CLIMATEFOCUS

Standards for Results-Based REDD+ Finance

Overview and Design Parameters

Charlotte Streck and John Costenbader

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1. Introduction: Results-Based REDD+ Finance

Results-based finance for reduced emissions from deforestation and forest degradation[1] (REDD+) links payments to greenhouse gas (GHG) emission reductions and enhancements in forest carbon stocks. In December 2011, at the 17th session of the Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC) in Durban, parties agreed that "*results-based finance provided to developing country parties that is new, additional and predictable may come from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources*" and that "*appropriate market-based approaches [. . .] to support results-based actions by developing countries*" could be developed.[2] Parties also adopted guidance on reference emission levels and/or reference levels to establish benchmarks that would serve to account for emission reductions from REDD+ activities.[3] While it remains unclear if and how these reference levels might be tied to 'results-based' payments in the future, consensus has emerged that international finance would be linked to concrete results in achieving climate benefits through REDD+.

Programs or mechanisms that rely on results-based payments provide financial incentives and disburse resources against demonstrated and independently verified results that are largely within the control of the recipient. In the context of climate policy, results-based finance leverages private and public investment into activities that reduce GHG emissions and promote carbon removals. The credibility and acceptance of results-based finance frameworks depend on the rigor of the applied measurement methodologies, the conservativeness of the baseline scenario, and the transparency of the crediting scheme.

The standardization of measurement and accounting systems ensures the comparability of mitigation benefits achieved through REDD+. If the system is credible and results in real and measurable GHG emission reductions, it could eventually become market-compatible and issue compliance-grade carbon credits. Current standards that formulate guidance for the measurement and verification of climate benefits provide the basis for REDD+ projects that generate carbon credits for the voluntary carbon market. Results-based finance schemes are therefore both a first step towards REDD+ markets as well as an integral part of any carbon market standard. At the same time, they can persist without ever being linked to carbon markets.

Today, in the absence of international modalities and procedures for REDD+ finance and without any operational - not to mention sufficiently liquid - carbon market for REDD+, various voluntary designs, standards, and methodologies for RED[4]/REDD+ results-based frameworks are competing for market acceptance and investors. Consequently, these standards are emerging in a fragmented and abundant fashion. Nonetheless, their different approaches and rules provide an empirical basis—through broad experimentation and demonstration—for future rule setting.

While learning and piloting remains an important feature of REDD+ finance, the eventual convergence on common standards and methodologies will create a more efficient, fungible marketplace for verified emission reductions and carbon removals from REDD+ and allow forest countries to build single systems that can

1 The full reference to REDD+ includes not only the reduction of emissions from deforestation and forest degradation, but also the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.
2 UNFCCC (2011). Decision 2/CP.17. Par. 66. U.N. Doc. FCCC/CP/2011/9/Add.1. (15 Mar 2012).
3 UNFCCC (2011). Decision 12/CP.17 U.N. Doc. FCCC/CP/2011/9/Add.2 (15 Mar 2012).
4 RED limits the eligible activities to reduced emissions from deforestation or, in other terms, avoided deforestation.

access multiple sources of public and private finance. Building early linkages can help to rationalize the number of standards and methodologies that are ultimately available—as communities learn together what works and what does not—and catalyze convergence in effective directions.

The objective of this paper, the first in a series of analytical papers to evaluate the design features of various results-based standards, protocols and methodologies, is to give an initial overview of existing and emerging REDD+ frameworks for results-based finance. The paper will summarize the most important standards that channel results-based payments to REDD+. It will begin by clarifying the terminology used in the context of voluntary and other REDD+ standards. The next section will provide an overview of the most important results-based REDD+ financing standards. An annex summarizes each initiative or organization's objective and background, and to the extent available, guidance or standards for main design elements. As relevant and appropriate, the paper introduces design elements such as scope and scale, reference levels, safeguards, leakage, permanence, additionality, registries, as well as measurement, reporting and verification. These design elements are vital for REDD+ to create effective and rigorous programs to reduce emissions and enhance carbon removals. This introduction into REDD+ standards sets out to identify central commonalities and differences so that stakeholders may promote rapid learning for REDD+ and implement no-regrets REDD+ activities.

