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# Enhancing forest sector participation in carbon markets – lessons from overseas



Review

## Options for Forest Sector Participation in International Carbon Markets: Unlocking the Carbon Market Potential of Australia's Forest Sector

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**Abstract:** Carbon markets have emerged as a central component of international climate change policies. Within these markets, forest carbon offset projects have become a key nature-based solution due to their low cost, large scale, and co-benefits. However, despite Australia's vast forest estate, forest sector-specific offsets remain nascent in the Australian Carbon Market, the ACCU Scheme. Only 3.27% of Australian Carbon Credit Units have been issued to forest sector projects. This limited participation can be attributed to several constraints within the ACCU Scheme, principally the limited number of methods available for the forest sector to engage in. As a result, less than 1% of Australia's current forest estate, both plantation and native forests, is considered eligible to participate in the ACCU Scheme. This limited eligibility is further compounded by the complexity and cost of participation, which act as significant barriers for forest projects within the ACCU Scheme. This paper explores the potential to expand forest sector involvement in the Australian carbon market through a comprehensive literature review of forest sector involvement in international carbon markets. The review found extensive participation by the forest sector in international carbon markets, with various methods available across 20 markets, including the largest voluntary and compliance markets. These methods cover plantation forests, native forests, the bioeconomy, and the built environment. Key results indicate that revising existing methods, developing new ones through the ACCU Scheme's proponent-led method development process, and increasing participation in international voluntary methods could significantly expand the types of forest sector projects contributing to emissions reductions through carbon markets. Broader conclusions suggest that by embracing lessons from international practises and addressing current methodological constraints, Australia can realise this potential. Doing so would not only bolster the nation's climate change mitigation efforts, but also unlock the co-benefits of biodiversity, water quality, soil productivity, and ecosystem resilience, ultimately contributing to a sustainable and resilient bioeconomy.

**Keywords:** forest offsets; climate change; Australian Carbon Credit Units Scheme; carbon credits and forests



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**1. Introduction**

The Earth's climate has warmed by at least 1.25 °C since the Industrial Revolution [1], a trend that is expected to continue [2]. This warming is attributable to the increase in

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# Rationale



“Photosynthesis is the only known technology we have to remove carbon from the atmosphere” (Chubb, 2023).



Australia has a vast forest estate of 131,000 ha. With significant afforestation potential.



“How forests and their products are managed, impacts the carbon balance” (Raison, 2025).



The forest sector has participated in Australia’s carbon market or crediting mechanism since the beginning.



Participation remains low relative to its potential. 3.27% of ACCUs on issue were to forest sector projects.

| Method                                                                                                                                                                             | Current or Historic Method | Number of Projects | Total ACCUs Issued | Portion of Total ACCUs (%) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------|--------------------|----------------------------|
| Designated Verified Carbon Standard Projects Methodology Determination 2015                                                                                                        | Historic                   | 3                  | 867,861            | 0.62                       |
| Plantation Forestry Methodology Determination 2017                                                                                                                                 | Historic                   | 35                 | 279,768            | 0.20                       |
| Plantation Forestry Methodology Determination 2022                                                                                                                                 | Current                    | 60                 | 4967               | 0.00                       |
| Reforestation and Afforestation 2.0 Methodology Determination 2015                                                                                                                 | Current                    | 4                  | -                  | 0.00                       |
| Measurement Based Methods for New Farm Forestry Plantations Methodology Determination 2014                                                                                         | Historic                   | 3                  | 409,017            | 0.29                       |
| Reforestation and Afforestation—1.2 Methodology Determination 2013                                                                                                                 | Historic                   | 11                 | 531,721            | 0.38                       |
| Reforestation and Afforestation Methodology Determination 2013                                                                                                                     | Historic                   | 4                  | 381,073            | 0.27                       |
| Reforestation by Environmental or Mallee Plantings (REMP)—FullCAM Methodology Determination 2014                                                                                   | Current                    | 190                | 2,067,733          | 1.47                       |
| REMP-FullCAM Methodology Determination 2014 (Compilation No. 2)                                                                                                                    | Historic                   | 7                  | -                  | 0.00                       |
| Carbon Farming (Quantifying Carbon Sequestration by Permanent Environmental Plantings of Native Species using the CFI Reforestation Modelling Tool) Methodology Determination 2012 | Historic                   | 47                 | 40,854             | 0.03                       |
| Total forest sector methods                                                                                                                                                        |                            | 374                | 4,582,994          | 3.27                       |
| Total all methods                                                                                                                                                                  |                            | 2048               | 140,364,685        | 100                        |

A background image showing a close-up of several wooden planks stacked horizontally, displaying various wood grain patterns and textures in shades of brown and tan.

