plantations: Teak is promoted as one of the top priority species for planting in Thailand and other tropical species (i.e., *Dalbergia cochinchinensis*, *Pterocarpus macrocarpus*, *Xylia xylocarpa*, *Azalia xylocarpa*), and exempted from the list of restricted species and recognizes as commercial timber species like eucalypts and rubberwood, however, still require permission from government for transportation.

Most of the teak plantations either by the RFD, private sectors and smallholders still use seedlings from unknown seed sources of poor genetic quality. As the rotation period of teak is 30 years and it requires long-term investments, good quality planting material, proper and timely silvicultural practices are quite essential. Strategies for teak improvement program in line with new technologies of breeding in the 2nd generation to get good breeds with high genetic diversity and wood quality is to be promoted. Genetically improved planting materials are required to obtain good timber characteristics and enhance productivity of teak from plantations for long-term investment. This is one among the major recommendations of the 4th World Teak Conference 2022³ held in Ghana.

In addition to teak in public and private plantations, the native other valuable timber species planted by farmers are: *Pterocarpus macrocarpus*, *Xylia xylocarpa*, *Azalia xylocarpa*, *Dalbergia cochinchinensis*, all are high value timber yielding trees suitable for furniture, house construction and heavy-duty applications.

Financing mechanisms: Farmers are being encouraged to use high-value trees as loan collateral to help mitigate the financial hardships caused by the COVID-19 pandemic. The Secured Transactions Act, in force

² Forest Act (Ver. 8) 2019. Office of the Council of State, 2019; Prime Minister's Office, Bangkok

³ Thulasidas, Trisurat, Ma, Yanuariadi. 2022. *Planting materials, gene pools among top concerns at 4th World Teak Conference. ITTO Tropical Forest Update 31/3-4:18-20.*

since July 2016, gives small and medium-sized enterprises (SMEs) and startups easier access to credit by letting them use inventory, raw materials and intellectual property as collateral. Despite all these policies and acts, a key challenge for smallholders is the lack of access to adequate i.e., forestry specific and affordable financing schemes, which most households will require. Similarly, forestry in comparison to agriculture is subject to comparatively long gestation periods (FAO, 2005), challenging cash flow as well as opportunity costs. From the financing institution's perspective, the various intricacies of smallholder businesses lead to risks. Smallholders will oftentimes lack sufficient savings, making them largely dependent on external finance. Micro-financing is also used for smallholder forestry, but increased concern was raised about its effectivity especially for marginalized customers and group-lending practices.

As a response to the lack of sustainable financing mechanisms for forest smallholders, tree collateral and Tree Banks emerged in Thailand. There are two Tree Bank institutions, namely the Tree Bank BAAC (Bank of Agriculture and Agricultural Cooperatives) and Tree Bank CSO (Civil Society Organization). However, these institutions face challenges to extend loans to the genuine smallholders due to the prevailing land tenure policies etc. The government should provide a platform on which genuine smallholder teak growers are brought in touch with financial institutions willing to extend loan to smallholder teak plantations. Since teak is a preferred species by private planters, both small and large, it is expected that the area of teak plantations in Thailand will continue to increase in the near future.

Vietnam

Vietnam forest area that covers ca. 14.68 million ha (42% of the country) of which natural forest covers 10.28 million ha. Vietnam is the only country in the Greater Mekong Sub-region that reported an increase in forest area from 14.377.682 ha to 14.677.215 ha (which is 74,000 ha/year), mainly due to large-scale national reforestation efforts, the restructuring and renovation of state forest enterprises, the implementation of a number of government programmes for sustainable forest development, and the legal allocation of forestry land to rural communities and households coupled with incentive systems for reforestation under the 1993 Land Law. The new Vietnam Forest Development 2021-2030 Strategy (VFDS)⁴ builds on some successes from the previous (2006-2020) strategy, including an increase in total forest cover, reforestation after logging, and increasing forestry production value by 5-5.5% per year, and planting 340,000 ha/year of production forests. The Strategy builds on the foundation of forest ownership structures set out in the 2013 Land Law and the 2017 Law on Forestry, which allow forest ownership by non-State actor tenure access to communities, households and individuals. A significant portion of the country's forests – almost 1 million hectares by 2015 – is allocated to community management is a promising development of particular importance, especially in ethnic minority areas.

Public and private plantations: Teak being an exotic species to Vietnam, was introduced in the early 20th century mainly in the south and central highlands and in early 1960s, the forestry sector in the North Vietnam started establishing teak plantation. The productivity of teak in Vietnam ranged 7-16 m³/ha/year across different ecological conditions. Even though the economic return of teak plantation is significantly higher (harvesting rotation between 20-30 years) compared to those of short rotation species such as acacia and eucalypts (harvest at 5-7 years), the major challenges for developing teak plantation in Vietnam include lack of improvement in seed resources, lack of capital resource of the growers and its long

⁴ Vietnam Forestry Development Strategy: Implementation results for 2006–2020 and recommendations for the 2021–2030 strategy. CIFOR, 2020.

rotation. The smallholder forest owners currently manage approximately 70% plantation area in Vietnam with average of 2-3 ha per household.

Teak promises to be a valuable and suitable tree species for large dimension timber plantation regime in Vietnam. The genetic improvement program in teak focusing on tree breeding did not yield good results in Vietnam as compared to eucalypts and acacia. In recent years, growers have been encouraged by the government to produce large diameter timber. Improvement of silviculture technology to boost teak growth aimed at shortening the harvesting rotation is very important, especially when it can be used as a demonstration model to encourage tree growers. The price of teak timber is increasing because of shortage of large size timber supply in Vietnam. At present, Vietnam imports teak in small quantities, approx. 40,000 m³/year with price of 550 USD/m³ for round log and 750 USD/m³ for square log, on average. Imported teak wood are mainly for producing high-value furniture and floorboards for export.

Development of teak plantation and improvement of productivity may improve value chain as to provide cheaper materials for promotion of teak timber industry in Vietnam. Teak improvement programs to produce high-performance clones are under development. However, the existing planted teak forests are of poor quality with unknown genetic origin. Further, developing the teak sector will require the use of good-quality planting material of known seed sources. For smallholders who cannot afford to invest in long-rotation crops, teak based agro-forestry is a potential model which can help them earn significant incomes in the years before harvesting.

Microfinance mechanism: Smallholder micro-enterprise and research support for timber industry application benefit the local farmers produce timber species in their own lands and enabling income generation. The Vietnam Bank for Agriculture and Rural Development is by far the largest rural financial institution and provides the fullest range of financial services in rural areas in Viet Nam. The bank's main clients consist of average-income households and rural small- and medium sized enterprises (SMEs). The delivery of microfinance services is still widely perceived among government officials and the public as a social mission to be financed and carried out by the government rather than as a sustainable financial business geared toward the poor. The dominance of the state-owned banks and the popularity of targeted lending at subsidized interest rates have effectively kept levels of non-state microfinance lending (i.e., those engaged in by NGO-type microfinance institutions [MFIs] and private-sector entities) insignificant. Government's direct involvement in the provision of microfinance services and the lack of a supportive legal and regulatory framework have deterred non-state microfinance entities from operating as formal MFIs.

India

In India, teak is distributed naturally in the peninsular region below 24° latitude over a wide range of climatic and geographic conditions. Natural teak forests drastically declined from 8.9 million ha to approximately 6.89 million ha (Kollert and Kleine, 2017) as a result of over-exploitation, conversion to agricultural expansion and other land use changes. Teak forests are found in the States of Andhra Pradesh, Maharashtra, Tamil Nadu, Telangana, Karnataka, Kerala, and southern parts of Odisha, Madhya Pradesh and Chhattisgarh, and to a lesser extent in Gujarat, Rajasthan, Manipur, Tripura and Mizoram. The species is indigenous to India and the South-east Asian region. The tree attains a height of 25 m in drier parts of the central India and 35 to 40 m or even higher in wetter zones of Kerala and Karnataka in southern India. Teak plantations have grown in importance as a means of bridging the gap between teak supplies and wood demand of the industry. . In India, teak ranks second only to *Shorea robusta* (Sal) in terms of growing stock.

The domestic demand for wood is very high and does not meet the 1.39 billion population's housing sector and construction needs. That is why India, despite being one of the world's largest producers of teak, imports a significant amount of this timber from several countries around the world. Imports of teak roundwood have doubled from about half a million m³ in 2009 to more than 1.02 million m³ in 2019 that increased to 1.40 million geometric CBM in 2022. From 2009 to 2019 about 10 million m³ of teak wood in the rough and 900,000 m³ of sawn/chipped teak wood has been imported. The main teakwood exporting countries to India are Ecuador, Brazil, Colombia, Panama, Costa Rica, Ghana, Côte d'Ivoire and Benin.

Genetic improvement program of teak in India started in 1962, almost the same period as that of Thailand. Indian natural teak exhibits considerable genetic diversity in its teak populations. Basic step in tree improvement program is the identification and exploitation of the existing genetic variations. Kerala Forest Research Institute and Indian Council of Forestry Research & Education (ICFRE) organisations had recently made genome sequencing of superior plus trees of teak and developed clones of superior quality, few clones are in field trials; undertakes studies for the establishment of a National Gene Bank of teak and Model Clonal plantations of teak and their involvement is envisaged in genetic conservation programmes of teak resources in the country.

The supply of genetically improved quality planting stock is a pre-requisite for increased productivity of teak plantations. In spite of all these genetic improvement programs, the productivity of teak in India is very poor, average MAI only of 2.85 m³/ha/year on a 60- year rotation. And for the best site classes (Site Class I & II) a record of 7-8 m³/ha/year has been reported on a 40-50 year rotation. This is attributed to poor site conditions, establishment of plantations with low quality seedlings of unknown seed origin, poor silvicultural management of plantations by the forest department in the country. Teak plantations could also play a major role in sequestering carbon and represent a viable option in forest landscape restoration, in particular on degraded lands. The carbon sequestration potential of teak plantations of different stand ages in the state of Kerala at various thinning cycles (every 5 to 50- year cycle) ranges between 2.91 to 145.08 Giga tones (Gg=10⁹ g) shows its great potential for carbon credit markets.

Public and private plantations: Teak is also the major timber species of farmer's agroforestry systems in many households/homesteads of India and provides timber for their housing needs and generate alternate income and economic benefits to farmers. Teak plantations are the monopoly of the Forest Department ever since the first teak plantation was established in India in the year 1846 at Nilambur, Kerala.

Along with teak, farmers promote native species like *Melia dubia*, Neem, Poplars, Jackwood, *Gmelina arborea*, Tamarind etc suitable to the specific locations in India depending on the climatic conditions and it also meet their household timber demand and livelihood economic support.

Loan financing schemes for smallholders: Institutional assistance for loan financing for raising teak plantations across the region is inadequate at best and often absent altogether. Loan financing for these long-term investments pose serious problems and currently there are not many instruments that can satisfactorily link the financial institutions providing loans with the teak growers needing loans. The forestry departments of the countries of the region should provide a platform on which genuine smallholder teak growers are brought in touch with financial institutions mandated and willing to extend loans to smallholder teak plantations. The National Bank for Agriculture and Rural Development (NABARD) in certain States in India like in Maharashtra provide financial support to farmers /smallholders for diversifying agricultural products including teak and provide livelihood security to farmers. However,

microfinancing and credit lending scheme for tree growers face many impediments due to the long gestation periods of rotations and lack of interim income sources.

Indonesia

In Indonesia, teak was naturalized in early 16th century. Perum Perhutani, a state-owned company, manages forest plantation on public land in Java, with a total area of around 3 million hectares, of which around 1.0 million hectares is teak. Total teak plantation in Indonesia is estimated at around 1.5 million hectares of various age classes, mostly found in Java covering over 1 million hectares of public and private land, and in Southeast Sulawesi, particularly in Konawe, Muna, and Buton. The plantation is also an important source of income, especially in the densely populated island of Java. With a declining supply of teak from industrial plantations, the share of the teak supply from smallholders, who have a centuries-old culture of tree growing, is increasing in Java. It is estimated that more than 500,000 people (including family members) depend on teak as a source of income. In Java, about 1.5 million farm families are involved in growing teak on an average holding of about 1 ha. It has been estimated that Javanese smallholders produced more than 2.0 million m³ of teak wood in 2011. Many farmers invest in teak as a form of long-term savings to be used when large cash outlays are required. Farmers have overcome the problem of small-scale production by developing cooperatives to market their products, create wood-processing enterprises to add value to the wood, and provide other services.

Teak-based small-scale production systems enable farmers to diversify farm production, support food security, generate income and reduce financial risk. Teak is one of the popular species planted by smallholder farmers. Most smallholders prefer intercropping different species of trees that increase the diversity of products available for domestic use and sale. Teak seedlings with various brands, such as super teak, superior teak, golden teak, JUN (Nusantara superior teak), JPP (Perhutani's teak plus), and Jumbo teak, are available in response to the growing interest in teak planting. JUN clone has attracted attention from farmers as it is fast grown and can be harvested after 6-8 years with diameter of around 30 cm with MAI 14 m³/ha/year.

Smallholder plantations: The Ministry of Environment and Forestry with support of international agencies like CIFOR and ICRAF promotes demonstration trials to help farmers improve their skills and technical knowledge in management of teak and nursery management of good quality seedling production, pruning and thinning of their small woodlots etc. Overall, the lessons from CIFOR's programme highlight the importance of building trust, providing tailored support and capacity building, using intermediaries, committing to long-term relationships, and fostering collaboration to link SMEs with potential financial institutions and investors. Smallholders who aggregate into cooperatives or other business entities typically enjoy higher prices. Some farmer groups who engaged in group marketing/collaterals supplying FSC certified teak products to furniture manufactures benefits 30% more value premium compared to uncertified timber. Indonesia's national association for furniture and handicraft, ASMINDO, has a strong presence in Jepara district, Java. There are some 1500 small family businesses in the sector, with 300 large enough to have their own export businesses. The adoption of microfinance and credits was still challenging to farmers due to lack of marketing strategy for economic benefits of their timber products and needs more intensive training and extension activities.

