

Draft Roadmap for Advancing the Sustainable Development of the Timber Construction Industry in Thailand

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Background and rationale for a Wood Solution Thailand roadmap

The world's built environment will roughly double by 2050, with most new construction occurring in the Global South, while conventional construction materials such as cement, steel, and concrete remain major sources of greenhouse-gas emissions.

The core idea is that engineered wood construction (mass timber) can help meet growing demand for housing and infrastructure while reducing emissions and storing carbon in buildings for decades. Engineered Wood (CLT, Glulam, LVL, etc.), prefabrication, and modular construction are highlighted as technologies that enable faster, cleaner, and high-quality building systems. Wood by-products and residues can also substitute fossil fuels and support a circular bioeconomy. The main constraint is not the technology itself but the lack of locally adapted industrial systems in many tropical and subtropical countries: degraded forests, weak processing capacity, fragmented value chains, and limited skills mean that simply importing equipment is insufficient.

The proposed solution is to connect sustainable forest restoration with local wood processing and engineered-wood manufacturing, creating jobs, rural income, timber supply, and ecosystem recovery at the same time. Degraded land worldwide presents an opportunity for reforestation and productive tree-based systems that do not compete with food production. Over time, the model aims to shift from concrete cities to wood cities, from degraded lands to regenerated landscapes, and from extractive economies to circular, locally rooted bioeconomies. An integrated approach offers a scalable pathway for urban decarbonization, forest restoration, rural development, and long-term climate resilience, while aligning climate goals with national economic development priorities. Overall, sustainable timber construction works best when it is embedded in a locally rooted restoration-and-industry system that keeps both carbon and value circulating within the economy. This framing is presented as a practical development strategy, not only a climate narrative.

Sustainable timber construction represents a significant opportunity for Thailand to reduce emissions in the building sector while supporting rural economic development and sustainable forest management. Since 2022, the Royal Thai Embassy in Stockholm has collaborated with the Eco Innovation Foundation (EIF) and pioneering actors in Thailand's forestry and construction sectors, together with Swedish organizations and experts. The aim has been to explore opportunities for advancing sustainable timber construction in Thailand through awareness building, consultation and research collaboration. These efforts have helped build a network of actors interested in developing a sustainable timber construction industry in Thailand. This has also included a development of several concrete pilot initiatives and institutional partnerships support cross-sector collaboration, innovation and coordinated action across the full value chain.

More recently, Eco Innovation Foundation, Stockholm Environment Institute (SEI), and the Thai Nordic Innovation Unit, have received funding from Sida and the Royal Thai Embassy in Stockholm for an "Engagement Phase" to further support the development of a national program for starting up a sustainable wood building industry and advancing the dialogue on opportunities for collaboration between Thailand and Sweden.

The aim of the Engagement Phase is to mobilize partners, identify viable pilot initiatives, and establish the institutional, technical, and financial links to accelerate the transition from dialogue and concept development toward concrete implementation. An important part of the Engagement phase is the development of a roadmap.

Introduction to the roadmap exercise

To support the development of a sustainable and competitive timber construction sector in Thailand, a roadmap was developed through a participatory multi-stakeholder process. A roadmapping workshop held on 15 May 2026 brought together 24 Thai representatives from government, industry, academia, finance, and civil society to establish a shared strategic direction and vision, identify key opportunities and constraints, and define priority actions for Thailand's timber construction sector. It will help align stakeholders around a common vision, identify key barriers and opportunities, prioritize actions, and define milestones and indicators for implementation. By creating a coordinated framework, the roadmap supports the transition towards a competitive, sustainable, and forest-positive wood building industry that contributes to climate goals, rural development, and green economic growth.

