AFoCO
COUNTRY FORESTRY TREND

Thailand's Forest Sector in Transition

Integrating Carbon Markets, Governance Reform, and the Bio-Circular-Green (BCG) Economy

BACKGROUND

Thailand has positioned the Bio-Circular-Green (BCG) Economy as a national development paradigm to drive sustainable growth, innovation, and resilience. Within this framework, forests are not merely environmental assets but strategic infrastructure for climate mitigation, biodiversity conservation, and rural livelihoods.

Thailand has strengthened its climate ambition by advancing its net-zero emissions target to 2050 and committing to a 47% reduction in greenhouse gas emissions by 2035 (compared to 2019 levels). Achieving these targets requires robust natural carbon sinks. The forest sector, therefore, occupies a central role in national mitigation planning.

The Thailand Voluntary Emission Reduction Program (T-VER), administered by the Thailand Greenhouse Gas Management Organization, provides the national certification framework for carbon credits. Premium T-VER standards align domestic carbon credits with international requirements, including aviation offset mechanisms, strengthening Thailand's integration into global carbon markets.

However, as Thailand scales up forest-based mitigation, three interlinked policy challenges emerge:

- Ensuring environmental integrity and permanence of forest carbon.
- Aligning voluntary markets with emerging compliance mechanisms.
- Mobilizing long-term finance under a coherent regulatory framework.

Addressing these challenges is essential to sustain credibility and unlock the full mitigation potential of forests.

Key Messages

1. Forest-based mitigation is a strategic pillar of Thailand's climate ambition, contributing significantly to national greenhouse gas reduction under the T-VER framework.
2. Strengthened Premium T-VER standards and AI-enabled MRV systems enhance environmental integrity and position Thailand as a credible player in regional carbon markets.
3. The forthcoming Climate Change Act, together with market-based instruments such as ETS and carbon taxation, will reshape domestic carbon demand and accelerate investment in high-integrity forest carbon solutions

Figure 1: Forest and Ecosystem Restoration Project for Carbon Credits by Collaborating between Toyota Boshoku Asia (TBAS) and Royal Forest Department (RFD) for the Premium T-VER Program.
Source : Thailand Greenhouse Gas Management Organization, 2025

COUNTRY TREND HIGHLIGHT

Forests as a Core Climate Mitigation Mechanism

As Thailand advances its BCG ambitions, the forest sector has emerged as a critical component in addressing carbon emissions and supporting green economic growth. A key driver of this effort is the Thailand Greenhouse Gas Management Organization (TGO), which promotes and certifies carbon footprints and carbon credits. TGO's Thailand Voluntary Emission Reduction Program (T-VER) serves as the national standard for greenhouse gas reduction. Currently, carbon credits from Premium T-VER have been certified for offsetting greenhouse gas emissions from the aviation sector under the CORSIA mechanism. This program emphasizes the need for permanent greenhouse gas reductions or the need for measures to address the risk of greenhouse gas re-emissions. This also includes mitigation measures to prevent negative impacts and support the Sustainable Development Goals, in line with the principles of the EUDR. In addition, TGO's recent certification of four AI-powered remote sensing technology platforms for assessing carbon credits in the forestry sector, which will increase the accuracy, reduce the time, and cost of measuring forest carbon sequestration. To lead to the trading of carbon credits under the T-VER project that is transparent and credible at the international level.

Thailand's commitment to forest development is further reflected in the 20-Year National Strategic Plan (2018–2037), which aims to increase the tree cover areas to 50 percent of the national territory. This means that Thailand would need to have an additional 11.29 million Rai (3) (around 2 million hectares) of Reserve Forests and other conservation areas, and 15.99 million Rai (around 2.5 million hectares) of plantation areas by 2037. To encourage private-sector engagement, the Ministry of Natural Resources and Environment has introduced policies and regulations to encourage private sector participation in forest restoration. Thailand deforestation rate is calculated as 0.37 percent annually. It is assumed that 50 percent of the area deforested is converted to productive cropland and the remaining 50 percent is assumed to be degraded, unproductive, and unused. To meet the target area by 2037,182,743 ha per year would be planted. Twenty percent of these newly planted forests will be used for commercial forestry purposes. The cost of restoration is assumed to be half that of afforestation and thus equal to $100/ha. It is assumed that the trees planted are harvestable by year 10 and reach maximum carbon storage at 15 years of age. (World Bank, 2024)

Funding trends further illustrate this shift, the Royal Forest Department receives most of its forest restoration budget from external sources, with only a small portion coming from the government. Between 2013 and 2024, a total of 214,731.89 hectares of forest were restored using government funds, while 159,034.94 hectares representing 74 percent of total restoration were funded by other sources. (RFD, 2025) This demonstrates a significant shift in financing from government-led restoration to private-sector–supported initiatives. Companies, especially those in high-emission sectors such as fossil fuels and cement, are increasingly interested in developing carbon credits to reduce pressure from their own emissions and improve their environmental reputation. This trend is driven by both emerging regulatory expectations despite the market being voluntary, a new climate change bill with potential carbon pricing is under discussion and growing market and societal demands for environmental responsibility. Carbon credits can be purchased by governments, companies, or individuals seeking to offset an equivalent amount of emissions or claim carbon neutrality.