The indigenous native species promoted in smallholders are: *Manilkara kauki* timber, softwood species like *Alstonia scholaris*, Mahagoni (*Swetenia macrophylla*), cempaka (*Elmerillia* spp.) and fodder species like *Leucaena leucocephala*. *Manilkara kauki* is a tropical hardwood tree that is highly valued for its strong and durable timber, which is used in construction, furniture-making, and for other purposes. Softwood species like *Alstonia scholaris* are popular among smallholders because they grow quickly and are easy to

maintain. Mahagoni, on the other hand, is a slow-growing hardwood tree that is highly valued for its dark, rich wood, which is used in furniture, cabinet making and for decorative purposes. Cempaka, another hardwood tree species, is also popular among smallholders because of its attractive wood and its ability to grow well in a variety of soil conditions.

Financial schemes and mechanism: There are several financial schemes available for small holder plantations in Indonesia that aim to promote the production of quality teak timber. Among the many micro-lending schemes offered to smallholders, some of them are government sponsored schemes, few of them are:

- a. Kredit Usaha Rakyat (KUR) - This is a government-sponsored credit scheme that provides affordable loans to micro, small, and medium-sized enterprises (MSMEs) in Indonesia, including small holder plantations. The loans can be used for various purposes, including plantation development and maintenance. KUR loans have low interest rates and can be obtained from various financial institutions in Indonesia.
- b. Kredit Usaha Kecil (KUK) - This is another government-sponsored credit scheme that is specifically targeted at small businesses in Indonesia. Small holder plantations may be eligible for KUK loans to finance their operations and improve their productivity. Like KUR, KUK loans have low interest rates and can be obtained from various financial institutions in Indonesia.
- c. Forestry Financing Program (FFP) - The FFP is a joint initiative of the Indonesian government and the World Bank that provides financing and technical assistance to small and medium-sized forestry enterprises, including small holder plantations. The program aims to promote sustainable forest management and improve the competitiveness of the Indonesian forestry sector.
- d. Teak Plantation Revitalization Program (TPRP) - The TPRP is a government-sponsored program that aims to revitalize small holder teak plantations in Indonesia. The program provides financial and technical assistance to small holder plantations to improve their productivity and the quality of their timber.

Due to a change in government policy, it is possible that some of these programs are no longer applicable and requires careful scrutiny for selection of financial schemes.

Regarding timber legality, Indonesia became the first country to issue Forest Law Enforcement Governance and Trade (FLEGT) licenses⁵, in November 2016, having signed a Voluntary Partnership Agreement (VPA) for export of timber products with the European Union that verify legality and control illegal timber called Sistem Verifikasi Legalitas Kayu (SVLK) which benefits Indonesian farmers for increased export value of their furniture products of higher quality standards. The latest DNA technology can be effectively used for verifying the legality of timber. Indonesia banned export of logs and sawnwood sourced from natural forests and allowed export of only plantation logs since 2017. The revised policy on smallholder timber trade regulation issued by Ministry of Trade as part of a series of measures announced to alleviate the impact of COVID-19 on the timber industry has resulted in intended and unintended impacts. The revised regulation has simplified the procedure for obtaining timber transport documentation. This has lowered the transaction costs and provided greater opportunities for teak growers to obtain higher farm-gate prices from brokers. Despite ongoing concerns about the possibility for a weakening of the laws, as of September 2021, Indonesia was fully implementing the SVLK and issuing V-Legal documentation for wood product exports.

⁵ European Forest Institute. 2020. "EU FLEGT Facility. Indonesia - All about the Indonesia-EU Voluntary Partnership Agreement." European Forest Institute. Accessed 10 March, 2023. <http://www.euflegt.efi.int/indonesia>

West Africa

Togo

Togo has a land area of 5.68 million hectares and a population of about 7.5 million in 2021. It lies north of the Gulf of Guinea between Ghana in the west and Benin in the east, atlantic ocean in the south and Burkina Faso in the North. There is a narrow coastal belt and an extensive inland plateau, rising from 60 m to 950 m.a.s.l towards the north. Togo has an estimated public forest estate (PFE) of 368,000 ha, comprising 41,000 hectares of natural production forest, 313,000 ha of protection forest and 14,000 ha of plantations and 18,000 ha of plantations besides private plantations outside PFE. The majority of the forest area is Savanna, which extends from the Guinean into the Sudanian vegetation zone. In addition, as part of the African Forest Landscape Restoration Initiative (AFR100), Togo finalized in July 2018, its commitment to AFR100, with an ambitious goal: to restore 1.4 million hectares of deforested and degraded landscapes by 2030. At the national level, this commitment is part of the National Development Plan (PND 2018 - 2022), the objectives of Togo's National Forest Policy, the National REDD+ Strategy, the National Strategy for the Conservation, Restoration and Sustainable Management of Mangroves, the National Strategy for Information, Education and Communication (IEC) on the environment in Togo.

In Togo, tree plantations under 10 ha are officially called community and private forests, as opposed to private enterprises for the larger ones. Generally, they are agroforestry systems. In Togo, 70% of the private plantations are ≤ 5 ha. In total, they represent between 10,000 and 30,000 ha, according to the National Forest Inventory and REDD+ studies, with teak occupying almost 18,000 ha. The recent ITTO project on FLR in Togo helped the empowerment of smallholder community especially the women in the participatory approach of restoration of the forest landscape (FLR), rehabilitate degraded forest lands and thereby enables sustainable management of landscapes over time and to increase income through new forest-based enterprises and ecotourism. The ITTO project on production of teak clone varieties suitable for development of improved planting material for Togo⁶ further enabled reforestation efforts of the nation by supplying good quality planting material.

Teak and other valuable species plantations: Teak (*Tectona grandis*) is the main commercial tree species planted in over 18,000 hectares. Teak plantations were introduced in 1910 from Burma by the Germans and have become well adapted to the country's climate. The planting rate of teak is 300 hectares per year, mainly on agricultural land using the *Taungya* system. This planting rate is considered inadequate to meet the domestic timber needs of the country. Smallholder farmers in Togo grow teak on their farms to increase household income, even though it competes with the production of staple crops such as maize and cassava. Agricultural land and labour are scarce and food security is important. Yet farmers are willing to plant teak to improve family assets. Under local conditions, 15-year rotations provide the best returns for poor farmers. University of Lomé in association with CIRAD, France selected 25 plus trees to provide improved planting material by using rooted cutting to raise clonal plantations in Togo. In 2015, University of Lomé introduced improved seed from Malaysia which are experimenting on the Zogbépimé forest station in southern Togo.

To promote the export market of teak in Togo, modern industries for wood processing will lead comparative advantage gains from processed teakwood and to increased jobs creation. To achieve this attractive goal requires a public-private partnership through fiscal incentives. Furthermore, the public institutions in charge of trade and forest resources will have to set up a mechanism for timely

⁶ ITTO PD 887/18 Rev.1 (F), 2012.

dissemination of international market prices. This will enable national operators to take advantage of better prices in the process of decision making of selling teak logs.

Apart from teak, other local forest species can be selected within the framework of the project to ensure a sustained production of quality wood in Togo. These include: *Pterocarpus erinaceus*, *Khaya senegalensis*/*Khaya grandifoliola* (African mahogani) for dry zones and *Nauclea diderrichii* (Opepe/Bilinga) for forest areas. All the above species are strong and durable timbers used for a variety of applications including heavy duty construction and furniture making. Countries in W. Africa export large quantities of these timbers to India and elsewhere.

Resource mobilization: The implementation of actions for the conservation of forest resources requires significant financial resources, both internal and external. Internal financial resources include private sector investments in plantations and those of the State, through the Forest Development and Exploitation Office (ODEF) and other services of the Ministry of Environment and Forest Resources (MERF). In addition to the funds mobilized from the State budget and those of private sector actors, there are now several other opportunities for external financing within the framework of bilateral or multilateral cooperation mechanisms. With regard to bilateral cooperation, Togo will be able to rely on its traditional partners, such as France, Germany, China, Japan, the United States of America, etc. Apart from these countries, Togo also relies on the opportunities offered by international organizations, such as ITTO, OAB and IUCN. Multilateral cooperation considers (i) sub-regional institutions (BOAD, ECOWAS, WAEMU, etc.); (ii) continental institutions (African Union, AfDB); (iii) international institutions (European Union, IMF, World Bank, Agencies of the United Nations system). The mobilization of these resources is a major challenge and requires capacity building of the institutions involved in the implementation of forest policy. It is also imperative to improve forest taxation for domestic resource mobilization.

Indigenous species in the participating countries

In the participating countries of Asia Pacific and Togo (W. Africa), besides teak as a major plantation species for wood production, there are other native indigenous species in the smallholder farming systems supplying wood to the domestic wood industry and generate additional income. Most of the native species are timber yielding trees, often few serve as multifunctional species contributing to NTFPs as well. The native species preference in smallholder woodlots in each country vary with local climate and growth conditions. For instance, in Cambodia the commonly preferred native species other than teak in smallholder and agroforestry systems are: *Dipterocarpus costatus*, *Dipterocarpus alatus*, *Hopea odorata*; (Thailand)- *Xylia xylocarpa*, *Pterocarpus macrocarpus*; (India) - *Melia dubia*, Neem, Poplars, Jackwood, *Gmelina arborea*; (Indonesia) - *Manilkara kauki*, softwood species like *Alstonia scholaris*, Mahagoni (*Swetenia macrophylla*), *Elmerillia* spp.; (Vietnam) – Cinnamon tree and *Michelia tonkinensis*, both are fast growing timber trees preferred by farmers; and in Togo (W. Africa)- *Khaya* spp. (African mahogani), *Nauclea* spp. (Opepe/ Bilinga); both are high value durable timbers used for furniture and other building constructions.

1.3 Target area

1.3.1 Geographic location

The participating countries Cambodia, Thailand, Vietnam, India and Indonesia (Figure 1) are located in the Asia Pacific that is home to more than 1.87 billion people as per the population statistics of ASEAN and Censuses data of India 2021, whereas the population of the small country of Togo (Figure 2) stands at 7.5 million. The Asia Pacific is a very dynamic and fast-changing region that has made significant socio-economic progress since 1990 resulting in significant impacts on natural and planted forest resources. The region's area of planted forests doubled between 1990 and 2015 to meet the growing demand for industrial roundwood as per FAO's Asia-Pacific Forest Sector Outlook Study III (APFSOS, 2019).

Many outputs of the Project are on regional level that will also benefit other teak growing countries beyond the Asia Pacific and Togo. The geographic locations of the project areas have been selected after consultations with the collaborating agencies during the first phase of ITTO Teak project in GMS and previous ITTO projects in Indonesia and Togo.

The potential pilot sites in each of the participating countries include the following:

Asia Pacific

Cambodia: The Project areas are in Kampong Speu province Aoral district, where a 350-ha teak plantation by M/s. TEAK FARM, an Israeli private holding company established teak plantations in 2018 with superior quality planting stock obtained from Sabah, Malaysia. Another area is Phnom Scouch and Aoral district in the same Kampong Speu with 4848 ha teak plantation raised by M/s Grandis Timber in 2014. These plantations were established under the economic land concession (ELC).

Thailand: The Maegar Silvicultural Research Station in Payao Province for clonal plantation; Dong Lan SRS, Khon Kaen Province, Kanchanapuri Province under RFD for clonal testing sites ; FIO plantations sites at Lampang province for wood processing. In addition, FIO operates a teak furniture factory in Bang Phó (west of Bangkok) with chain-of-custody certification. The KU department of Forestry in Bangkok for wood products design and innovation.

Vietnam: Teak plantation sites northwest of Son La province and the demonstration plot in Thanh Hoa Station for quality seedling production for distribution to farmer groups to establish community plantations.

India: Organization's under Indian Council of Forestry Research & Education, Dehra Dun

Indonesia: Central and East Java, 'ASMINDO' Jepara wood industry; Yogyakarta and Sulawesi. Pilot plantation of teak can be established in Gunung Kidul District of Yogyakarta. There are smallholder teak plantations in Gunung Kidul, Yogyakarta, as the area has a history of teak cultivation and is known for its forestry activities. Community forestry is common in Yogyakarta and is an ideal location to conduct various studies related to plantation management, harvesting and marketing. Sulawesi, particularly Muna is well-known for its teak smallholder plantation.

West Africa

Togo: Zogbépimé forest station in southern Togo by the University of Lomé:

1.3.2 Social, cultural, economic and environmental aspects

Social, cultural and gender aspects

Rapid population growth is a common characteristic of all ASEAN countries equivalent to 8.58% of the total world population as per UN estimates. With a population of 180 million in 1990, this figure rose to more than 600 million people by 2022.

All Asia Pacific countries are gradually and increasingly involving rural communities in SFM. The shift towards community involvement in forest resource management is supported by improved understanding that achieving SFM is not possible, if governments do not actively engage and work with a wider set of stakeholders. Development of participatory forestry schemes, local forest management initiatives and land allocation have helped to decrease deforestation, forest degradation and in some cases have helped in forest regeneration.

Successful examples of participatory forest management can be seen in most countries in the Asia Pacific. Community involvement in the rehabilitation of degraded land and forest landscape restoration efforts contribute food security and economic benefits in most of the W. African countries including Togo. There are clear indications that commercial teak plantations provide financial benefits to smallholder farmers, timber processors and small and medium-scale enterprises trading teak timber. Teak is also grown by smallholders in mixed farming systems that enable farmers to diversify production, reduce farm risk, contribute to food security, and raise income for smallholder families. Many farmers plant teak for family savings and as a cultural heritage. The management of teak plantings is a shared responsibility between men and women. Women are primarily responsible for the management of agricultural crops in agroforestry production systems and fuelwood collection, while men are responsible for timber tree management and sales. Teak agroforestry systems can provide 40% of household income, 25% of which from agricultural production, 12% from teak, and 3% from other tree products. While demand for teak timber is high and prices attractive, many farmers need financial support to adopt teak cultivation due to their limited capital, limited technical capacity, and limited market knowledge.