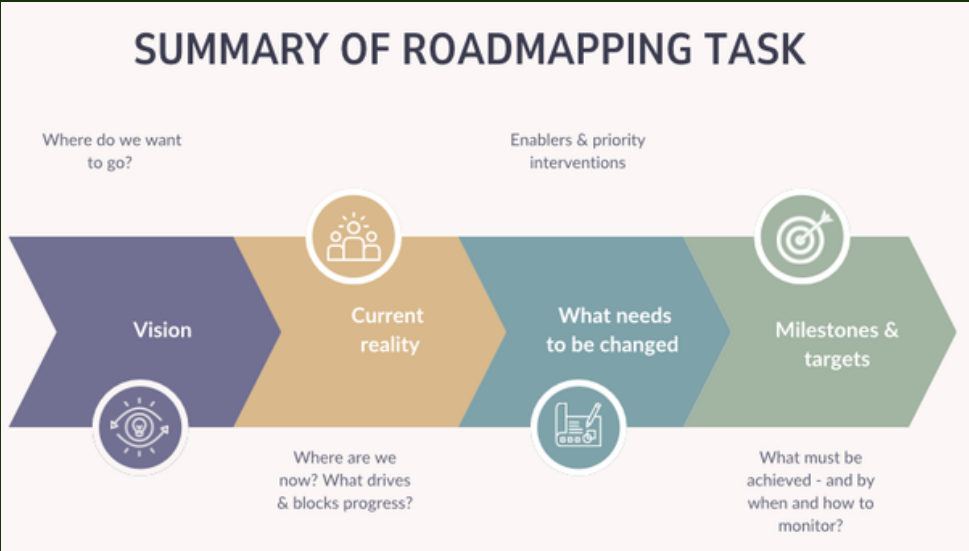


Figure 1. Summary of the tasks to the participants at the roadmapping workshop, 15 May 2026

Photo 1. Participants at the roadmapping workshop In Bangkok on May 15 2026



Developing a vision

To work together to develop a "forest-positive wood building industry" in Thailand.

SWOT analysis

Below is the SWOT analysis, identifying strengths, weaknesses, opportunities, and threats of the current situation in Thailand for reaching the vision above for developing a sustainable and competitive timber construction sector in Thailand.

Strengths

- The Thai Economic Wood Subcommittee provides an integrated platform for policy, industry and sustainable resource management.
- Emerging Thai policy reforms and climate regulations create opportunities for sustainable wood production and higher-value processing in Thailand.
- Strong local knowledge and creative use of low-value wood and waste materials support innovation and higher-value products.
- Thailand has capacity to strengthen forestry expertise by building on international experience and adapting global best practices to local conditions
- Thailand's financing instruments could support greater investment in sustainable forestry and forest restoration
- Thailand has diverse fast-growing wood species with valuable functional and mechanical properties.
- Thailand's tropical climate, rich natural resources and diverse tree species support strong potential for sustainable wood production and carbon storage.
- AI, remote sensing and modern technologies create opportunities to improve forestry management and productivity in Thailand.

Weaknesses

- The Thai wood sector is constrained by weak policies, limited political commitment and unclear implementation frameworks.
- Limited incentives for wood planting and use, combined with weak preservation of wood-related cultural practices, constrain the development of Thailand's wood sector.
- Weak regulations, outdated laws and fragmented policies constrain Thailand's wood-sector development and forest restoration efforts.
- Lack of clear national agroforestry mechanisms and limited integration of sustainable agriculture and forestry practices constrain wood/forest sector development.
- Thailand lacks accurate and systematic data on annual wood harvesting and processing volumes from both natural forests and commercial plantations.
- Outdated regulations, complex licensing processes and limited investment incentives constrain the large-scale development and modernization of Thailand's wood industry.
- Lack of supportive legal frameworks and logging restrictions constrain the development of forest concessions and sawmill operations.
- Limited productivity, efficiency and regional competitiveness across Thailand's forest production and wood-product value chains.

- Younger generations often view forestry and wood-sector work as outdated and unattractive.
- Limited skills, innovation and sustainable forest-management capacity constrain productivity and long-term development in Thailand's wood sector.
- The existing number of sawmills remains insufficient and continues to face legal and regulatory constraints.
- Limited funding, subsidies and inadequate financial mechanisms constrain investment, innovation and the development of Thailand's wood value chain.
- Transportation constraints remain a challenge, as wood can only be transported through rail and waterway systems.
- Limited market demand and weak market mechanisms constrain the use of wood in architectural design and adoption of sustainable wood-based construction.
- Limited economies of scale and low productivity reduce the price competitiveness of Thailand's wood industry.
- Limited high-quality wood supply, strict regulations and underdeveloped plantations constrain engineered wood production in Thailand.
- Limited data gathering systems and monitoring constrain effective forestry planning and management in Thailand.
- Thailand's wood value chain faces declining skills and limited expertise across design, construction and wood-processing professions.