# What factors contribute to the low level of participation?



Limited eligibility, combined with the complexity and expense of participation, serves as substantial obstacles for forest projects within the ACCU Scheme.



## Reviews

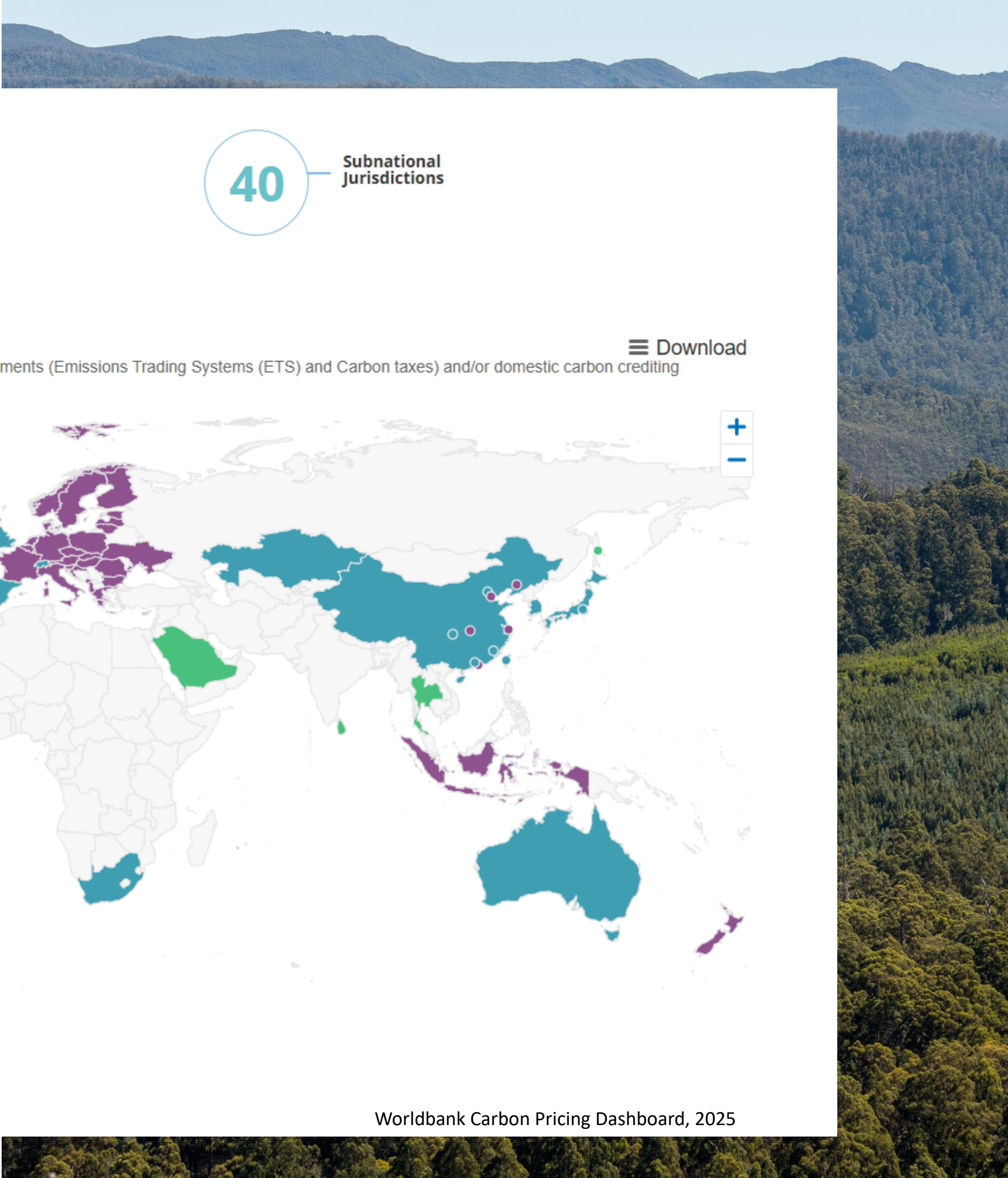
- 2020 - Expert Panel Report Examining Additional Sources of Low Cost Abatement – King Review.
- 2022 - Independent Review of Australian Carbon Credit Units – Chubb Review.
- 2019 - Guidelines for Production Forest Methodologies for the Emissions Reduction Fund, Forest Wood Products Australia, Ximenes and Smith.
- 2020 - Climate Change and Carbon Policy Assessment Report; produced for the North-North West Tasmania Regional Forestry Hub - Keenan, Ryan, and Stewart.
- 2024 - Tasmanian forests and the carbon market: opportunities and barriers - Tasmania Policy Exchange.