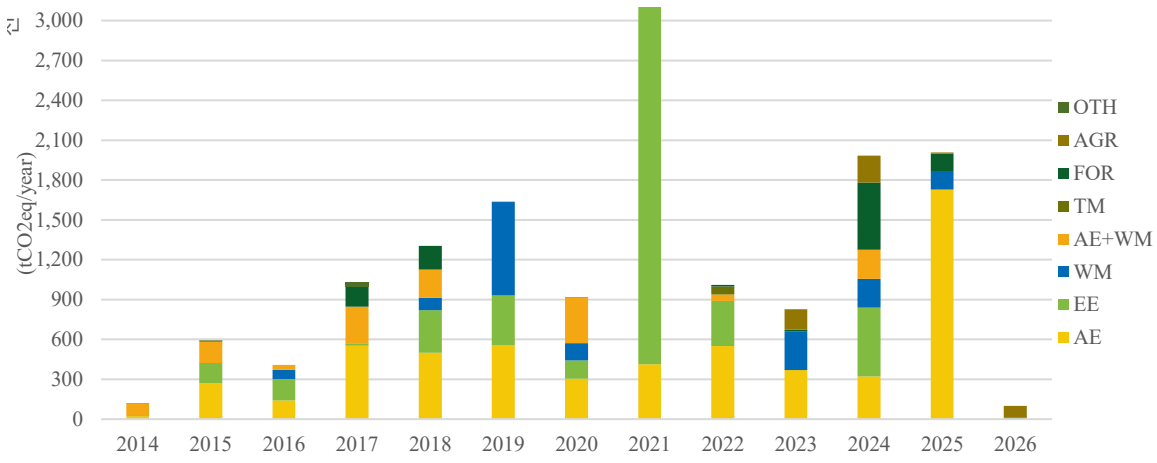

Figure 2: The amount of greenhouse gases expected to be reduced/stored by the T-VER project (tCO2eq/year)
Source: Thailand Greenhouse Gas Management Organization, Database and Statistics, 2025

Strengthening Forest Governance for Thailand's Climate and BCG Goals.

The Ministry of Natural Resources and Environment plays a central role in driving Thailand's climate agenda, overseeing both policy design and on-ground implementation to reduce emissions and enhance greenhouse gas absorption. A key focus is the promotion of nature-based solutions, including large-scale reforestation, forest restoration, and ecosystem conservation to strengthen natural carbon sinks. Thailand has recently accelerated its climate ambitions, advancing its net-zero emissions target from 2065 to 2050 and raising its NDC 3.0 target to a 47% emissions reduction by 2035 compared with 2019 levels.

To meet these heightened targets, Thailand recognizes the need for a strong legal foundation. In response, the Cabinet has already approved in principle a draft Climate Change Act. This legislation will become Thailand's first comprehensive climate law. One of the key aspects of the draft legislation is the introduction of carbon pricing mechanisms to encourage businesses to transition to new production and trade models that do not burden the environment. The tools being prepared for implementation include a Greenhouse Gas Emissions Trading System (ETS), a domestic carbon tax, cross-border carbon pricing measures using Carbon Border Adjustment Mechanism (CBAM) to align with EU standards, and a carbon credit system to promote projects for emission reduction and carbon sequestration. (Policy Watch, 2025)*.

Within this evolving policy landscape, the forest sector holds a critical role in advancing both the BCG model and Thailand's broader sustainability commitments. As the national strategy shifts from traditional forest restoration to forest-based carbon credit generation, the need for rigorous standards and alignment with international regulations has become increasingly important. Strong government support, combined with mechanisms that facilitate meaningful private-sector involvement, will be essential to ensuring that forest restoration and carbon market expansion progress in a credible and sustainable manner. Ultimately, the BCG model envisions a future in which forest conservation drives not only environmental protection but also high-value green economic growth.

By safeguarding and expanding forest resources, Thailand can enhance ecological resilience, strengthen community livelihoods, and build a more sustainable and inclusive economy for generations to come.

Figure 3: Bio Circular Green Economy Infographic
Source: The Government Public Relations Department of Thailand, 2023

*Policy Watch. (2025, December 6). Article. Retrieved from policywatch.thaipbs.or.th: https://policywatch.thaipbs.or.th/article/environment-154

CHALLENGES AND OPPORTUNITIES

As Thailand integrates forest restoration into its BCG strategy and accelerates progress toward Net Zero 2050, the forest sector is increasingly positioned at the center of carbon market development and green economic transformation. The expansion of T-VER standards, private-sector financing, and forthcoming climate legislation creates significant momentum. However, scaling forest-based carbon initiatives also introduces governance, integrity, and sustainability challenges that must be carefully managed.

The table below summarizes the key challenges and opportunities shaping Thailand's evolving forest–carbon landscape.

Challenges	Opportunities
• Ensuring carbon credit integrity, permanence, and alignment with emerging compliance mechanisms (ETS, carbon tax, CBAM).	• Strong national climate ambition (Net Zero 2050, enhanced NDC 3.0) supported by the draft Climate Change Act.
• High annual planting targets require sustained financing and institutional capacity.	• Growing private-sector demand for carbon credits, particularly from high-emission industries.
• **Risk of prioritizing commercial forestry over biodiversity and ecosystem resilience.**	• Clear forest expansion target (50% tree cover by 2037) under the 20-Year National Strategy.
• Heavy reliance on external funding may affect long-term financial sustainability and governance coherence.	• AI-powered digital MRV systems certified by TGO to improve transparency, efficiency, and international credibility.

CONCLUSION

Thailand's forestry sector is shifting from traditional restoration toward a carbon-driven, market-integrated green growth model under the BCG strategy and Net Zero 2050 commitment. With strengthened T-VER standards, emerging carbon pricing mechanisms, and AI-based MRV systems, forests are increasingly positioned as both climate infrastructure and economic assets.

Moving forward, ensuring carbon integrity, biodiversity safeguards, and alignment between voluntary and future compliance markets will be critical. If governance and accountability mechanisms are strengthened, Thailand's forest sector can play a central role in advancing credible climate action while supporting sustainable economic transformation.

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Asian Forest Cooperation Organization

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