Opportunities

- Growing green building and low-carbon construction trends create opportunities for sustainable wood products in Thailand.
- Thailand's climate targets and carbon markets create opportunities for sustainable wood value chains and low-carbon development.
- Building a new green growth engine through an integrated and sustainable wood industry.
- Thai agroforestry supports climate resilience, carbon sequestration and climate finance opportunities.
- Opportunities exist to strengthen links between the wood sector and tourism, wellness and creative industries.
- International cooperation, digital technologies and occupational standards can support skills development, innovation and workforce capacity in Thailand's wood sector
- Growing interest in wood craftsmanship and Thai local knowledge supports sustainable wood-sector development aligned with cultural and environmental values.
- Climate finance and low-carbon wood value chains create opportunities for sustainable and carbon-negative forestry development.

Threats

- Foreign wood companies are gaining ground in Thailand, while domestic firms face limited policy support and competitiveness challenges.
- Negative public perceptions linking wood use to deforestation may hinder the development and commercialization of sustainable wood products.
- Declining woodcraft education, loss of traditional knowledge and limited standardized training are weakening skills and workforce development in Thailand's wood sector.
- Competition from cheap imported and synthetic wood alternatives challenges the competitiveness of Thailand's wood sector.
- Market concentration and dominance by a few powerful actors create unfair control over forest resources and value chains.
- Uncertain returns and unclear outcomes limit public and private investment in projects.
- Climate change and forest fires pose growing risks to stakeholders across the wood value chain.
- Changing housing patterns and faster construction methods are reducing demand for wood in the construction sector.

Summarising opportunities and obstacles

The SWOT analysis can be summarized into broader areas for:

Strengths & Opportunities → Areas to build on, scale, and leverage.

Weaknesses & Threats → Areas that require targeted action, mitigation, or system change, and challenges to overcome.

What should be built on?

Accelerating Thailand's wood bioeconomy, and building a new engine for green growth, industrial development and climate action through:

- **Leveraging** Thailand's rich natural resource base, favourable tropical conditions and diverse fast-growing tree species for sustainable wood production and carbon storage.
- **Harnessing and accelerating** emerging policy reforms, climate targets and sustainability regulations to create an enabling environment for forestry investment and value-added wood industries.
- **Capturing** the growing demand for green buildings, low-carbon construction materials and sustainable wood products in domestic and international markets, and demonstrate the value of timber construction.
- **Deploying** AI, remote sensing and digital technologies to improve forest management, productivity, traceability and sustainability performance.
- **Strengthening** human capital, innovation and industrial capabilities through international cooperation, B2B partnerships, technology transfer and skills development.

What must we fix or overcome?

Strategic bottlenecks that Thailand must address to accelerate the development of a competitive wood bioeconomy through:

- **Strengthen the policy and regulatory environment.** Weak policy coordination, outdated legislation, fragmented implementation and complex licensing systems continue to constrain investment, innovation and sustainable growth across the wood sector.
- **Expand sustainable wood supply and data system.** Underdeveloped plantation forestry and agroforestry systems, combined with inadequate data, monitoring and resource inventories limit long-term planning, investment and the reliable supply of wood raw materials.
- **Increase productivity, competitiveness and value addition.** Low productivity, limited value-added processing and growing competition from imported and synthetic alternatives reduce the competitiveness of Thailand's wood industry in domestic and international markets
- **Improve and build skills, innovation and industrial capabilities.** Skills shortages, declining technical expertise and limited innovation capacity constrain the sector's ability to modernize, adopt new technologies and develop higher-value wood products. Stronger partnerships, technology transfer and industry collaboration are needed.
- **Stimulate market demand and mobilize investment.** Weak market demand for sustainable engineered-wood construction products, negative public perceptions of industrial wood use, and limited access to finance and investment create barriers to scaling sustainable forestry and wood-based industries.