## Key insights

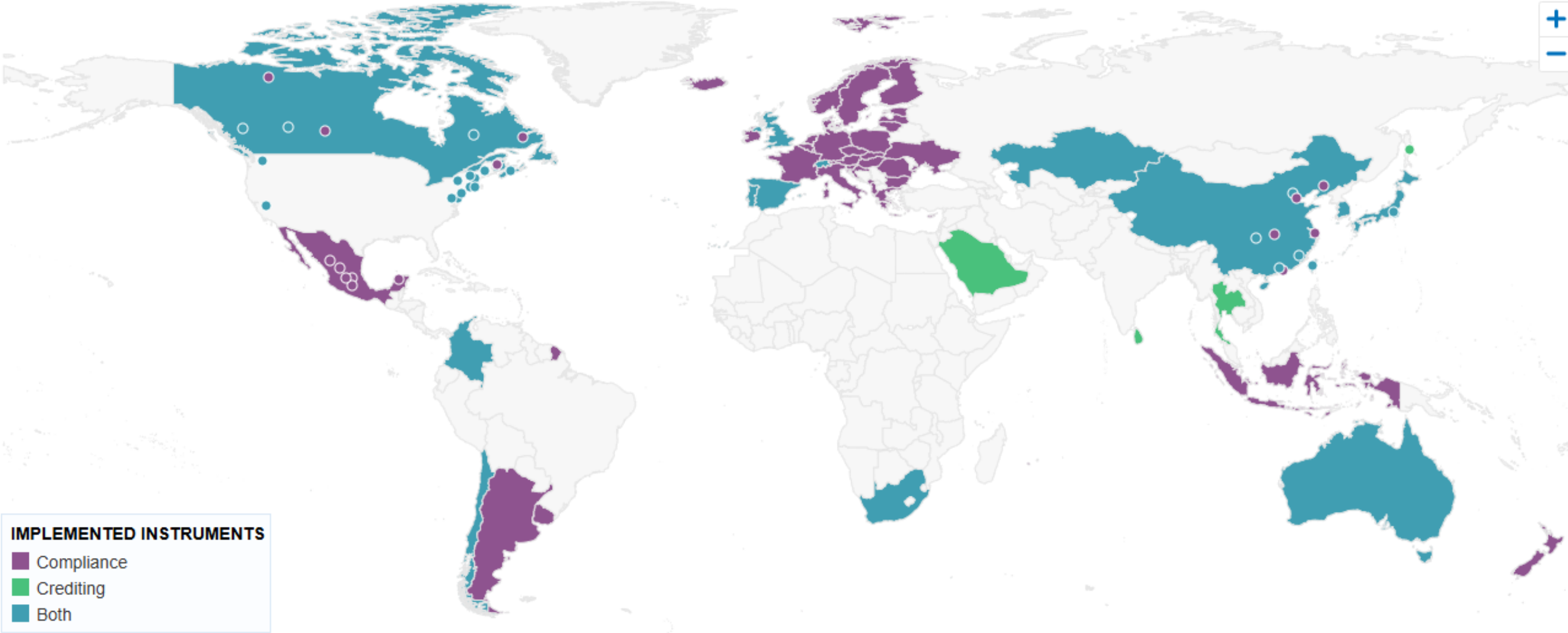
- Insufficient number of methodologies available
- Limitations within current methods.
- High costs associated with conceptualisation, registration, and auditing.
- Alternative assurance methods would reduce costs.
- Revenue realisation occurs significantly after expenses
- Method stacking is required.
- FullCAM model parametrisation is incorrect in certain instances.
- Mismatch between mechanisms and policy. Mechanisms are backward looking. Policy is forward looking.