2. Terms, Definitions and Acronyms

For our analysis we divide REDD+ initiatives and standards into specific categories. These include: international and national, regulated and voluntary, bilateral and multilateral initiatives, and other initiatives that do not fit neatly into a category. We define 'standards' as a set of specific criteria, requirements or rules that are set to attain a level of quality or attainment. In the context of results-based finance, standards often regulate the eligibility of projects or programs, define required methodologies and protocols for the measurement of GHG emission reductions and removals, and establish the criteria for verification, issuance, and transfer of carbon credits. Standards often also formulate important enabling program elements (e.g. validator/verifier accreditation frameworks, buffer reserves and registries), principles for the application of methodologies and guidance on how to interpret and apply the various rules. Standards often define a set of mandatory rules and requirements. Examples of standards that define criteria for results-based REDD+ finance are the Verified Carbon Standard, the American Carbon Registry and the Climate Action Reserve. Some standards, in particular those that are embedded in a broader legislative context, such as the Kyoto Protocol's Joint Implementation or Clean Development Mechanism, come with modalities and procedures that define additional program rules, such as the accreditation of verifiers or the establishment of emissions inventories or trading registries.

'Methodologies' (also referred to as 'protocols') define a system of technical procedures for accomplishing a predetermined result. In the context of results-based finance frameworks, methodologies serve to establish baseline emission scenarios and calculate emission reductions or removals. Methodologies include rules and equations for estimating emissions and measuring emission reductions, assessing historical data or business-as-usual projections to construct baselines, and developing monitoring plans to account for emissions, emission reductions, and leakage. Methodologies are often complemented by 'tools' that set out procedures for specific tasks or 'modules', which are independent building blocks of more complex methodologies. 'Guidelines' (or 'Guidance') provide non-mandatory advice on the interpretation and application of a standard. Guidelines help the user to apply standards to the concrete project or program case. Although non-binding, they often contain valuable background information on a standard that is essential to prepare the required project documents.

Climate policy in general, and carbon standards in particular, use a highly specific technical jargon that creates barriers to the understanding, selection, and use of standards and protocols. To reduce confusion, we have prepared a glossary that explains the most important standard design elements (Table 1) and a list of the most relevant acronyms used in this paper (Table 2).

Table 1: Glossary of design elements

Element	Definition
Additionality	Additionality is the requirement that a REDD+ activity or project should generate benefits, such as reduced emissions or increased removals, that would not have happened without the activity (i.e. the business-as-usual scenario).
Co-benefits	Benefits arising from REDD+ in addition to climate mitigation benefits, such as enhancing biodiversity, enhancing adaptation to climate change, alleviating poverty, improving local livelihoods, improving forest governance and protecting rights.
Leakage	Leakage refers to changes in emissions and removals of GHGs outside the accounting system that result from activities that cause changes within the boundary of the accounting system. The official UNFCCC term is 'displaced emissions'.
MRV	Measurement, reporting and verification are essential for the transparency and credibility of GHG climate benefits. An adequate MRV system is built on protocols and methodologies, technical infrastructure and human capacities.
Nesting	A 'nested' accounting system reconciles projects within a larger jurisdictional boundary such as a state/province system, or a province or state-level program with a national REDD+ program.
Reference level/ baseline	A reference level, expressed in tons of carbon dioxide equivalent per year, serves as a benchmark for performance of implemented activities. Reference levels can be implemented at national, subnational, or project scales. Project-specific reference levels are often referred to as 'baselines.'
Permanence	Permanence refers to the longevity of a carbon pool and the stability of its stocks, given the management and disturbance environment in which it occurs. The risk of non-permanence describes the possibility of reversing climate benefits through the loss of forest carbon biomass.
Registry	A REDD+ registry is a tool that helps to transparently account for GHG emissions and removals. Where linked to carbon trading programs, a registry can also provide an infrastructure for the tracking and trading of carbon credits and allowances.
Safeguard	Safeguards define criteria to prevent and mitigate undue harm in the process of implementing a project, program or policy. Safeguards may also provide operational guidelines in the identification, preparation, and implementation of programs and projects. Strategic assessments of environmental and social implications help to design effective and equitable policies.
Scale	Scale describes the territorial and/or jurisdictional reference points of a particular standard or program (national, subnational, program or project-level).
Scope	The scope of REDD+ describes the activities or land use categories that are included in a REDD+ program, for example deforestation (only), deforestation and forest degradation, and/or afforestation/reforestation.