Proposed actions, actors and timelines

Suggested actions: Policy

Suggested policy actions	Who to do and when
Create supporting systems in policy, markets, and vocational skills to drive the wood economy forward in a tangible and effective manner.	All actors (short- to long term)
Strengthen Thailand's forestry sector through updated legal and policy frameworks , through modifying Forest Plantation Act and CCF land allocation scheme expansion for sustainable commercial forest areas and tree planting, and development of integrated wood value chains through a National Economic Wood Strategy.	Thai Government (short- to long term)
A National Economic Wood Promotion Plan aligning wood production, local ecological potential and market demand while supporting integrated upstream and downstream wood value chains and strengthening the competitiveness of Thailand's forestry industry.	Thai Government/Thai industry (short term)
Expand tree planting and regional promotion zones with the aim to increase forest cover (to 40% from 30%) and ensure a stable wood supply.	Thai Government/Thai industry/Thai Forest owners/practitioners (medium- to long term)
Set forestry GDP and revenue targets while establishing a commercial forest plantation fund to support value-added wood industries and sector growth.	Thai Government (short term)
Strengthen Thailand's wood industry through increased R&D investment, industrial policy support, BOI incentives, tax measures and financial support mechanisms that promote sustainable forestry, wood construction and a competitive bioeconomy-based wood sector.	Thai industry/Thai Government (short- to long term)
Develop government procurement policies promoting wood products strengthening Thailand's wood industry and increase value addition across the forestry supply chain.	Thai Government (short term)
Modernizing licensing for wood-processing factories/value chains while ensuring fair labour conditions and stable supply chains.	Thai Government (short term)
Develop systems that measure and certify the climate and environmental performance of wood products , so they can compete in growing low-carbon and green construction markets.	Thai industry/Thai Government/market actors (short- to medium term)

Suggested policy actions	Who to do and when
Develop wood certification systems and KPIs to align Thailand's forestry industry with international sustainability and quality standards	Thai industry/Thai Government/market actors (short- to medium term)
Develop traceability and smallholder-oriented carbon credit systems that support sustainable forest management, verify wood origins and enable farmers to collectively access carbon markets and climate finance	Thai industry/Thai Government/Market actors (short- to medium term)
Develop building codes and standards for timber and engineered wood construction to support safe, small, medium and large-scale wood buildings, strengthen sustainable material markets and increase value addition in Thailand's forestry sector	Thai Government/Thai industry (short term)
Develop building codes and standards for timber and engineered wood construction to support safe, small, medium and large-scale wood buildings, strengthen sustainable material markets and increase value addition in Thailand's forestry sector	Thai Government/Thai industry (short- to medium term)
Develop government-led prototype wood buildings to demonstrate sustainable construction, build market confidence and stimulate wider adoption of wood-based building systems across Thailand	Thai Government/Thai industry (short- to long term)

Suggested actions: markets and building awareness

Suggested markets and building awareness actions	Who to do and when
Create awareness and positive narratives that position sustainable commercial forestry as a driver of tree planting, forest restoration and long-term forest cover.	Thai industry/ /market actors (short- to medium term)
Promoting wood as a renewable building material to increase demand, support commercial forestry and strengthen sustainable wood value chains.	Thai industry/ /market actors (short term)
Create green entrepreneur networks , (ecotourism , wood production etc) in the forestry sector and wood and forestry value chain clusters.	Thai industry/ /market actors (short term)
Develop industrial symbiosis and circular economy pilots linking the wood sector with industries such as steel, where wood residues and forestry by-products are used as biomass resources to improve resource efficiency, reduce waste and lower industrial carbon emissions.	Thai industry/ /market actors (short- to long term)
Promote circular and zero-waste wood systems by valorising wood-processing by-products, such as small-diameter wood, sawdust and residues, for bioenergy and other value-added applications adapted to local conditions.	Thai industry/Thai Government/Market actors (short- to long term)
Developing the forestry industry to play a key role in reducing the risks of natural disasters (e.g. flooding).	Thai Government/Thai industry (short- to long term)