# International markets



## Carbon pricing instruments around the world, 2024

Map shows jurisdictions that have implemented Direct Carbon Pricing Instruments - Compliance instruments (Emissions Trading Systems (ETS) and Carbon taxes) and/or domestic carbon crediting mechanisms, subject to any filters applied. The year can be adjusted using the slider below the map.



# International markets and the forest sector



Twenty carbon markets had forest sector methods



**TVER**

โครงการลดก๊าซเรือนกระจกภาคสมัครใจตามมาตรฐานของประเทศไทย



British Columbia Greenhouse Gas Offset Protocol

Saitama Target Setting Emissions Trading System

Canada's Greenhouse Gas Offset Credit System



**New Zealand Emissions Trading Scheme**

Top five voluntary markets



Top three compliance markets



South Korean ETS



Top five voluntary markets by credits issued



Three compliance markets



Specifically:

- Forest carbon offsets represented 17% of total offsets in global compliance markets as of 2017. >30% in voluntary registries in 2023.
- South Korea ETS, had 50% of its projects being from the forest sector.
- California Compliance Offset Program, forest offset credits account for 85% of all carbon credits issued, to 2022.

# Forest sector methods in these markets



## Afforestation and reforestation

Planted for production or conservation



## Conservation

- Biggest impact on old growth
- Leakage must be calculated.



## Restoration

- Planting or thinning



## Forest protection or avoided conversion

- Conservation and production, all forest types



## Thinning

- Production or ecological driven.
- Although thinning initially reduces forest carbon stock, it can stimulate compensatory growth for a medium to long term positive carbon outcome. Especially if the biomass is utilised.



## Agroforestry



## Biomass utilisation

Bioenergy (substitution) and biochar (long term storage).



## Bioenergy carbon capture and storage

Burning biomass for energy and storing emissions underground.



## Bio-based construction materials

Storage and substitution benefits



## Improved/integrated forest management

- 11 markets.
- Integrating a range of activities into the one project: conservation, restoration, rotation management, product management – longer lived, etc.
- Empowers the forest or supply chain manager to optimise for carbon.

# Forest sector methods in these markets



## Compliance

Supervision and law enforcement to support the protection and security of forest.



## Social forestry



## Fire management

Fire management mitigation activities that prevent fire in the East Miombo ecoregion of Africa



## Urban forestry

Thinning of diseased and suppressed trees; avoided tree removal; planting additional trees; avoiding premature mortality



## Wood vault

Terrestrial storage of biomass: burying woody biomass under conditions that inhibit biomass decomposition and can maintain those conditions for containment of the stored carbon for at least 100 years.

