

Policy Brief

Leading the Way in Building a High-Integrity Carbon Market Framework: The Case of Brunei's Belait Swamp Forest

Key Issues:

- Carbon markets can support **Brunei Vision 2035** if designed as a complementary policy instrument that strengthens conservation outcomes, community resilience, and institutional capacity, rather than substituting for existing peat swamp forest management frameworks.
- High-integrity carbon credits require more than carbon accounting alone. Robust data systems, conservative baselines, permanence safeguards, and effective leakage management are essential – particularly for peatland-based projects.
- Brunei's strong forest protection regime is both an advantage and a constraint. Demonstrating additionality will require careful baseline design, but strong cross-sectoral governance can underpin premium pricing and long-term investor confidence.
- People-centred safeguards are critical for credibility and durability. Transparent benefit-sharing arrangements, Free, Prior, and Informed Consent (FPIC), and meaningful community participation are central to sustaining climate and development outcomes.
- A phased institutional roadmap can reduce risk. Gradual progression from carbon inventory readiness to initial credit issuance would allow Brunei to build technical and governance capacity while managing market and implementation risks.

Brunei Darussalam has a strategic opportunity to align climate action with long-term ecological stewardship and economic diversification through the development of a high-integrity forest carbon market. With extensive intact forest cover, strong state-led governance, and globally significant peatland ecosystems, Brunei is well positioned to pursue carbon finance as a complementary policy instrument to support its nationally determined contribution objectives under the Paris Agreement.

This policy brief examines the technical, institutional, and governance foundations required to establish a credible forest carbon market in Brunei Darussalam, with a particular focus on peatland-based carbon projects. It underscores the importance of robust data systems, conservative baselines, and comprehensive risk management to ensure environmental integrity. The brief also assesses social and environmental safeguards, benefit-sharing mechanisms, and market-positioning strategies, including participation in voluntary carbon markets and potential engagement under Article 6 cooperative approaches.

The analysis finds that while Brunei's strong legal protections for forests pose challenges for demonstrating additionality, they also provide a solid foundation for generating premium, high-integrity carbon credits if carbon market mechanisms are used to support enhanced conservation, monitoring, and restoration activities. By embedding rights-based safeguards, transparent governance arrangements, and long-term stewardship frameworks, Brunei can position itself as a regional model for people-centred, high-quality forest carbon finance.

1. Strategic Context: Peat Swamp Forests and Carbon Market Vision

Brunei Darussalam stands at a pivotal juncture in its development trajectory as it seeks to balance economic diversification, environmental stewardship, and international climate commitments. Forest ecosystems – particularly peat swamp forests – play a central role in this transition. They deliver critical climate regulation, biodiversity conservation, and ecosystem services, while contributing to Brunei's nationally determined contribution (NDC), including a target to reduce greenhouse gas emissions by 20% by 2030.

Carbon markets offer a potential pathway to mobilise long-term finance for forest conservation and restoration while reinforcing national climate objectives. International experience, however, demonstrates that poorly designed carbon projects can undermine environmental integrity, erode public trust, and generate limited local benefits. In Brunei's context, carbon market initiatives must therefore be firmly anchored in national priorities, including the establishment of robust forest inventories, clear institutional arrangements, and sensitivity to social and governance realities.

This policy brief adopts a people-centred, state-led framing, recognising that forests and peatlands are held under state stewardship and that local communities are active partners in conservation rather than passive beneficiaries. Forest carbon markets and climate finance should be treated as enabling mechanisms – supporting enhanced governance, monitoring, and sustainable livelihoods – rather than as substitutes for existing forest protection and management regimes

2. Technical Foundations: Data and Carbon Accounting Readiness

Credible carbon markets depend on accurate, transparent, and verifiable data. Brunei's National Forest Resource Inventory currently relies largely on

Tier 1 Intergovernmental Panel on Climate Change (IPCC) methodologies, which use global default values and are appropriate for national greenhouse gas reporting. However, participation in voluntary carbon markets requires progression to Tier 2 or Tier 3 approaches, based on locally calibrated emission factors, higher-resolution monitoring, and repeated measurements over time.

This transition is particularly important for peatland ecosystems. In the Belait Peat Swamp Forest, peat soils account for the majority of total ecosystem carbon stocks. Estimates suggest total carbon stocks of approximately 2,665.83 tCO₂e per hectare, of which around 1,545.50 tCO₂e are stored below ground. Without robust peat depth, bulk density, and carbon content data, uncertainty remains high, limiting crediting potential and increasing buffer requirements.

Closing data gaps in belowground biomass, deadwood, and peat soil carbon should therefore be treated as a priority investment. Enhanced data systems not only improve credit integrity but also strengthen national forest management and climate reporting capacity.

3. Demonstrating Climate Benefits: Additionality, Permanence, and Leakage

3.1. Additionality in a Low-Deforestation Context

Carbon credits are issued based on demonstrated emission reductions or removals relative to a defined baseline, not on total stored carbon. In Brunei, where forests benefit from strong protection and historically low deforestation rates, demonstrating additionality presents a methodological challenge.