Suggested actions: capacity & infrastructure

Suggested capacity & infrastructure actions	Who to do and when
Create Integrated and interconnected dataset that supports strategic planning for Thailand's forestry and wood value chain industry.	Thai Government/ Academia//Thai industry (short- to medium term)
Develop integrated, data-driven forestry systems using remote sensing and spatial data to improve forest monitoring , carbon assessment, land management and evidence-based planning for sustainable forestry and low-carbon development.	Thai Government/ Academia (short- to medium term)
Evaluate the potential economic value of wood-related opportunities alongside the role of forests in enhancing climate resilience	Academia//Thai industry (short term)
Strengthen Thailand's engineered wood industry through investment in technology, innovation, workforce development and upskilling to support modern wood construction and higher-value wood applications.	Thai Government/ Thai industry/FDI/joint ventures (short term)
Develop the engineered wood industry to support larger-scale timber construction, increase value addition in domestic wood products and expand modern low-carbon building applications.	Thai Government/ Academia//Thai industry (short- to long term)
Establish a regional policy and innovation sandbox/testing area in Northern Thailand to test new forestry and value addition and construction technologies, business models and regulatory mechanisms before scaling successful approaches nationally.	Thai Government/ Academia//Thai industry (short term)
Establish clustering mechanisms , spatial zoning, and clearly defined KPIs for supporting scaling up wood production and wood value chains.	Thai Government/ Academia//Thai industry (short term)
Develop flagship wood-based demonstration environments — including university buildings, high-rise timber structures and a “wood city” innovation destination — to showcase sustainable wood construction, innovation and tourism potential.	(Thai Government/ Academia//Thai industry (short- to long term)
Provide farmers with training in plantation management , species selection and production planning to improve wood quality and strengthen the long-term competitiveness of Thailand's forestry value chain.	Thai Government/ Academia//Thai industry (short- to long term)
Strengthen forest labour capacity and providing social and labour incentives enhancing the long-term competitiveness of Thailand's engineered wood industry.	Thai Government/ Academia//Thai industry (short- to long term)
Strengthening the linkage between education and the forestry industry.	Thai Government/ Academia//Thai industry (short- to long term)
Support innovation, modern machinery and specialized forestry technologies to reduce costs , expand markets and accelerate the transition toward competitive, value-added engineered wood industries and national/regional forestry innovation hubs.	Thai Government/ /Thai industry/ Academia /FDI/joint ventures (short- to long term)
Establishing a Thai wood product trade envoy team to promote marketing and build business networks in international markets.	Thai industry (short- to long term)

Key summary recommendations on way forward

1

Strengthen the Thai wood-sector innovation ecosystems through industry-research partnerships, green entrepreneurship networks, value-chain clustering, pilot plants, demonstration facilities and testing centers for engineered wood and advanced wood processing.

2

Build capacity in plantation management, sustainable forestry, modern machinery and digital forestry, wood engineering, manufacturing, and construction.

3

Strengthen technology transfer, co-creation and international collaboration by supporting B2B partnerships, innovation networks and global business linkages that accelerate the adoption, commercialization and scaling of sustainable wood technologies and products.

4

Create incentives for investment and industrial scaling expanding Thailand Board of Investment incentives, tax measures and innovation grants, including-supporting SMEs, startups and entrepreneurs developing new wood-based products and services.

5

Stimulate market demand and commercialization through demonstration projects, public procurement, awareness campaigns and promotion of wood as a renewable, climate-smart building material that supports sustainable forestry, forest restoration and competitive wood value chains.

6

Develop Thai building codes and standards for timber and engineered wood construction supporting safe, wood buildings, strengthen sustainable material markets and increase value addition in Thailand's forestry sector.

7

Strengthen the economic and climate value of forests through organization and support for sustainable and leading-edge forest management, traceability, certification resulting in higher and dependable incomes, as well as access to carbon markets and climate finance.

8

Develop integrated data, monitoring and certification systems on a national/country level, that generate the evidence needed to assess forest resources, carbon performance and wood-product sustainability, while supporting strategic planning, international standards compliance and access to low-carbon markets.