Economic aspects

The area of natural teak forests in India, Lao PDR, Myanmar and Thailand combined was estimated at 29 million ha in 2010. Since the 1980s, supplies of teak wood from natural forests have started to dwindle. Nevertheless, teak is one of the few emerging valuable hardwood species that has been grown increasingly in planted forests in Cambodia, Thailand, Vietnam, India, Indonesia and about 70 tropical countries throughout Asia, Africa, Latin America and Oceania. In the FAO 2014 report on State of the World's Forest Genetic Resources, teak takes the top rank in the list of species identified by more than 20 countries as being a national priority species. The reporting countries cite economic value (including value of timber, pulp, food, wood energy, and NWFP) as one of the main reasons for nominating the species as a priority for conservation and management.

Teak is a preferred species in many smallholder and community forests in the GMS and other countries in Asia Pacific, where teak is managed in forest plantations or agroforestry production schemes (e.g., the Taungya System) intercropped with rice or other agricultural crops. Investments in teak plantations

growing under suitable site conditions with genetically superior planting material and good management practices yield attractive and robust financial returns of more than 15% IRR. This can even be enhanced through cost-reducing management interventions such as intercropping with food crops by farming communities which reduce maintenance costs in the initial years.

In all the participating countries rural populations gain employment and income from forestry practices, particularly in remote, undeveloped areas where forestry is the only economically viable land use option. The multiplier effect on employment at secondary (wood processing) and tertiary (service sector) levels was found to be considerable, e.g., in Vietnam and Indonesia, especially when a significant portion of the wealth of such value-added activity remains in the local economy and among the forest-dependent workforce. Under these conditions, planted teak forests directly contribute to socio-economic development, poverty alleviation and social stability.

One increasingly important consideration influencing trade in plantation teak involves environmental certification and legality issues. Governments, buyers, and retailers, mainly in western countries have embraced the principles of certification. The timber markets of North America and Europe have responded legislatively through the Lacey Act (USA) and the European Union Timber Regulations (EUTR). In the future, public and private teak producers and processors will increasingly pursue voluntary certification schemes (forest management and chain-of-custody certification) to meet environmental, social and economic standards of responsible forest management and gain better access to high-price.

In recent years, the global annual trade of teak roundwood was more than 1.02 million cubic meters on average; the imports were valued at almost USD 500 million per year, which is about 3 per cent of the value of the global timber trade (USD 15.5 billion). India, Thailand and China, traditionally play a significant role in the global teak trade. India is the dominant teak market in the world, imports about 94% of the total teak trade volume, rest 6% by Thailand and China. Teak imports to Thailand have declined from the peak of 340,816 m³ in 2002 to 6,194 m³ in 2020, while China and India have increased their import volumes.

Teak price indices have been developed from publicly available long-term time series published in ITTO's Tropical Timber Market Reports since 1998. 'Burmese teak' has set international standards for quality and price, however, from 1st April 2014, Considerable price fall has been reported from all the exporting countries for teak logs and sawn timber after the Covid-19 crisis in 2020-21 due to export obstacles (e.g. high container cost and backlog of shipping). Teak logs and sawn timber from Latin America shows long-term export price increase between 1 -2 % since 2010 while Asia and Africa showed long-term declining trend of -0.6% to -2.7% per year. However, there are positive indications that export prices go back to the level before Corona crisis.

In many countries teakwood forms the primary material for furniture industry, in particular in Indonesia, Thailand and Vietnam following suit. In 2021, Indonesian furniture accounts for almost 1% of the global furniture trade, valued at more than USD 135 billion. In Central Java's Jepara District – the centre of teak furniture production in Indonesia – annual furniture exports are valued at USD 120 million. In order to ensure the entry of Indonesian legal timber into the export market, the Timber Legality and Sustainability Verification System (SVLK) is implemented. However, implementation of the SVLK in the downstream industry is not seen relevant and it creates a high cost for the furniture and craft industry. In a bid to revive business among domestic industry players amid pressures of the COVID-19 pandemic, the Ministry of Industry supports a free domestic component level (TKDN) certification program, especially for small and medium-sized furniture and handicraft industries as well as large sized industries.

Environmental aspects

A recent study suggested that natural-forest management has been ineffective in ensuring the sustainability of teak wood production due to factors such as overharvesting, illegal logging, agricultural expansion, shifting cultivation and grazing (Kollert and Kleine 2017). There have been considerable changes in the forest area of the Asia Pacific in the past 25 years as per the FAO's 2019 Asia Pacific Forest Sector Outlook Study (APFSOS, 2019). Cambodia, and Indonesia are the forest-losing countries in the period 1990-2015 in Southeast Asia, while India, Thailand and Vietnam experienced forest gain due to the large-scale afforestation efforts and establishment of planted forests. Almost all countries in the Asia Pacific region registered increases in planted-forest areas between 1990 and 2015. In Togo, W. Africa forest degradation is rampant and there has been concerted effort by the government and international organisations and NGO's to rehabilitate degraded land with peoples participation through FLR.

Long-term forest exploitation in the South-East Asian countries has directed governments to reconsider their forest management plans, policies and legislations. There have been signs of positive trends in the last decade, including increased efforts towards SFM, forest conservation, and afforestation and reforestation programs. As a result of SFM policies and initiatives, the forest area under protected areas increased by around 70 percent from 1990 to 2015. Likewise, an increase was observed in forest areas designated for conservation of biodiversity and similarly, forest area certified under the Forest Stewardship Council (FSC) certification scheme increased significantly. In all countries, new regulations and policies related to logging, timber exports, protected areas, and green products have resulted in an increasing trend towards managing forests sustainably.

Countries in Asia Pacific and African nations depend largely on climate-sensitive sectors including rainfed and irrigation agriculture, water resources, forestry and fisheries, and are highly vulnerable to the impacts of climate change, in particular from floods, droughts, windstorms, and saltwater intrusion. Rural households, especially women and other vulnerable groups, struggle to cope with the impacts of climate change. Increased weather variability and extreme weather events like flood and sea level rise are expected to reduce agricultural yields, lessen the availability of fresh water, and further degrade biodiversity and ecosystem services. Improved planning, management and appropriate investments in climate change adaptation and mitigation are recognized as effective means to safeguard the livelihoods of rural communities and the economic development of the region. The recipient countries have submitted reports on intended Nationally Determined Contributions (NDCs) under the United Nations Framework Convention on Climate Change (UNFCCC) with the aim to improve forest governance and sustainable forest management and promote international trade in verified legal timber.

The Core Environment Program (CEP) of the GMS, supported by the ADB and other donors, recognizes the significance of forests to mitigate climate change through carbon sequestration and harnesses climate finance and the application of low-carbon technology for development planning and biodiversity conservation. The CEP focuses its activities among others on building the capacity of local stakeholders to monitor forest resources (REDD+ readiness) and testing methods for monitoring greenhouse gas reductions under Nationally Appropriate Mitigation Actions (NAMAs).

1.4 Expected outcomes at the completion of the Project

At the completion of the Project, the following outcomes are expected:

- Production of quality timber in smallholders and community- based teak and other valuable species plantations in the tropics enhanced.
- Genetic improvement of plus trees and progenies and production of superior clones in the participating countries strengthened.
- Supportive viable microfinancing credit schemes available to smallholders for quality timber production to increase economic outcomes and livelihood enhancement.
- Improved wood processing and product quality by adopting better silvicultural practices using superior germplasm material enhanced.
- Timber harvesting loss minimized, improved processing technologies for small diameter logs and innovative design products to increase market value enhanced.
- Demonstrated legal and sustainable teak supply chains which improve market access of teak products.
- Enhanced dialogue, knowledge sharing and information exchange among participating countries on sustainable teak forest management, production and sustainable supply chain management, as well as sharing experiences with wider audiences globally through participation in different events/fora.

2 Project Rationale and Objective

2.1 Rationale

2.1.1 Institutional set-up and organizational issues

Partners for the implementation of the Project will be the ITTO-Secretariat as executing agency and the respective national forestry administrations and affiliated research and commercial institutions that will be responsible for the implementation of the Project on national level. ITTO has been supporting teak related projects with a focus on genetic resources conservation, seed production and sustainable management of natural and planted teak forests in Africa, Asia and Latin America. In 2022, ITTO with the financial support of BMEL- Germany successfully implemented teak project “Enhancing Conservation and Sustainable Management of Teak Forests and Legal and Sustainable Wood Supply Chains in the Greater Mekong Sub-region GMS region” for the five participating countries of the Mekong sub-region. Taking learning lessons of the first phase of this project, ITTO is capable for implementing the 2nd phase of Project that is fully aligned with the political and economic priorities of its member countries in the Asia Pacific region and Togo in W. Africa.

The forestry administrations in each recipient country⁷ have the capacity, manpower and infrastructure in place to implement the Project. They place a high strategic emphasis towards achieving sustainable forest management, implementing reforestation programs with financially viable tree species to combat deforestation and forest degradation, and supporting the legality of timber harvesting and trade.

⁷ Forestry Administration of Cambodia, Thai Royal Forest Department, Vietnam Administration of Forestry, Indian Council Forestry Research and Education, Indonesia’s National Agency of Research and Innovation, Togo’s University of Lomé.

They will be supported through close cooperation with national education, research and training organizations and affiliated commercial institutions⁸ for research and training purposes. These institutions will be part of the Project's institutional arrangements through their participation as contractors in individual work packages and participation of their staff in training activities.

Other potential collaborating partners are IUFRO and TEAKNET. TEAKNET is an international teak information network that is hosted by the Kerala Forest Research Institute in Thrissur, India. TEAKNET has collaborated with FAO, IUFRO and ITTO for many years in maintaining an informative website on teak (www.teaknet.org), producing and disseminating outreach material for the global teak sector, implementing training programs and co-organized four World Teak Conferences in Costa Rica (2011), Thailand (2013), Ecuador (2015) and Ghana (2022) that were attended by over 1,500 representatives of the major teak growing countries in Africa, Asia and Latin America. TEAKNET was the project partner in the 1st phase of ITTO Teak Mekong project, handled the project component of knowledge management and networking support in the GMS region. A bi-monthly online *Teak Mekong Newsletter* started since 2019 carried the project results widely publicized through the websites of Teaknet and Kasetsart University and was the project partner for the Teak Book published by ITTO. Other governmental and non-governmental organizations like CIFOR, RECOFTC, AFoCO, GIZ have been involved in forest resource management in the Asia Pacific countries for many years. They have good knowledge of the local situation in the respective countries, possess skills to support smallholder communities in forest conservation and management, and are reliable partners in planning and implementing capacity building events. GIZ has a wide knowledge and competence in the forestry sector of the participating countries including Togo in the smallholder community- based restoration activities involving women in FLR and their livelihood enhancement. They will be invited to support the implementation of the Project through its participation in field visits, training and capacity building.

The participation of smallholders / farming communities will be ensured by the usage of existing collaborative private partnership management mechanisms, in which local communities share roles and responsibilities for the conservation and sustainable management of smallholder teak and other tropical timber species and profitable agricultural crops. The benefits of increased local participation include incorporation of local and traditional knowledge into forest management, effective and efficient forest monitoring and law enforcement due to their proximity to forests and, raising awareness of the importance of balancing community livelihood commitments with the sustainable management of forest resources.

2.1.2 Stakeholder analysis

The target beneficiaries include forestry administrations and policy makers, rural forest owners/users, smallholder farming communities, teak growers in the public and private sector, teak traders, research, academic and training institutions, and international organizations, many of which have been consulted during the process of the development of the Project. The national forestry administrations have given consent to work under the Project and will be invited to serve in the Project Steering Committee to supervise the implementation of the Project.

⁸ Institute of Forest and Wildlife Research and Development/Teak Farm (Cambodia); Forest Industry Organization/RFD/Kasetsart University (Thailand); Indian Council Forestry Research & Education (India); Vietnamese Academy of Forest Sciences (Vietnam); National Agency of Research and Innovation/ Research Centre for Plant Conservation Botanic Garden and Forestry (Indonesia); University of Lomé (Togo).