To address this, carbon projects must extend benefits beyond the project boundary to demonstrate that carbon finance delivers social outcomes beyond business-as-usual governance. This may include enhanced monitoring and enforcement capacity, community-based conservation programmes, peatland restoration interventions, or climate adaptation measures that would not be implemented at scale without carbon revenues. Carefully constructed baselines are therefore essential to ensure credibility while recognising Brunei's conservation achievements.

3.2. Permanence and Long-Term Stewardship

Permanence – the durability of carbon storage over time – is a core concern for peatland-based projects. Risks include fire, drought, drainage, and land-use change. International standards such as the Verified Carbon Standard (VCS) and the Architecture for REDD+ Transactions (ART) require multiple safeguards to manage these risks.

Typical mechanisms include buffer pools, where 10–20% of credits are withheld as insurance against reversals; long-term stewardship agreements extending beyond the crediting period; climate-resilient management practices; and comprehensive monitoring systems. In Brunei, state ownership and centralised governance provide an institutional advantage in implementing long-term permanence safeguards.

3.3. Managing Leakage Risks

Leakage occurs when emission reductions in one area lead to increased emissions elsewhere. While Brunei's compact geography reduces certain leakage risks, displacement of activities to adjacent areas remains a concern. Integrated

land-use planning, cross-agency coordination, and national-level monitoring can mitigate these risks. Brunei's centralised governance structure is well suited to managing leakage through coordinated policy instruments rather than project-level measures alone.

4. Environmental and Social Safeguards

Environmental and social integrity are increasingly decisive factors for market access and pricing. Premium buyers in voluntary carbon markets seek projects that demonstrate robust safeguards, transparent governance, and measurable local benefits.

Transparent benefit-sharing arrangements are critical for legitimacy and long-term sustainability. A structured allocation framework could include:

- 40% for direct community benefits (livelihoods, infrastructure, education, healthcare)
- 30% reinvested in conservation and restoration activities
- 20% for institutional capacity building
- 10% for national climate and development priorities

These allocations should be overseen by multi-stakeholder governance bodies with community representation and clear accountability mechanisms.

All project activities should be developed through transparent and inclusive consultation processes with affected communities. FPIC processes must be culturally appropriate, and allow adequate time for deliberation. Communities should retain the right to withhold consent or negotiate project terms, and customary land uses must be documented and protected.

5. Financial Viability and Market Positioning

Under conservative assumptions, financial modelling suggests that a peatland-based carbon initiative could generate approximately US\$168 million over its lifetime, with annual revenues of around US\$5.6 million and an initial issuance target of approximately 359,000 tCO₂e by 2030. While modest relative to hydrocarbon revenues, these funds can provide stable, long-term financing for conservation and capacity building.

Market volatility in the voluntary carbon market underscores the importance of differentiation through high integrity. Brunei is well positioned to pursue a dual-track strategy:

- **Voluntary Carbon Markets**, targeting premium buyers seeking high-quality, nature-based solutions; and
- **Article 6 Cooperative Approaches**, exploring bilateral agreements that may offer capacity-building support and strategic partnerships.

6. Institutional Roadmap and Governance Arrangements

A phased institutional roadmap can reduce implementation risk:

- **Foundation Phase (2026–2027)**: Data system upgrades, Tier 2/3 inventory development, governance framework establishment, safeguard protocols, and early market engagement.
- **Implementation Phase (2028–2030)**: First credit issuance, expanded monitoring, strengthened community engagement, and evaluation of Article 6 opportunities.

- **Operational Phase (2031–2055):** Consolidation of a sustainable national financing mechanism and potential expansion to additional ecosystems.

Clear institutional mandates are essential. A designated National Carbon Market Authority or an equivalent body should serve as project proponent, supported by a multi-stakeholder steering committee and a comprehensive regulatory framework addressing carbon rights, revenue management, safeguards, and grievance mechanisms.

Policy Recommendations

1. Invest in robust forest and peatland data systems.

Strengthen Tier 2/3 forest and peatland carbon accounting systems to reduce uncertainty and support high-integrity crediting. This should include a comprehensive national forest carbon inventory covering both above-ground and below-ground biomass to ensure technical credibility, transparency, and international acceptance.

2. Strengthen institutional capacity for measurement, reporting, and verification (MRV).

Build dedicated institutional capabilities for MRV, including inter-agency coordination, technical training, and quality assurance mechanisms, to underpin credible project approval, monitoring, and oversight.

3. Adopt conservative baselines and rigorous additionality tests.

Tailor baseline methodologies to Brunei's low-deforestation context and embed strong permanence safeguards through buffer pools, long-term stewardship arrangements, and climate-resilient forest and peatland management practices.

4. Pursue a phased and governance-first market entry strategy.

Prioritise quality, integrity, and regulatory clarity over rapid scaling. Strengthen legal frameworks governing carbon rights, benefit-sharing, and revenue management to attract responsible investors and maintain public trust in carbon market participation.

Conclusion

Brunei Darussalam has the opportunity to develop a forest carbon market that reflects its national values, institutional strengths, and ecological significance. By prioritising high-integrity standards, people-centred safeguards, and transparent governance, carbon finance can support conservation, community resilience, and economic diversification without compromising environmental credibility.

With careful design and phased implementation, Brunei can position itself as a regional leader in people-centred, high-integrity carbon finance – contributing meaningfully to global climate goals while safeguarding its forests for future generations.

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