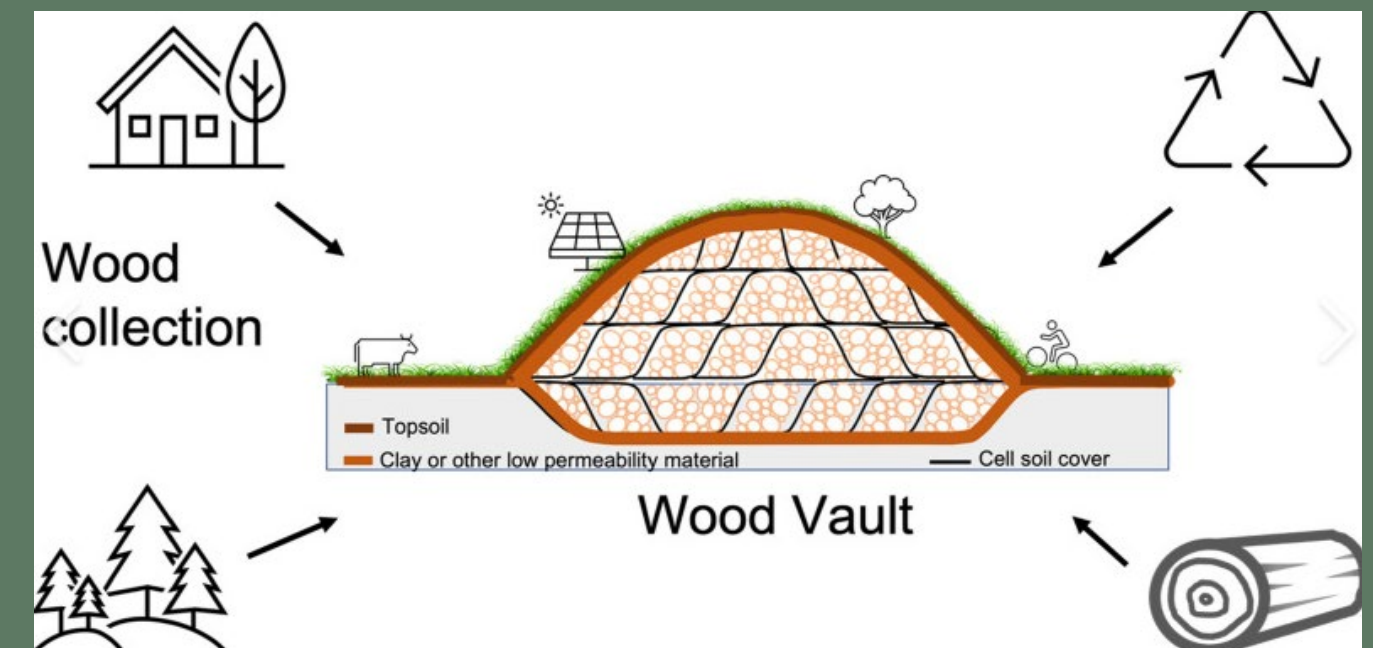
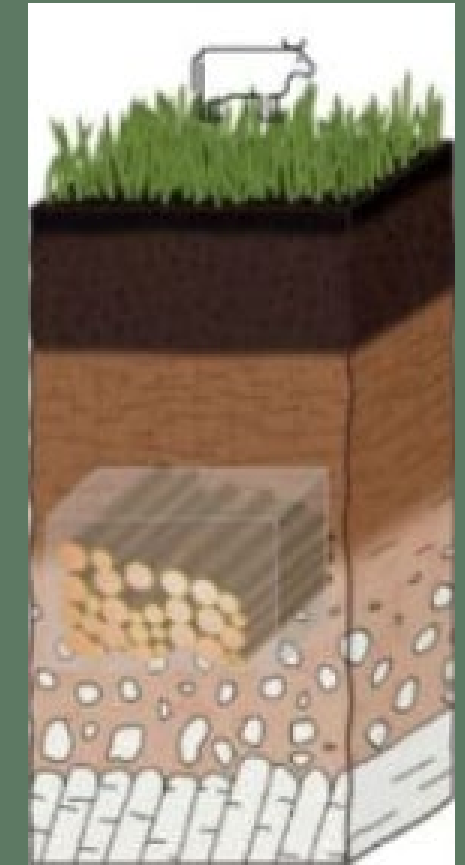


## No methods for:

- Genetics
- Preparing for future climate



[www.carboncredits.com](http://www.carboncredits.com)



[www.euroemc.org](http://www.euroemc.org)

A photograph of a forest with many thin tree trunks. A semi-transparent green rectangular box is overlaid on the left side of the image, containing the word 'Recommendations' in white serif font.

# Recommendations



## Government

- Better resource proponent led method development process.
- Have a separate process to seek adjustments to existing methods.
- Have a mechanism to review the non-legislative instruments such as FullCAM guidelines.
- Continue to explore alternative assurance methods – audit a sample of projects, auditing from aerial imagery or relying on forest certification.
- Review the reviews – how is recommendation implementation going?



## Academia

- Investing in research and development to understand the climate implications of various forest management activities.
- Research and development into new methods and adjustment to existing methods.
- Creation of a forest carbon (market) center of excellence.



## Forest sector

- Further engagement in the proponent led method development.
- Establish clear guidelines and support systems for forest owners and managers to navigate the carbon markets.
- Increase participation in international voluntary methods.