A stakeholder analysis as per ITTO specifications is depicted in Table 1 below. A list of key stakeholders in the six participating countries is provided in Annex 5.1

Table 1: Stakeholder analysis

Stakeholder group	Characteristics	Problems, needs, interests	Potentials	Involvement in the Project
Primary stakeholders				
Rural forest owners/users, and local communities/ smallholders	Establish and manage teak trees in plantations and agroforestry, livelihoods depend on forests as a source of income.	Lack of formal titles, insufficient economic alternatives, lack of capacity for forest planning, base for livelihood threatened, interested in resource use and resulting financial benefits to support local livelihoods	Local traditional knowledge, nearness to forest resource, contribution to forest production	Target beneficiaries, benefit from livelihood improvements, contract farmers in out-grower schemes, involvement in forest surveillance, law enforcement and conservation efforts
Govt. sponsored microfinance and credit-lending incentive schemes such as KUR/KUK/ FFP/TPRP/NABARD/BAAC etc	Sponsored microfinance and credit schemes to encourage smallholders livelihood and economic outcomes	Promote sustainable forest management and improve the competitiveness of MSMEs	Capacity to enhance production of quality wood products and increased value and income	Financial schemes available for smallholder plantations, quality of wood products improved, increased income and livelihood support
Teak producers/ growers of other tropical species	Public and private sector. Establish and manage teak trees in plantations and agroforestry/community forestry. Derive income from teak management and caring of other tropical species	Existing land tenure and property rights disincentive to smallholders, need advice in planting and silvicultural management practices. Lack access to good-quality germplasm, affected by government policies, interested in quick income	Nearness to forest resource, contribution to forest production.	Target beneficiaries for capacity building, training measures, information, Benefit from improved stand management
Teak processing companies/industry and teak traders	Private companies that add value to teak round wood. Derive income from wood processing and local/international trade.	Improvement in timber harvesting & processing machineries, underdeveloped domestic market, need market information on supply, demand, prices, benefit from timber legality	Facilitate and improve marketing of teak wood products with value added simple designs, support trade of legal and sustainable products	Target beneficiaries for improved processing, marketing and trading of teak wood products; users of market information
Secondary stakeholder				
Stakeholder group	Characteristics	Problems, needs, interests	Potentials	Involvement in the Project
Forest research, academic and commercial institutions	Have education and research missions, conduct research, teaching and training on sustainable resource use	Interested in resource data and market information on teak, need financial support and facilities to conduct meaningful research on	Competence in research, studies and surveys. Develop quality germplasm, innovative best-silvicultural management practices,	Partner in implementing the Project, training, research and development

		wood products, teaching and training	reduce wastage, efficient timber processing and research results, provide assistance to the national forestry sector backed by research results	
TEAKNET	International network for the dissemination of information on all aspects of production and marketing of teak wood	Lack financial support for networking activities	Well connected with stakeholders, provide data and information on teak to the international forestry sector, co-organizing World Teak Conference 2025	Partner in implementing the Project
NGOs	Active involvement in rural development activities, conservation, restoration of degraded land, FLR and smallholder community forests, wood industry cooperatives	Lack financial support,	Good knowledge of local situation, possess skills to support local communities in forest landscape restoration management and conservation, smallholder capacity building, organizing cooperatives	Partner in implementing the Project
Tertiary stakeholder				
Stakeholder group	Characteristics	Problems, needs, interests	Potentials	Involvement in the Project
ITTO	Intergovernmental organization promoting conservation and sustainable use of tropical timber and timber products.	Facilitates its member countries to achieve sustainable forest management and ensuring that the traded timber and timber products come from legal and sustainable sources, upscaling the Project's outputs/outcomes, including maintenance and develop further the established demonstration plots	Expertise on sustainable tropical forest management, experiences in managing forestry projects in different regions, Ex-Post evaluation and recommendations on how to sustain the activities	Executing agency Member of PSC
Development partners (e.g., GIZ)	Agencies for special technical subjects, active involvement in rural development, conservation, sustainable management and community forestry	Interested in supporting sustainable forestry development and smallholder/community forestry with teak and other tropical species	Knowledge of and competence in the forestry sector, develop innovative best-management practices and provide assistance to the national forestry sector	Provide advises and extended networking

2.1.3 Problem analysis

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. While there are several timber species suitable for smallholder plantations in the tropics, in addition to Teak (*Tectona grandis*), Mahogany (*Swietenia macrophylla*), *Gmelina arborea*, *Melia dubia*, *Manilkara kauki*, *Xylia xylocarpa*, *Khaya* spp., *Nauclea* spp. etc are highly valuable options that have proven to grow fast in varied climatic conditions across different tropical countries of Asia, Africa and S. America. Additionally, incorporating indigenous species suitable to the specific locations and climate that have shown strong growth could also be beneficial and enable farmers to diversify production. Besides the tree species, annual crops like maize, cocoa, cassava, corn etc. are grown for intercropping in smallholders for interim income and livelihood food security of rural communities. Most smallholders prefer mixed farming systems that mix different species of trees to increase the diversity of products available for domestic use and sale.

Smallholder teak plantations with mixed agriculture crop management are expanding in many tropical countries especially in the Asia-Pacific and West Africa. Smallholder teak plantations are small but important to the global teak estate that constitutes 19% in Asia and Africa, 31% in Central America and 34% in S. America. Smallholder teak supply chains are increasing in the global teak trade, as teak harvesting in natural teak forests has been restricted due to overexploitation and expansion of agriculture land. Teak in smallholder farming systems represents a good opportunity to produce quality timber and are a major asset for the forestry economies attracting large investments from the private sector. Tree improvement programs continue to be developed in all six participating countries aiming at improving growth rates and timber quality.

Other tree species widely planted in smallholder systems in the participating countries include; in Togo for instance, *Khaya* spp.(African mahogany) in dry zones and *Nauclea* spp. (Opepe); In India; *Gmelina arborea*, Poplars, *Melia dubia*, Neem; Indonesia: *Manilkara kauki*, *Alstonia scholaris*, *Elmerillia* spp.; Vietnam: Cinnamon, *Michelia tonkinensis*; Cambodia: *Dipterocarpus alatus*, *Hopea odorata*; Thailand: *Dalbergia cochinchinensis*, *Pterocarpus macrocarpus*, *Xylia xylocarpa*, *Afzelia xylocarpa* are useful native species in smallholders and community -based plantations. The above tree species not only offer the timber requirements of the wood industry, and few of them meets the societal needs of NTFPs as well.

In Indonesia, many smallholder farmers have less than one hectare of land holdings and about 40% family income is from teak systems and their teak sales alone contribute more than 12% of household incomes. Smallholder teak income in some countries in the Greater Mekong region have also improved with a variety of policy interventions and capacity building efforts. However, despite ongoing efforts in the Greater Mekong region with the support of BMEL, the sustainable development of smallholder teak plantations in the tropics is still facing various challenges. Despite the fact that better planting materials are now used, the poor quality of seedling materials used in the past remains a serious concern due to the lack of proper silviculture techniques to produce large diameter good quality logs. In addition, lack of market awareness, poor strategy for collective group marketing to reduce transaction costs, etc. to reduce the bargaining power of smallholders. Teak plantations managed by smallholders are often harvested too early before the plantations reach their optimum age with respect to timber quality and value. Promoting longer rotations among smallholders and community-based forest plantations can help improve financial outcomes for the local population while simultaneously enhancing carbon storage in plantation forests, which can also generate additional incomes from carbon credits.

The key problem to be addressed by this Project is the low economic performance of smallholder and community teak and other valuable species plantations due to the low quality of the wood. This key problem is associated with (a) poor quality planting materials (poor germplasm material) used, poor

silviculture techniques and inefficient logging systems and transportation, processing and value addition;
(b) Lack of access to supportive financial schemes for smallholders to plant multi-purpose tree species, which have a potential to supply domestic timber needs despite waiting the duration of a long- rotation before obtaining higher economic returns; and scaling up value chains of wood products and marketing
(c) Limited knowledge sharing and market access, and international cooperation in smallholder plantations in the tropics. The Project provides a regional approach that will contribute local teak growers and smallholders to increase their capacity in managing, processing and marketing their products within the context of legal and sustainable wood supply chains which in turn will improve their family incomes.

2.1.4 Logical framework matrix

The following Table 2 presents the logical framework matrix of the Project.

Table 2: Logical framework matrix

Strategy of intervention	Measurable indicators	Means of verification	Key assumptions
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	<ol style="list-style-type: none"> 1) By the end of the Project, policies to secure high quality planting stock, best practices in silviculture, access to financing to promote longer rotations, value addition and improved legality achieved 2) Promoting financial schemes that invest in high quality teak production with long rotations, access to voluntary carbon markets. 3) Facilitates regional and international cooperation for sustainable smallholder plantations 4) Effective implementation policies contribute to improving the economic outcomes of the smallholder and community plantations in the tropics 	<ol style="list-style-type: none"> 1) Project reports, study reports and minutes of meetings. 2) Financial schemes 3) Teak market reports 4) Policy briefs on viable financial schemes for smallholder community plantations 	<ul style="list-style-type: none"> – National governments support Project development and stimulate stakeholders to participate in the activities. – Forestry administrations will provide and/or recruit qualified staff for implementation, contribute data on smallholder teak and other intercropping species composition, support viable financial schemes to smallholders for sustainable wood production.
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.	<ol style="list-style-type: none"> 1) Improved management of existing and new demonstration plots for teak and other valuable species to support smallholders and local communities. 2) 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 NTFP (5) documentation for timber legality and sustainability 3) By the end of Project, recommended practice on quality standards for teak planting material, efficient timber harvesting and processing, improved product designs for increased product value have been developed, and considered by the national forestry administrations for policy improvement 4) Opportunities for improved teak market access have been elaborated and considered by the national forestry administration 	<ol style="list-style-type: none"> 1) Management plan guidelines on smallholder and other species plantations and training reports. 2) Project report on field - oriented training of the 6 topics including timber legality and sustainability of smallholder production systems 3) Project reports on improved timber processing, product development, value chain 4) Teak market access 5) SFM in the tropics 	<ul style="list-style-type: none"> – National government support to ensure supply of improved planting material to smallholders – Sustainable livelihood and legal harvest and wood product trade for increased income.

	for policy improvement 5)		
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.	<ol style="list-style-type: none"> 1) By the end of the Project, financial support schemes/incentives by sourcing companies ensure that the smallholder's products will be purchased at remunerative prices based on the feasibility studies by TIF, Germany 2) Optimisation of micro-lending schemes to address the credit constraints of smallholders to overcome the problem with collaterals/ group cooperatives that they often face trees as guarantees, group-lending motivate farmers ensure loan repayments, pilot study in 3 regions including Togo and Indonesia. 3) At the end of the Project, formation of effective forest grower associations/group marketing ventures to build good relationships with market to reduce transaction costs and help improve access to micro-credits 4) 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 to farmers, address issues of cash flows, and support access to microfinance schemes. 	<ol style="list-style-type: none"> 1) Project on Consultant reports (TIF, Germany) on financial incentives, micro-lending opportunities for smallholders. 2) Project reports on teak-based community enterprises, MSME for furniture productions 3) Regional workshop report 4) Policy interventions on carbon credits for smallholder teak and valuable species plantations 	<ul style="list-style-type: none"> – National government support to smallholder farmers in community enterprises and establishment of pilot study areas – adequate opportunities and Interventions in group marketing of wood products, improved bargaining power to secure better value of their products, reduce transaction costs.
Strategy of intervention	Measurable indicators	Means of verification	Key assumptions
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	<ol style="list-style-type: none"> 1) By the end of the Project at least 7 technical reports and/or studies have been uploaded on the Internet and are publicly available. 2) One regional workshop in 2024 at the middle of the Project have been implemented to support information management among the participating countries. 3) Problem and challenges for sustainable smallholder teak stands and selected tropical species plantations promoted in the Asia Pacific and W. Africa (Togo) has been shared in the IUFRO World Congress 2024 (Sweden) and 5th World Teak Conference 2025 in India and well understood by the participants 	<ol style="list-style-type: none"> 1) Teak-website and online bi-monthly newsletter 2) List of participants of the regional workshop 3) List of participants of the IUFRO World Congress 2024 and 5th World Teak Conference 2025 	<ul style="list-style-type: none"> – Qualified staff from the participating countries participate in joint research activities. – Outreach and promotional materials are actively used by teak stakeholders.

2.2 Objective

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 promote the production of quality timber in smallholders and communities-based teak and other valuable species plantations to improve livelihoods and social and environmental outcomes through using quality planting materials and better silviculture practices, efficient timber harvesting, 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. The Project also supports the participating countries' policies and strategies on sustainable forest management and sustainable wood supply from legal sources in line with their Nationally Determined Contributions (NDCs).

3 Description of Interventions

3.1 Outputs and activities

3.1.1 Outputs

The following outputs will contribute to meet the objective of the Project:

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.

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.

3.1.2 Activities

The following activities for each output will contribute to meet the objective of the Project:

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).

1.1.1 Assess the conservation of genetic resources of teak and other selected other valuable species for ensuring quality planting materials in conjunction with existing seed

production areas, seed orchards, and provenance/progeny trials/clonal plantations supported by Phase 1 of the BMEL-ITTO teak project (PP-A/54-331)

- 1.1.2 Design implementation plans to sustainably conserve genetic variation of teak and other valuable species through better management of existing and new seed production areas, seed orchard, provenance/progeny trials/clonal plantations to produce quality planting materials
- 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)
 - 1.2.1 Identify and build demonstration sites for teak and other valuable indigenous native species to be promoted by smallholder agroforestry systems for the sustainable supply of quality production of seedlings; silvicultural management such as thinning and pruning to improve quality timber production and livelihood support.
 - 1.2.2 Prepare and conduct training courses on (1) seed production techniques; (2) silvicultural practices; (3) harvesting, transport, processing and product designs and innovation; (4) value chain analysis; and (5) timber legality and sustainability
 - 1.2.3 Finalize the reports on the establishment and operation of demonstration sites and the organization of training courses, as well as disseminate them to interested parties, including the national forestry administrations for policy development
 - 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)
 - 1.3.1 Develop a technical guide to facilitate timber legal compliance for smallholder/community plantations and management, including timber harvesting practices
 - 1.3.2 Organize and conduct a regional capacity building workshop focusing on timber legality and group certification for smallholder/community plantations (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)
 - 2.1.1 Prepare a research proposal and identify potential sourcing companies that are involved in or may be interested in direct contracts/out-grower schemes with smallholders in teak and other valuable species plantations in the participating countries.

- 2.1.2 Report on the implementation of sub-activity 2.1.1 with an analysis of out-grower schemes in the participating countries, including information such as purchase price, as well as the terms of payment, delivery schedules, quality standards, and other relevant terms and conditions.
- 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)
- 2.2.1 Analyze the micro-lending schemes currently being implemented in the participating countries to understand their effectiveness in addressing the credit constraints faced by smallholders plantations with the identification of best practices.
 - 2.2.2 Evaluate options that smallholders can use to secure loans from financial institutions; analyze the use of trees as guarantees and group-lending to multiple forest growers who can guarantee loan repayments from each other, as well as the potential benefits and challenges of group-lending.
- 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)
- 2.3.1 Analyze the existing forest grower associations in the participating countries in terms of their effectiveness in reducing transaction costs and improving access to micro-credits for smallholders.
 - 2.3.2 Identify best practices and lessons learned that can be applied to the formation of effective forest grower associations as well as the identification of training and support programs that can reduce the transaction costs and increased access to incentive programs and financial schemes in long-term investments available to farmers for quality production of logs in long rotations to accrue economic benefits.
- 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)
- 2.4.1 Analyze the opportunities of voluntary carbon markets for smallholders and community-based plantations; assess the potential for smallholders and community-based plantations to access these markets, and the challenges in successful participation
 - 2.4.2 Assess the potential benefits of longer rotation periods for smallholder and community-based plantations in increasing revenues from the voluntary carbon markets and the feasibility of managing plantations over longer periods in carbon sequestration

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).
 - 3.1.1 Prepare and publish policy briefs and online learning material on 1) seed production techniques; (2) silvicultural practices; (3) harvesting, transport, processing and product designs and innovation; (4) value chain analysis; and (5) timber legality and sustainability based on the outcome of Activity 1.2 .
 - 3.1.2 Prepare and publish policy briefs to highlight the challenges and opportunities of sustainable financing schemes for quality timber production by smallholders and community-based teak and other species plantations, as well as to analyze the opportunities of the voluntary carbon market to increase economic outcomes from a longer-rotation system.
 - 3.1.3 Widely publicize the results and lessons learned from the implementation of Activities 1.2 and 2.1-2.4 on the websites of ITTO, TEAKNET and Kasetsart University for effective management of tree plantations, wood production and legal supply chains to increase regional and international collaboration
- 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).
 - 3.2.1 Knowledge sharing and outreach efforts for the three tropical regions strengthened through the organization of four Webinars in a year (total 12 nos) with the involvement of Teaknet on selected topics by invited experts on topics outputs 1 to 3.
- 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).
 - 3.3.1 Prepare a concept note for the organization of a regional workshops in Thailand in the first year for timber legality and another regional workshop in Central Java in the second year with the identification of key stakeholders, including investors, financial institutions, smallholder teak plantation owners, and relevant government agencies in the participating countries.
 - 3.3.2 Implement the regional workshops focused on timber legality and financing schemes and quality timber production to facilitate the exchange of information and best practices to support smallholder teak plantations, including public-private partnerships and digital technologies

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).

3.4.1 Regularly publish project results and findings of the project on the key partners websites and through publication of online bi-monthly newsletter that is produced 6 times a year (total 18) by the TEAKNET Secretariat for the benefit of the global teak sector and is accessible on the TEAKNET website (www.teaknet.org).

3.4.2 Organize a teak session at the IUFRO World Congress 2024 with the participation of the Regional Project Leader, and key resource persons to deliver the outcome of the project in particular the conservation of genetic resources for teak and other valuable species, and legal and sustainable supply chains

3.4.3 Share the outcome of the project at the 5th World Teak Conference 2025 (Kerala, India) with the launch of a technical report compiling key themes to contribute to the development of the global teak sector for a sustainable future

3.2 Implementation approaches and methods

The Project builds 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 strategy also builds on ITTO’s comparative advantage in providing support to forestry issues that require strong interface with the public and private sectors and proven record of accomplishment in policy work and capacity building in the regional and national forest policy frameworks.

The Project makes full use of the existing experience and knowledge on teak resources through South-South cooperation in the three tropical regions. The implementation of the field activities will be focused on selected countries in the Asia-Pacific and West Africa. The collaborating agencies include Cambodia Forestry Administration; Thailand Royal Forestry Department, Forest Industry Organization and Kasetsart University; Vietnam Administration of Forestry/Vietnamese Academy of Forest Sciences; Indian Council of Forestry Research & Education, Dehra Dun; and Indonesia’s Research Centre for Plant Conservation Botanic Garden and Forestry /National Research and Innovation Agency (BRIN). In West Africa, University of Lomé (Togo) will be a key collaborating agency.

The capacity building program 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 will work collaboratively with all primary and secondary stakeholders of the recipient countries.

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. Cooperation with smallholder farmers will increase livelihood opportunities for local residents and reduce pressures on the unsustainable use of forests. The Project also will assist practical application of the certification of sustainability of forest management, and the verification of timber legality. A participatory monitoring and evaluation system will be established by the Executing Agency to monitor progress in the implementation of the Project.

The strategy also aims at harnessing synergies with other organizations working in the same field such as IUFRO and TEAKNET. A sub-contract with the Thünen Institute of Forestry will be arranged to carry out feasibility studies for financing schemes for smallholder teak and other valuable species plantations (Activities 2.1-2.4). As CIFOR recently launched a platform to connect agriculture and forestry-based Micro, Small and Medium Enterprises (MSMEs) with investors and financial institutions along with a series of training events in Indonesia in November 2022, their cooperation will be secured. Knowledge sharing and outreach efforts for the three tropical regions will be strengthened through the organization of 12 webinars (4 nos. every year) (Output 3 of the Project) covering three regions and one Regional Workshop, as well as the participation in the IUFRO World Congress 2024 (Sweden) and at the 5th World Teak Conference in 2025 (India).

The Project is in principle gender neutral as participation to activities is equally open to women and men. Records will be kept on the gender aspect to monitor participation in Project events and training activities. Specific action will be taken to promote the participation of women, as they represent a significant share of the workforce in research, tree planting, seeds collection and nursery operations.

3.3 Work plan

The work plan for year 1 to 3 is compiled in Table 3.

Table 3: Work plan

Outputs and Activities	Responsible party	Year 1				Year 2				Year 3			
		Quarter				Quarter				Quarter			
		1	2	3	4	1	2	3	4	1	2	3	4
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, timber processing and legality													
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)	Reg. Act. Manager Nat. coordinators Consultant # 1 &2												
1.2 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; (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 (all participating countries)	Reg. Act. Manager Nat. coordinators Consultants # 1,2,3,4 &6 Forestry Admin												
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)	Reg. Act. Manager Consultant #3.												
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.													
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)	Reg. Act. Manager Nat. coordinators TIF- Germany Consultant #7												
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)	Reg. Act. Manager Nat. coordinators TIF- Germany Consultant #7												

Outputs and Activities	Responsible party	Year 1				Year 2				Year 3			
		Quarter				Quarter				Quarter			
		1	2	3	4	1	2	3	4	1	2	3	4
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)	Reg. Act. Manager Nat. coordinator TIF- Germany Consultant #7												
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)	Forestry admin., Reg. Act. Manager Nat. coordinators TIF-Germany Consultant #7												
Sub-contract with the Thünen Institute of Forestry to carry out feasibility studies for financing schemes for smallholder teak plantations	TIF-Germany/ITTO												
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													
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).	Reg. Act. Manager Nat. coordinators Consultant #5												
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).	Reg. Act. Manager Nat. Coordinators ITTO/TEAKNET												
3.3 Plan and organize a regional workshops in Thailand for timber legality and another regional workshop in Java, Indonesia with investors and financial institutions to discuss financing schemes promoting quality timber production in smallholder teak plantations (regional scope).	Reg. Act. Manager Nat. Coordinators ITTO												
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).	Reg. Act. Manager ITTO/TEAKNET												
Reporting and monitoring													
Submission of inception report (before start of Project)	Reg. Act. Manager Nat. Coordinators ITTO												

Outputs and Activities	Responsible party	Year 1				Year 2				Year 3			
		Quarter				Quarter				Quarter			
		1	2	3	4	1	2	3	4	1	2	3	4
Submission of Yearly Plan of Operation for the first year (before start of Project)	Reg. Act. Manager Nat. Coordinators ITTO												
Submission of progress report (each 6 months) with training, workshop, technical report	Reg. Act. Manager Nat. Coordinators ITTO												
Submission of Yearly Plan of Operation for the second and third year (before start of Project for the second year and third year)	Reg. Act. Manager Nat. Coordinators ITTO												
Submission of financial report (each 6 month) and audited financial report (every twelve months)	Reg. Act. Manager Nat. Coordinators ITTO												
Submission of Project Completion Report	Reg. Act. Manager Nat. Coordinators ITTO												
Technical and Steering Committee Meetings (back-to back) and monitoring	Reg. Act. Manager Nat. Coordinators ITTO												

3.4 Budget

The total budget of the Project amounts to USD 1,413,449 that is equivalent to EUR 1,293,301 (exchange rate as of 20 June 2023 EUR/USD 1: 1.0929), of which 100% is a non-refundable ODA grant aid from the BMEL, Germany. The allocation of the total budget to project years has been compiled in Table 4:

Table 4: Allocation of total budget to project years

	2023 (Sep-Dec)	2024	2025	2026 (Jan-Aug)	Total
USD	142,293	521,778	518,903	230,475	1,413,449
%	10	37	37	16	100

The ODA grant aid covers the following budget lines:

Project personnel and consultants:

- Regional Project Manager (Thailand), for up to 36 months
- Project Secretary (Thailand), for up to 36 months
- Finance staff (Thailand), for up to 36 months
- Consultant 1 Quality Planting Material, for up to 3 months
- Consultant 2 Field Training Silviculture, for up to 3 months
- Consultant 3 Legality, for up to 2 months
- Consultant 4 Wood processing, design products and innovation, for up to 3 months
- Consultant 5 Information Management, for up to 12 months
- Consultant 6 Teak value-chains, for up to 3 months)
- Consultant 7 Teak strategy development, for up to 6 months

- Sub-contract with the Thünen Institute of Forestry to carry out feasibility studies for financing schemes for smallholder teak plantations (Activities 2.1 – 2.4), for up to 18 months

Management and coordination items:

- Project support costs (ITTO)
- Monitoring and review (ITTO)
- Final report editing (ITTO)

Reimbursable items:

- 12 Webinars
- 3 PSC meetings (venue, travel, accommodation)
- 2 Regional Teak Workshops (venue, travel, accommodation)
- IUFRO World Congress 2024 and World Teak Conference 2025 (reg fee, travel, accommodation)
- Travel costs of Regional Project Manager and staff
- International travel and national travel of consultants
- Costs of training events (venue, stationary, catering, lodging)
- Literature, publications, webpage, outreach activities and materials
- Demonstration plots
- Translation of outreach materials into Spanish and French
- Financial auditing

The tentative allocation of the ODA grant aid budget from BMEL by calendar year (36 project months in total) and by executing and collaborating agencies has been compiled in Table 5. In addition, the estimated costs by outputs and activities are shown in Table 6.

Table 5: Tentative allocation of the total budget in USD by calendar year and by executing and collaborating agencies

(PM=person-month)

A	Budget Line/Item	Data input			By Year				Total	Executing and Collaborating Agencies						
		# of units	Unit	USD/ Unit	2023 (Sep-Dec)	2024	2025	2026 (Jan-Aug)		ITTO	Collaborating Agencies					
											Thailand	Vietnam	Cambodia	India	Indonesia	Togo
A01	Regional Project Manager (RPM) THA	36	PM	3,000	12,000	36,000	36,000	24,000	108,000		108,000					
A02	Project Secretary	36	PM	750	3,000	9,000	9,000	6,000	27,000		27,000					
A03	Finance staff	36	PM	600	2,400	7,200	7,200	4,800	21,600		21,600					
A04	Cons # 1 Quality Planting Material	4	PM	6,000	3,000	12,000	6,000	3,000	24,000			6,000	6,000		6,000	6,000
A05	Cons # 2 Field Training, Silviculture	3	PM	5,000	5,000	5,000	5,000		15,000			5,000	5,000			5,000
A06	Cons # 3 Legality	4	PM	6,000	6,000	12,000	6,000		24,000	24,000						
A07	Cons # 4 Efficient teak wood transportation and processing	2	PM	6,000		6,000	6,000		12,000		6,000			6,000		
A08	Cons # 5 Information Management	1	Package	25,500	2,833	8,500	8,500	5,667	25,500	25,500						
A09	Cons # 6 Teak value chains	3	PM	6,000		12,000	6,000		18,000		6,000			6,000	6,000	
A10	Cons # 7 Teak strategy development	6	PM	6,000		18,000	12,000	6,000	36,000	36,000						
A11	Sub-contract Thünen Institute of Forestry, Germany* (*No ITTO programme support on this amount)	1	Package	353,954		132,733	132,733	88,488	353,954	353,954						
A	Sub-Total Personnel & Consultants				34,233	258,433	234,433	137,955	665,054	439,454	168,600	11,000	11,000	12,000	12,000	11,000
B	Lump sum / Items															
B01	Operating costs for project offices (Electr., Commun., Consumables etc)	36	Month	500	2,000	6,000	6,000	4,000	18,000		3,000	3,000	3,000	3,000	3,000	3,000
B02	Technical reports, and completion report editing	18	Package	1,000	2,000	6,000	6,000	4,000	18,000		18,000					
B	Sub-total Lump sum items				4,000	12,000	12,000	8,000	36,000		21,000	3,000	3,000	3,000	3,000	3,000

C	Budget line/ Item	Data input			By Year				Total	Executing and Collaborating Agencies						
		# of units	Unit	USD/ Unit	2023 (Sep-Dec)	2024	2025	2026 (Jan-Aug)		ITTO	Collaborating Agencies					
											Thailand	Vietnam	Cambodia	India	Indonesia	Togo
C10	Conferences, Meetings, Workshops															
C11	PSC Meetings (3) (Venue, trav, accom,)	3	meeting	12,000		12,000	12,000	12,000	36,000		36,000					
C12	Regional Workshop (2) (Venue, trav, accom,)	2	meeting	45,500	45,500		45,500		91,000		45,500			45,500		
C13	IUFRO World Congress 2024 (Regn, trav, accom,)	1	meeting	20,000		20,000			20,000	5,000	3,000	3,000		3,000	3,000	
C14	World Teak Conference 2025 (Regn, trav, accom,)	1	meeting	40,000			40,000		40,000	8,000	6,000	4,000	4,000	10,000	4,000	
C20	National workshops and regional webinars															
C21	National and regional webinars	12	Package	2,000	2,000	8,000	8,000	6,000	24,000		5,000	3,000	3,000	5,000	5,000	
C30	Consult.travel (flights, transp., lodging, food)															
C31	International travel for consultants#3, #6 and #7	6	trips	3,000	3,000	6,000	6,000	3,000	18,000		18,000					
C40	Other items															
C41	Publication	4	Package	2,500	2,000	2,000	2,000	4,000	10,000		10,000					
C42	Demonstrations plots, nurseries	12	Package	5,000	10,000	30,000	10,000	10,000	60,000		10,000	10,000	10,000	10,000	10,000	
C43	Training costs (4 training events per country) (venue, stationary, catering, lodging)	24	events	6,000	18,000	66,000	42,000	18,000	144,000		28,000	20,000	20,000	28,000	20,000	
C44	Financial auditing	3	package	5,000		5,000	5,000	5,000	15,000	15,000						
C45	Literature, publications, webpage	7	package	1,000	2,000	2,000	2,000	1,000	7,000		7,000					
C46	Survey and data collection for teak plantations	6	package	13,200	0	39,600	39,600		79,200	79,200						
C	Sub -total reimbursable items				82,500	190,600	212,100	59,000	544,200	107,200	168,500	40,000	37,000	56,000	95,000	40,000

Table 5 continued...

D	Budget Line/Item	Data input			By Year				Total	Executing and Collaborating Agencies						
										ITTO	Collaborating Agencies					
											Thailand	Vietnam	Cambodia	India	Indonesia	Togo
		# of units	Unit	USD/ Unit	2023 (Sep-Dec)	2024	2025	2026 (Jan-Aug)								
D01	Monitoring and review	3	years	10,000	3,000	10,000	10,000	7,000	30,000	30,000						
	Sub-total Direct project costs (A+B+C+D)				123,733	471,033	468,533	211,955	1,275,254	576,654	358,100	54,000	51,000	71,000	110,500	54,000
E	ITTO Project administration															
E01	ITTO Program support (@ITTO standard rate)** (** No PS charged on TI Subcontract)	1	15%	138,195	18,560	50,745	50,370	18,520	138,195	138,195						
E	Sub total ITTO Proejct administration				21,560	60,745	60,370	25,520	168,195	168,195						
	Grand Total (A+B+C+D+E)				142,293	521,778	518,903	230,475	1,413,449	714,849	358,100	54,000	51,000	71,000	110,500	54,000

Table 6: Estimated costs by project output and activities

No.	Project output/activity	Inputs	Project partners	BMEL fund	
				USD	%
1	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 silviculture and timber processing practices			442,100	31
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)	RPM + consultant #1 + 3 plots +2 Consult #3 + 3 trainings + staff + travel	For. admin., nat. coord.		
1.2	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; (3) minimizing harvesting loss, efficient transport, processing, product designs and innovation; (4) teak value-chains, other valuable species and NTFP (5) timber legality and sustainability (all participating countries)	RPM + Nat. coord + consultant #1,2, 3, 4, 5, 6, 7 and 4 staff + travel	For. admin., nat. coord.		
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)	RPM + Nat. coord + consultant # 6, 7 and staff + travel	For. admin., nat. coord.		
2	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.			433,154	31
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)	RPM + National Coordinator TIF, Germany, grower associations + cooperatives + staff + travel	For. admin., nat. coord.		

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)	RPM + Nat. Coordinator TIF, Germany	For. admin., nat. coord.		
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)	RPM + Nat. Coordi + TIF, Germany	For. admin., nat. coord.		
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)	RPM + Nat. Coordinator Consultant #7 TIF, Germany	For. admin., nat. coord.		
	Sub-contract with the Thünen Institute of Forestry to carry out feasibility studies for financing schemes for smallholder teak plantations (Output 2.1-2.4)	EA +TIF, Germany	For. Admin., nat.coord.		
3	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			266,000	19
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).	RPM + consultant 5 +3+6+7, staff + travel	For. admin., nat. coord.	30,000	
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)	RPM + supporting staff + Honorarium for speakers	For. admin., nat. coord.	85,000	

3.3	Plan and organize a Regional Workshop in Thailand for timber legality and another Workshop in Java, Indonesia with investors and financial institutions to discuss financing schemes promoting quality timber production in smallholder teak plantations (regional scope)	RPM + National Coordinators, Consultant #7, and staff + additional 1 supporting staff + travel	For. admin., nat. coord.	91,000	
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 5 th World Teak Conference 2025 (Kerala, India) for improved global teak collaboration (global scope).	RPM + National Coordinators, Consultant #7, and sponsored speakers travel	For. admin., nat. coord.	60,000	
4	ITTO management, monitoring and review			168,195	12
4.1	Project program costs (ITTO)	Executing agency	EA	138,195	
4.2	Monitoring and review (ITTO)	Executing agency	EA	30,000	
5	Miscellaneous			104,000	7
5.1	Publication	RPM	NPC	10,000	
5.2	Technical and Final report editing	RPM + EA	NPC	18,000	
5.3	Financial auditing	EA	EA	15,000	
5.4	3 PSC-meetings (venue, trav., accom.)	RPM	NPC	36,000	
5.5	Office operating costs + equip + vehicles (rent)	RPM	NPC	18,000	
5.6	Literature, publications, webpage, outreach activities & materials	RPM	NPC	7,000	
	Grand Total			1,413,449	100

3.5 Assumptions, risks and sustainability

3.5.1 Assumptions and risks

The success of the Project depends on the continued shared commitment and political will of the recipient countries and its stakeholders to support regional cooperation, improve the conservation and sustainable management of smallholder teak and other species plantations in the tropics to promote the legality of timber trade. That commitment and political will is reflected in several regional and national mechanisms, including the ASEAN cooperation program on agriculture and forestry, the mission statement of the Mekong River Commission, and the national forest policy frameworks of the recipient countries. Moreover, the participating countries are committed to and have ratified a number of international agreements and conventions related to environmental sustainability and sustainable forest management including the Post-2015 Development Agenda, the Aichi Biodiversity Targets, and the United Nations Millennium Development Goals. Those mechanisms are conducive to the conservation and sustainable management of teak forest resources and considerably lessen the risk of weakening the political commitment and will.

In addition, the achievement of the Project's objective, outputs and activities depend on the following assumptions and risk mitigation measures related to them (Table 7):

Table 7: Assumptions and risk mitigation measures

Assumption	Risk	Rating of risk	Mitigation measures
National and local governments in target countries stimulate stakeholders to participate actively in the Project	National and local governments lack access to stakeholders	low	Stakeholder groups will be involved early in activities reinforcing capacity building and financial benefits from sustainable forest management.
Forestry administrations will provide and/or recruit qualified staff for implementation, contribute data, information and maps on smallholder /community teak resources, support the establishment of pilot study areas, including the consultation of local communities, and facilitate the implementation of multi-stakeholder workshop.	a) Limited capacity or reluctance/slowness by forestry institutions to actively participate in implementation measures b) Selected pilot areas do not have the capacity to sustain the foreseen smallholder/community forestry activities c) Reluctance by communities and stakeholders to endorse and participate in the activities	moderate	Government ownership and buy-in is a key implementation principle that will be propagated by the executing agency to ensure that the national institutions allocate sufficient staff and resources. Rapid forestry appraisals facilitate a careful, participatory selection of the pilot areas to ensure its availability and suitability. Strong community outreach and consideration of socio-cultural aspects will ensure that the rights of stakeholders are preserved and duties defined, specifically through demonstrative events that will contribute to mitigating the risk and overcoming skepticism.
Stakeholders are open to adopting new technologies and send staff for training and capacity building	Stakeholders are reluctant to participate in training program	low	Training/capacity building can be tailored to the needs and training incentives ensure a critical mass of trainees
Vested interests do not prohibit legal harvest and trade from controlled sources	Illegal forestry activities are common and cannot be overcome	moderate	Careful, participatory selection of the pilot areas to ensure their availability and suitability.
Qualified staff from the recipient countries participate in joint research activities	Researchers are reluctant to participate in joint research activities	Low	Incentives will be created (e.g. travel, publications) that will promote researchers' participation
Outreach and promotional materials are actively used by teak stakeholders.	Lack of interest by stakeholders	low	Outreach and promotional materials will be designed and developed according to the needs of the stakeholders

3.5.2 Sustainability

The sustainability of the Project will be achieved through the following measures:

Social sustainability: The Project's approach is based on the active participation of rural populations through the promotion of local know-how and technical workshops. The dialogue on the collaborative management of natural resources will ensure exchanges between the populations, thus increasing the social sustainability of the actions.

Environmental sustainability: The Project aims at increasing the environmental sustainability of forest resources and the environmental capital of people's livelihoods by strengthening the resilience of the teak smallholder agri-ecosystems to threats and crises by droughts and the harmful effects of climate change.

Technical sustainability: Technical publications on Project outputs will capture the methodology of the activities and serve as a reference for upscaling and future interventions in other countries. The training material of the capacity building events can be integrated into the curricula of academic

institutions and forestry schools. The targeted selection of pilot areas will enable the concerned stakeholders to further pursue the lessons learned after the completion of the Project. The training of trainers and service providers, who will be engaged in capacity building events, will be able to continue to train and provide services in other contexts and other countries.

Political and institutional sustainability: The Project's sustainability will rely on the integration of the outputs into the existing national forest management strategies, policies, and programmes. The capacity building component will enable local partners' institutions to sustain their technical and managerial skill in sustainable management of smallholder teak and other species plantation resources within on-going forest management activities at local and national level.

The Project fits into the national forest policies and programmes of the recipient countries and contributes to achieving access to adequate information, capacity building and sustainable forest resources management. The Project contributes to the implementation of the *Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources* (FAO 2014) and will particularly promote quality timber production in smallholders and community-based teak and other valuable species plantations in the tropics, including pilot activities on community-based forest management.

Financial and economic sustainability: Financial sustainability will be promoted through promoting micro-finance and marketing support for sustainably produced community teak products, particularly targeted for smallholders and rural communities. The Project will introduce best-management practices, which will contribute to the economic development of the target beneficiaries. It will support long-term income-generating activities, which will strengthen the economic viability of the local population.

4 Implementation Arrangements

4.1 Organization structure and stakeholder involvement mechanisms

4.1.1 Executing agency and partners

The ITTO-Secretariat will act as Executing Agency with overall responsibility for this Project as part of ITTO Biennial Work Program (BWP) 2023-2025 and beyond. ITTO has received an endorsement for the implementation of the Project by the national forestry agencies of all participating countries. The ITTO-Secretariat will provide guidance and policy support in cooperation with the Project Steering Committee, recruit the Regional Project Manager (RPM), and conduct monitoring and review of the activities. ITTO will provide advisory services and technical expertise to the Project Management Team (PMT) in managing the Project and the consultants in the implementation of activities on the ground. ITTO will also dedicate its professional staff to work together with the RPM in preparing and writing the Project's reports. ITTO will also work in coordination with TEAKNET, IUFRO, and other international organizations as necessary and the host country in organizing the teak events at IUFRO World Congress 2024 and 5th World Teak Conference 2025.

The national partner agencies for the implementation of the Project are the forestry administrations of each recipient country supported by national research and affiliated commercial institutions. Each country will appoint a National Project Coordinator (NPC) in cooperation with the Executing Agency (7 persons).

Partners in implementing the Project, in particular for the planning and implementation of research and development projects, capacity building events and activities will be the organisations/institutions

selected by the six participating countries and Activity 3 information management will be TEAKNET, which is an international research and development network; non-governmental organizations such as RECOFTC and possibly development partners such as GIZ-Bangkok and Togo.

4.1.2 Project management team

The Project management team consists of the Regional Project Manager (RPM), and six National Project Coordinators to execute and coordinate activities in the recipient countries. The following organigram explains the organizational structure and the interactions between the executing agency, project steering committee, and the project management team.

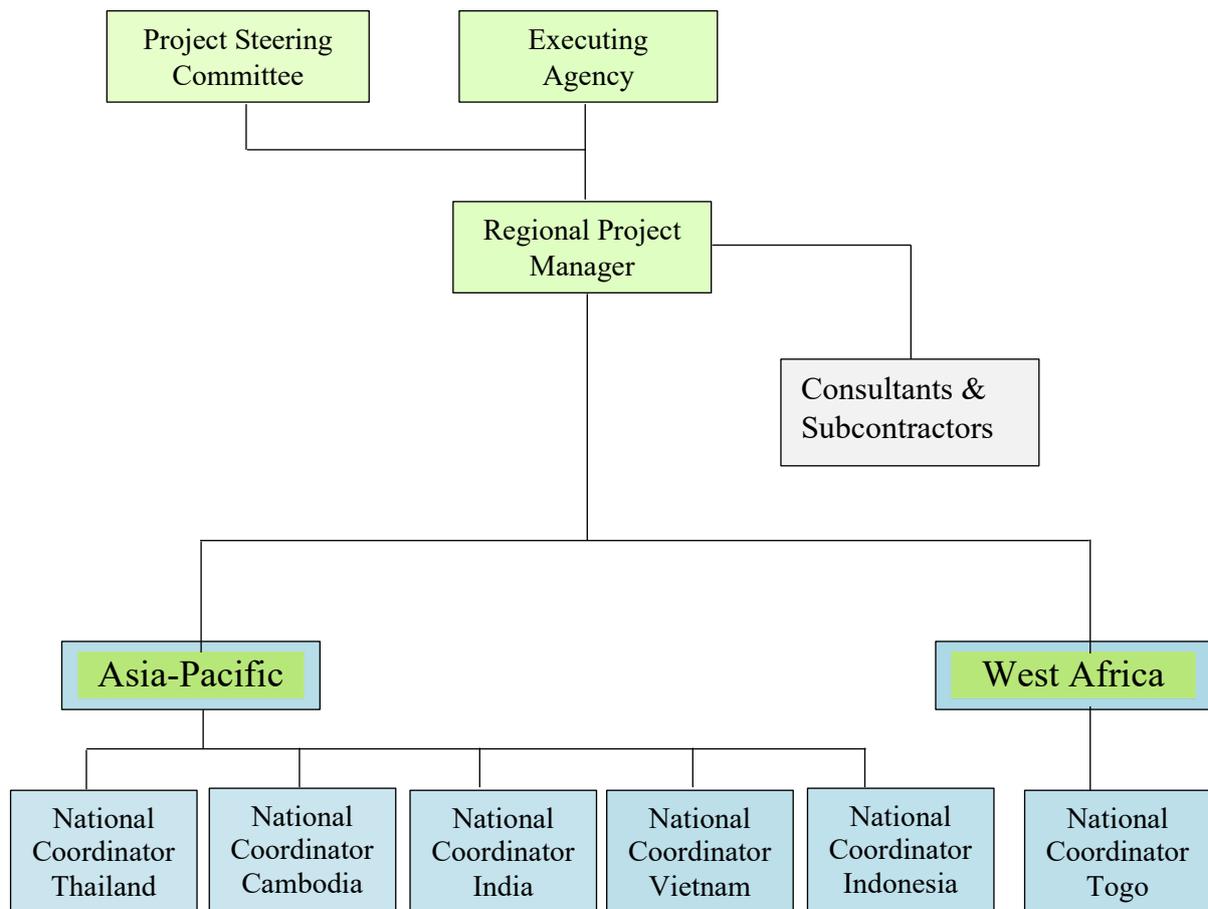


Figure 3: Organizational structure of the project management team

The Regional Project Manager (RPM) will support the executing agency in overall implementation of the Project and organize the meetings of the Project Steering Committee. He/she will be responsible for submitting to the Executing Agency the inception report, the progress reports, and the completion report. The RPM will also compile and endorse the financial reports received by the national project coordinators and submit consolidated financial reports to the Executing Agency. Format and schedules of reporting will be decided upon consultation with the BMEL.

The project management team will develop and adjust the annual national work plans, draft Terms of Reference for consultants and contractors, identify and recruit personnel, consultants and external supporters, supervise and control the quality of their work, and facilitate the implementation of activities.

External supporters are international and national academic and research organizations, commercial forest nurseries, forestry training institutes and representatives which will be recruited through consultancy or service contracts. Kasetsart University- Thailand, Indian Council of Forestry Research & Education, Dehra Dun, and University of Lomé -Togo will mainly cover Output 1 and partly cover Output 2. RECOFTC-Cambodia, Forest Industry Organization (FIO) Thailand, and the Vietnamese Academy of Forest Sciences, Vietnam and Research Centre for Plant Conservation Botanic Garden and Forestry /National Research and Innovation Agency (BRIN) -Indonesia, Kasetsart University will organize and implement training events and capacity building for smallholder community plantations or agroforestry systems and wood processing, transport, design wood products for value addition, marketing and value-chains (Output 2). To support Output 2, Thünen Institute of Forestry, Germany will be subcontracted to carry out feasibility studies for microfinancing/credit- lending schemes for smallholder teak plantations (Activities 2.1–2.4). TEAKNET will be subcontracted to produce and disseminate outreach and training material, upgrade their webpage to communicate and disseminate findings and lessons learnt, support organizing one regional workshop, and co-organize the teak events in IUFRO World Congress 2024 and fifth World Teak Conference 2025 and (Output 3).

Specific work packages may be subcontracted to selected other partners of the Project, such as national universities, academic and research institutions, and training institutes to support the implementation of training events. The Terms of Reference for staff and consultants are provided in Annex 5.1 in a summary form based on which the detailed ToR are developed during the inception phase.

4.1.3 Project steering committee

Upon recruitment of the Regional Project Manager an Project Steering Committee (PSC) will be established, the primary role of which is to oversee the implementation of the Project, approve expenditures within the budget, review the activities that have been carried out, and review and propose changes in budgets and activities. The Project Steering Committee monitors the overall strategic management of the Project and ensures that it proceeds in a timely, efficient and effective manner in accordance with its work plan and other aspects of the Project document.

The PSC will comprise of representatives from the Executing Agency and the national partner agencies, ITTO and the donor country (Germany). The RPM will act as Secretary of the PSC that will meet at the inception, during the mid-term, and at the end of the Project.

In addition, a Technical Committee will be established to support the work of the Project Steering Committee through a periodic review of the implementation of all activities geared to the achievement of the Project's objective. The Technical Committee will be made up of technical team members of the national partner agencies and will meet twice a year in conjunction with Project Steering Committee meetings or major events of the Project such as a regional workshop.

4.1.4 Stakeholder involvement mechanisms

In addition to the PSC, the Project Management Team will collaborate with relevant stakeholders at regional, national and local levels through participatory processes and active dissemination of information on planned and implemented activities through outreach materials, and ITTO website.

Stakeholder involvement mechanisms include established procedures that encourage the active participation of interested stakeholders and ensure access to all non-confidential information on the activities and outputs.

Each national forestry administration in the recipient countries will invite its teak development stakeholders in the training events and coordination meetings.

4.2 Reporting, review, monitoring and evaluation

a) Inception report

During the first quarter of the implementation of the Project, the Regional Project Manager will prepare an inception report for the first meeting of the PSC and the donor agency.

b) Technical reports

Consultants providing technical support services will provide mission reports and/or workshop reports according to ITTO guidelines, containing the main results, conclusions and recommendations for future actions. During Project implementation, interim results of technical studies and outputs supported directly by the Project will be reported and presented to Technical Committee meeting and Project Steering Committee meeting to ensure the effective follow-up and evaluation of the achievements of intended outputs of the Project. Technical reports will be submitted to the Regional Project Manager who will forward the reports to the ITTO-Secretariat.

c) Progress reports

Progress reports are submitted in accordance with the “ITTO Manual for Project Monitoring, Review and Evaluation” and BMEL standard reporting also. The National Project Coordinators of each recipient country will monitor the progress of the Project and report to the Regional Project Manager in a regular basis. The progress reports will be made available by the Regional Project Manager to the ITTO-Secretariat

d) Completion Report

Upon conclusion of the Project the Completion Report based on the standard format of ITTO and BMEL will be finalized within 3 months of the completion of the Project and submitted to all recipient countries, and the ITTO-Secretariat. The Terminal Report will assess in a concise manner the extent to which the scheduled activities have been carried out, the outputs produced, the progress towards achievement of the outcomes and impact, and it will present recommendations for any future follow-up action arising from the Project.

e) Monitoring visits

Monitoring visits by ITTO representatives may be fixed by the ITTO-Secretariat in consultation with the Regional Project Manager. They should be planned to coincide with the date of the PSC meetings.

4.2.1 Dissemination of results

The Project Management Team will disseminate results and lessons learnt through two Regional Workshops. These workshops will focus on bringing together stakeholders from government agencies, financial institutions, teak industry, and smallholder farmers to share experiences, best practices and lessons learned on timber legality and financial schemes to support smallholders' teak and other native species plantations, including the role of public-private partnerships to promote the sustainable development of smallholder teakwood industry and plantations. The selected representatives of the participating countries share the lessons learned in the teak events at IUFRO World Congress 2024 (Sweden) and World Teak Conference 2025 in India, will also be disseminated.

In addition, TEAKNET will regularly publish results and findings through the bi-monthly online Teak Mekong newsletter on their websites and in the TEAKNET Bulletin that is produced three times a year by the TEAKNET Secretariat and is accessible on the internet (www.teaknet.org). On a national level, the National Project Coordinators will publish newspaper articles in the local press and printed copies of key output documents are distributed to potential beneficiaries and translated to local languages.

4.2.2 Mainstreaming lessons learnt

The outputs of the Project and lessons learnt will have implications on the global teak sector and will provide the basis for upscaling and replicating the findings in other teak growing countries. The lessons learnt will be disseminated to all ITTO members through outreach mechanisms such as regular reporting at Council/Committee sessions, the one regional teak workshop, IUFRO World Congress 2014 (Sweden) and the World Teak Conference 2025 in India. These activities will constitute high-level visibility events, in which decision makers can publicly make or renew commitments to the objectives pursued by the Project and initiate changes in forest policy and legislation or the adoption of best management practices.

In addition, ITTO will publish targeted articles in the journal *Tropical Forest Update* during and after the completion of the Project and issue a policy brief as an output of the regional workshop.

5 Annex

5.1 Terms of reference of key personnel and consultants to be funded by the Project

Position, qualification	Person-months, functions, responsibilities
Regional Project Manager (RPM)	36 months, full-time
<ul style="list-style-type: none"> • Post graduate degree (MSc) in forestry or natural resources management • A minimum of 10 years working experience in natural resources management and proven experience in managing donor projects and budgets • Knowledge of institutional structures and proven leadership in team work • Proven team worker with coordination skills at international, national and local levels • Good knowledge of the environmental, political and social context of the Greater Mekong Sub-region • Fluency in spoken and written English 	<ul style="list-style-type: none"> • Take overall responsibility of project planning and implementation at regional level and day-to-day project management and administration; • Organize the project inception phase, facilitate the set-up of the Project Steering Committee and the Project Management Team, organize and coordinate all logistic and organizational arrangements needed for successful project take-off and implementation; • Facilitate the establishment and development of the national and international contacts needed for the successful implementation of the project; • Closely coordinate implementation with ITTO, PSC, national project coordinators and with other organizations (government, NGOs, local community networks) • Participate in PSC meetings and present project outcomes, results and findings to the PSC members • Act as Secretary of the PSC, organize its meetings, compile and circulate documents and minutes • Hire and supervise all consultants and subcontractors needed for project implementation and capacity building measures in cooperation with national project coordinators • Coordinate, supervise and monitor the progress of technical and administrative activities, incl. consult. services • Assist in the organization of workshops, training events, and consultation processes • Provide guidance and supervision to staff, volunteers, experts and consultants and promote and foster a culture of knowledge generation, management, and sharing within the project management team and other stakeholders • Support the regional and national policy dialogue on the conservation and sustainable management of teak forest resources to facilitate transformational change through integration into broader regional or national development programs • Supervise the preparation of technical report and/or project documents and ensure distribution to relevant stakeholders, coordinate feedback and amendment of drafts, and circulate final versions • Ensure optimal flow of funds to activities and prepare financial reports, or special reports, to the executing agency and the donor • Undertake national and international travel, as and when required • Develop and maintain good relations with the media and communication partners and ensure a smooth implementation of all communication work • Participate in training events in your field of expertise

Consultant 1: Production of good-quality planting material (international)	3 months
<ul style="list-style-type: none"> • Post-graduate degree (MSc) in forestry, biology or plant genetics • A minimum of 5 years working experience in forest genetics or forest sciences; • Good understanding of nursery management, tree improvement and forest management • Experience in capacity building and the implementation of training events • Proven ability to work in teams with other experts • Good knowledge of the environmental, political and social context of the Asia Pacific region • Fluency in spoken and written English 	<ul style="list-style-type: none"> • Develop quality standards for teak planting material on regional level according to existing schemes for the control of reproductive material (e.g. the OECD scheme on forest reproductive material) • Support the production of good-quality planting material and disseminate products to the participating countries upon request • Develop and implement a capacity building program for teak improvement and the mass propagation of quality forest reproductive material including public and private nurseries. • Compile all results and findings, incl. recommendations for follow-up actions, in a technical project report in the English language to be submitted to the Regional Project Manager. • Carry out all activities in close cooperation with scientists and researchers from participating countries • Assist in the capacity building program for researchers, scientists and local communities, as and when required • Assist in other activities assigned by the Regional Project Manager

Position, qualification	Person-months, functions, responsibilities
Consultant 2: Field training in seed production/ nursery mgt/ silvicultural practices (national)	3 months
<ul style="list-style-type: none"> • University degree in forestry, forest management or related field • A minimum of 5 years working experience and good understanding of tropical forest seeds, silviculture and nursery management, • Experience in planning, organizing and implementing training events for local communities • Proven ability to work in teams with other experts and to communicate with local communities • Good knowledge of the environmental, political and social context of the Greater Mekong Sub-region • Fluency in spoken and written English 	<ul style="list-style-type: none"> • Prepare a program for group training event, incl. classroom presentations/discussions and field demonstrations, that is tailored to the needs of smallholder rural communities and has the objective to improve silvicultural practices and forest management • Include in the training program the following subjects: seed production and nursery techniques, silvicultural practices and improved stand management. • Implement the training program once every year during the project period (in total three times). • Compile all results and findings of each training event, incl. recommendations for follow-up actions, in a technical project report in the English language to be submitted to the Regional Project Manager.

Position, qualification	Person-months, functions, responsibilities
Consultant 3: Legality (international)	3 months
<ul style="list-style-type: none"> • Post-graduate degree (MSc.) in Forest Resource Science/Environment/ Development Studies • A minimum of 5 years working experience in forest resource assessment, developmental policy, timber legality and forest certification and supply chains in GMS region. • Good understanding of developing approaches to engage local communities in forest biomass assessment, poverty and livelihood enhancement. • Proven ability to work in teams with other experts • Good knowledge of the environmental, political and social context of the Asia Pacific and Africa • Fluency in spoken and written English 	<ul style="list-style-type: none"> • Review and evaluate the measures undertaken to promote legal timber production and trade of smallholder teak and other species plantation resources in Asia Pacific and W. Africa. • Assess the legal framework, measures and identifying the global challenges in the marketability and trade of legally harvested timber products from smallholder and community plantations and suggest solutions. • Compile all results and findings, incl. recommendations for follow-up actions, in a technical project report in the English language to be submitted to the Regional Project Manager. • Carry out all activities need in close cooperation with scientists in India, Thailand, Vietnam, Cambodia, Indonesia and Togo. • Assist in other activities assigned by the Regional Project Manager

Consultant # 4: Wood processing, design products and innovation (national)	3 months
<ul style="list-style-type: none"> • Post-graduate degree (MSc) in architecture, product design or wood technology • A minimum of 5 years of working experience in wood processing and design products; • Good understanding of wood manufacturing, knowledge of wood use promoting policy is an advantage. • Proven ability to work in teams with other experts and to communicate with local communities • Fluency in spoken and written English 	<ul style="list-style-type: none"> • Prepare a program for a five-days group training, including classroom presentations/discussions and field demonstrations, that is tailored to the needs of rural communities and has the objective to improve efficiency, product quality and product design • Designing and marketing wood products for the young generation • Organize and host wood business firms for B2B workshop • Assist in the capacity building program for researchers, scientists and local communities, as and when required • Assist in other activities assigned by the Project Manager • Compile all results and findings of each training event, incl. recommendations for follow-up actions, in a technical project report in the English language to be submitted to the Regional Project Manager

Consultant 5: Information management (international)	5 months
<ul style="list-style-type: none"> • Post-graduate degree (MSc or PhD) in forestry/wood technology, knowledge management, event organization, or information technology • A minimum of 10 years' progressive experience in forestry research, information management, networking and collaborative partnership with international organisations, outreach, and event organizations- conferences/workshops at international level • Strong understanding of the global teak sector including forest management, forest industries and the timber market • Experience in managing information networks and webpages for the dissemination of information • Proven ability to work in teams with other experts • Fluency in spoken and written English 	<ul style="list-style-type: none"> • Produce outreach and training material on the sustainable management of smallholder /community based teak and other species plantations, natural and planted teak forests in collaboration with national project coordinators, research institutions, NGOs, and development partners • Support the dissemination of the outreach and training material through a user-friendly, easily accessible webpage and newsletter to support regional forest policy development for the sustainable management of teak and other tropical tree species • Support the planning and organization of the events at IUFRO World Congress 2024 and World Teak Conference 2025 including the participation of representatives from ITTO member states

Position, qualification	Person-months, functions, responsibilities
Consultant # 6: Value chains (international)	3 months
<ul style="list-style-type: none"> • Post-graduate degree (MSc or PhD) in forest or natural resources economics, wood processing business, finance, or closely related field. • A minimum of 10 years' progressive experience in forest economics, forest management, forest products or wood processing; • Strong understanding of forest industries and business, including understanding of financing options and private sector investment opportunities, and value and supply chains; • Good analytical and computation skills • Proven ability to work in teams with other experts • Good knowledge of the environmental, political and social context of the Asia Pacific and African region • Fluency in spoken and written English 	<ul style="list-style-type: none"> • Undertake a literature review and organize and participate in data collection on the teak timber market in Thailand, India, Vietnam, Indonesia and Togo with particular reference on key products produced and marketed by local communities • Conduct an exemplary market chain analysis of key teak products produced and sold by smallholder communities in order to understand the strengths, weaknesses, opportunities and threats of the local market taking into account harvesting, post-harvest processing, production and/or value addition, transport and logistics and storage facilities and trade. • Develop a prioritized set of recommendations for interventions to strengthen the market position of smallholders and enhance their competitiveness. • Compile all results and findings, incl. recommendations for follow-up actions, in a technical project report in the English language to be submitted to the Regional Project Manager.
Consultant # 7: Teak strategy development (international)	6 months
<ul style="list-style-type: none"> • Post-graduate degree (MSc or PhD) in forest or natural resources economics, finance, or closely related field. 	<ul style="list-style-type: none"> • Undertake a literature review for the national policy, teak investment and economic analysis of smallholder teak plantations in Thailand, Cambodia, India, Vietnam, Indonesia and Togo

<ul style="list-style-type: none"> • A minimum of 10 years’ progressive experience in forest economics, forest management, forest sector strategy development; • Strong understanding of financing options and private sector investment opportunities, and economic analysis of timber sector; • Good analytical and computation skills • Proven ability to work in teams with other experts • Good knowledge of the environmental, political and social context of the Asia Pacific and African region • Fluency in spoken and written English 	<ul style="list-style-type: none"> • Support the conduct of surveys and data collection for the carbon market opportunity study of teak plantations which will be organized by TIF, Germany in order to analyze the investment opportunities for longer rotations. • Facilitate the organization of national webinars with the Regional Project Manager • Facilitate the organization of a regional workshop in Java, Indonesia and the identification of teak investment strategy with the national coordinator in Indonesia • Develop a prioritized set of recommendations for the sustainable development of the participating countries’ teak investment to strengthen the effective participation of smallholders and local communities, in a technical project report in the English language to be submitted to the Regional Project Manager.
--	--

5.2 List of key stakeholders in the six participating countries

Thailand	
Name	Major function in the context of the Project
Royal Forest Department (RFD), National Park, Wildlife and Plant Conservation Department (DNP)	<ul style="list-style-type: none"> • Recruitment of Regional Project Manager • Teak improvement programs (in-situ & ex-situ), • Promote the use of improved genetic material from teak improvement programs • Support capacity building to address the needs on research, information sharing, training, workshops, technical conference, field visits • Promote cooperation and networking with other national and international organizations • Contribute to the establishment of a voluntary certification scheme for smallholder teak plantations
Forest Industry Organization (FIO)	<ul style="list-style-type: none"> • Support research efforts and capacity building for forest products harvesting, transport, minimizing harvesting losses, efficient wood processing using small-size timber. • Support the analysis of teak wood value chain and marketing to enhance legality and added value of exported teak products. • Support the establishment of research and demonstration plots to showcase suitable forest management and the benefits of using improved genetic materials
Kasetsart University, King Mongkut's University of Technology, North Bangkok, Chiangmai University	<ul style="list-style-type: none"> • Contribute and support research efforts and capacity building for silviculture, forest management, forest products harvesting, transport, minimizing harvesting losses, and efficient wood processing and product designs for increased value
Private plantation owners, Thai Timber Association, The Sawmills Association, Thai Plantation Farmers Cooperatives and smallholders	<ul style="list-style-type: none"> • Contribute and support teak improvement programs (<i>in-situ</i> & <i>ex-situ</i>), • Contribute and support research efforts and capacity building for silviculture, forest management, forest products harvesting, transport, minimizing harvesting losses, efficient wood processing, and product designs
Microfinance, credit-lending organisations (e.g., BAAC, Tree bank CSO)	<ul style="list-style-type: none"> • Support financial incentives /credit-lending to smallholder teak plantations
NGOs	<ul style="list-style-type: none"> • Contribute to and support work in forest conservation and management

Cambodia	
Name	Major function in the context of the Project
Forestry Administration	<ul style="list-style-type: none"> • Recruitment of National Project Coordinator • Promote the use of improved genetic material from teak improvement programs • Support the import and use of improved teak planting material • Support capacity building to address the needs on research, information sharing, training, workshops, technical conference, field visits • Promote cooperation in public – private partnership, and networking with other national and international organizations • Support microfinancing and credit-lending schemes for smallholders
Institute of Forest and Wildlife Research and Development, Royal University of Agriculture	<ul style="list-style-type: none"> • Contribute and support research efforts and capacity building for silviculture, forest management, forest products harvesting, transport, minimizing harvesting losses, and efficient wood processing • Support the establishment of research and demonstration plots to showcase suitable forest management and the benefits of using improved genetic materials • Support the analysis of teak wood value chain and marketing to enhance legality and added value of exported teak products
Private plantation owners (e.g. Grandis Timber and TEAK FARM)	<ul style="list-style-type: none"> • Support the establishment of research and demonstration plots to showcase suitable forest management and the benefits of using improved genetic materials • Contribute to the establishment of a voluntary certification scheme for smallholder teak plantations • Develop and operate teak nurseries for seed production; • Contribute and support research efforts and capacity building for silviculture, forest management, forest products harvesting, transport, minimizing harvesting losses, and efficient wood processing

India	
Name	Major function in the context of the Project
Indian Council of Forestry Research & Education, Dehra Dun	<ul style="list-style-type: none"> • To nominate a National Coordinator • Teak improvement programs (in-situ & ex-situ) • promote the use of improved genetic material for teak improvement programs • conduct 4 training programs to support capacity building on seed collection, storage and use of planting materials, silvicultural practices like thinning and pruning for the benefit of smallholders and selected teak growers/planters and targeted beneficiaries • Support capacity building to address the needs on research, information sharing, training, workshops, technical conference, field visits • organize and support access to good quality planting material • contribute to the development of guidelines for the national and international transport of quality planting materials • Promote cooperation and networking with other national and international organizations • Support for smallholder teak plantations in agroforestry/community- based, canal bund teak farming systems under suitable sites and other tree species besides teak for alternate income generation and livelihood • Identify organisations of micro-lending and credit scheme to smallholder teak and community -based wood industries for efficient processing and value addition of teak and other wood products
Organisation under ICFRE	Institute of Forest Genetics and Tree Breeding-IFGTB -Coimbatore
Microfinance (e.g., National Bank for Agriculture and Rural Development - NABARD)	<ul style="list-style-type: none"> • Support with microfinance and credit-lending schemes to smallholder teak plantations for quality timber production and marketing of teakwood to increase income and livelihood enhancement.

Vietnam	
Name	Major function in the context of the Project
Administration of Forestry Department of Agriculture and Rural Development of Son La Province (DARD Son La)	<ul style="list-style-type: none"> • recruit National Coordinator • establish links across the supply chain between teak wood processors in Viet Nam and teak growers in the Mekong region • establish links with smallholders who manage teak plantation in Son La province for collaboration in research on tree improvement and plantation management • support sustainable forest management for existing teak plantations and CoC certification for the companies who produce and export teak wood products • promote the use of improved genetic material from teak improvement programs • organize and support access to good quality planting material, incl. through import from other countries • promote cooperation and networking with other national and international organizations • contribute to the establishment of a voluntary forest management certification scheme • support forest law enforcement, good governance and trade for teak timber under the FLEGT VPA process and improve the traceability and transparency of the chain of custody.
Vietnam Forestry Cooperation (VINAFOR)	<ul style="list-style-type: none"> • selection and maintenance of mother trees and seed production areas in existing plantations in Southeast and Central Highlands • support research efforts and capacity building for forest products harvesting, transport, minimizing harvesting losses, efficient wood processing using small-size timber.
Vietnamese Academy of Forest Sciences (VAFS)	<ul style="list-style-type: none"> • Contribute to and support in-situ and ex-situ conservation measures (e.g. selection of mother trees, identification of plus trees and seed production areas, progeny tests, clonal tests, establishment of seed orchards). • Contribute and support research efforts and capacity building for nursery operations, silviculture, site classification, forest management, forest products harvesting, transport, minimizing harvesting losses, and efficient wood processing • Conduct research about using teak timber for furniture making for domestic and export market, particularly using small dimension logs from plantations.

Indonesia	
Name	Major function in the context of the Project
Research Centre for Plant Conservation Botanic Garden and Forestry / National Research and Innovation Agency (BRIN)	<ul style="list-style-type: none"> • To recruit National Coordinator • Support capacity building to address the needs on research, information sharing, training, workshops, technical conference, field visits • support small-holder plantations and community-based forest management program, • Promote cooperation and networking with other national and international organizations • Contribute to the establishment of a voluntary certification scheme for smallholder wood productions and small and medium wood industry. • Teak improvement programs (<i>in-situ</i> & <i>ex-situ</i>), • Promote the use of improved genetic material from teak improvement programs • Organize one regional workshop in middle of 2024 • Support for group cooperatives for improved marketing of wood products from SMEs
Micro-lending and credit organisations	<ul style="list-style-type: none"> • Financial schemes to promote the production of quality teak timber • Kredit Usaha Rakyat (KUR)- government-sponsored credit scheme for SMEs and smallholder teak plantations • Kredit Usaha Kecil (KUK) - government-sponsored credit scheme that is specifically targeted at small business entrepreneurs including teak smallholders • Forestry Financing Program (FFP)- joint initiative of the Indonesian government and the World Bank that provides financing and technical assistance to small and medium-sized forestry enterprises
CIFOR	<ul style="list-style-type: none"> • link agriculture or forest micro, small medium enterprises (MSMEs) with potential financial institutions and investors to support smallholder teak plantations and community plantations • support and capacity building, using intermediaries, committing to long-term relationships, and fostering collaboration

West Africa

Togo	
Name	Major function in the context of the Project
University of Lomé	<ul style="list-style-type: none"> • To recruit a National Project Coordinator • Selection of plus trees of teak to provide improved planting material by vegetative propagation to establish plantations • Establish seed production areas, progeny tests, clonal tests, and seed orchards • Contribute to and support <i>in-situ and ex-situ</i> conservation measures • Establish demonstration plots of teak and other valuable tree species • conduct training/capacity building workshops for smallholders /community -based farmers for improved silviculture practices, nursery management of quality seedling production • tree management in Taungya system with support of NGOs and other interested stakeholders and selection of valuable native tree species besides teak suitable to the ideal climate of the region • Contribute and support research efforts and capacity building for nursery operations, silviculture, site classification, forest management, forest products harvesting, transport, minimizing harvesting losses, and efficient wood processing of small dimension logs • Dissemination of existing knowledge of best practices in plantation management for smallholders to produce quality timber • Encourage public-private partnership through fiscal incentives • Promote modern industries for efficient wood processing, encourage export market of teak in Togo
Micro-lending and credit organisations	<ul style="list-style-type: none"> • micro financial support (e.g. through banks, microfinancing institutions) for smallholder investments.
NGO's	<ul style="list-style-type: none"> • Supportive mechanism for timely dissemination of international market prices for better decision making of selling teak logs. • assist private actors to organize themselves into producer groups for increased market access • Contribute to capacity building for smallholders improve farm production from agroforestry systems including teak and other native tree species.

* * *