Table 2: Acronyms

Acronym	Name	Acronym	Name
ACCU	Australian Carbon Credit Units	JI	Joint Implementation
ACR	American Carbon Registry	J-VER Scheme	Japanese Offsetting Credit (J-VER) Scheme
AFOLU	Agriculture, forestry and other land-use	LCDS	Low Carbon Development Strategy (Guayana)
ALM	Agricultural Land Management	LULUCF	Land use, Land-Use Change, and Forestry
ARB	Air Resources Board (USA/CA)	MRV	Measurement, Reporting, Verification
A/R	Afforestation/ Reforestation	NCOS	National Carbon Offset Standard (AUS)
ARR	Afforestation, Reforestation and Revegetation	NICFI	Norway's International Climate and Forests Initiative
BAU	Business as usual	NZU(R)	New Zealand Emission Unit (Register)
BNDES	Brazilian development bank (Banco Nacional do Desenvolvimento)	RMU	Removal Unit (Kyoto Protocol)
BOCM	Bilateral Offset Crediting Mechanism (Japan)	PFSI	Permanent Forest Sink Initiative (NZ)
CAR	California Action Reserve	PRC	Peat Rewetting and Conservation
CDM	Clean Development Mechanism	PVCs	Plan Vivo Certificates
CCB(A)	Climate, Community & Biodiversity (Alliance)	REDD	Reduced Emissions from Deforestation and forest Degradation
CCX	Chicago Climate Exchange	REDD+	REDD and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks
CER	Certified Emission Reduction (CDM)	REDD+ SES	REDD+ Social and Environmental Standards
CFI	Australian Carbon Farming Initiative	RGGI	Regional Greenhouse Gas Initiative (USA, North East)
CRT	Climate Reserve Tonnes (CAR)	REL/RL	Reference Emissions Level/ Reference Level
COATS	CO2 Allowance Tracking System	RMUs	Removal Units (relevant for JI)
ERT	Emission Reduction Tons (ACR)	SFM	Sustainable Forest Management
ERU	Emission Reduction Unit (JI)	tCER	temporary CER (CDM A/R)
ETS	Emission Trading System	UNDP	United Nations Development Programme
FAO	UN Food and Agricultural Organisation	UNEP	United Nations Environmental Programme
FCPF	Forest Carbon Partnership Facility	UNFCCC	United Nations Framework Convention on Climate Change
FSC	Forest Stewardship Council	VCS	Verified Carbon Standard
GRIF	Guyana REDD+ Investment Fund	VCU	Verified Carbon Unit (VCS)
IFM	Improved Forest Management	VVB	Validation/Verification Body
JNR	VCS Jurisdictional and Nested REDD+	WRC	Wetlands Restoration and Conservation

3. A Comparative Analysis of REDD+ Initiatives and Standards

Standards for results-based REDD+ finance occupy different niches and pursue different objectives, which complicates the comparison of the design elements of various standards. Compliance instruments, such as the project-based mechanisms defined under the Kyoto Protocol, and some voluntary market standards, such as Verified Carbon Standard or the American Carbon Registry, seek above all to enable the creation of rigorous, high-integrity, fungible carbon offsets. Other standards may place heavier emphasis on co-benefits and a simplified approach to producing credits. Bilateral and multilateral initiatives often have the goal of piloting results-based REDD+ projects at larger scales in anticipation of a future UNFCCC REDD+ mechanism. These latter initiatives usually do not have defined 'standards' that must be met, instead they conclude agreements which link payments to a specific set of results. Funds that pilot results-based payments for REDD+, such as the World Bank's Forest Carbon Partnership Facility, may either define their own requirements for results-based payments or demand compliance with a private[5] standard.

Results-based REDD+ initiatives also differ in their scale and scope. The scale of REDD+ initiatives determines whether a standard applies to a jurisdiction, such as an entire country, federal state or administrative region, or whether it applies to an area defined by project boundaries. While national approaches are per definition implemented at a jurisdictional (i.e. national) level, subnational approaches can refer to a project- or program-level, or to a subnational jurisdiction. REDD+ initiatives are often also limited in their geographical eligibility (regional standards) or contractually limited to a particular region (bilateral initiatives).

The scope of a REDD+ program refers to the types of activities that are included in the system. There are five categories of activities that might be included in a REDD+ initiative: (1) emissions reductions from reduced deforestation (RED or avoided deforestation); (2) emissions reductions from reduced forest degradation; (3) forest carbon enhancement through regeneration, restoration, and tree plantations (afforestation and reforestation); (4) emissions reductions through improved forest management; and finally (5) forest conservation. Most project-level and voluntary carbon market standards exclude forest conservation from the scope of eligible activities; some also exclude degradation and forest management activities that are more costly to measure than avoided deforestation or forestation. Conservation activities are generally emission neutral as they preserve a status quo; such activities would only qualify if the forest within the boundaries of the activity is under threat, in which case a conservation project would fall under avoided deforestation or degradation.

The annex to this report includes a description of the most important results-based REDD+ initiatives and standards. Table 3 below summarizes and categorizes the information of the annex according to scale and scope, environmental and economic characteristics of the reviewed standards and results-based REDD+ initiatives. For this purpose REDD+ initiatives and standards are divided into the specific categories of international, national and regional compliance markets, voluntary markets and voluntary co-benefit standards, multilateral and bilateral initiatives, and other initiatives that do not fit neatly into a category. It is important to note that this list is neither complete nor exhaustive. This report's analysis is limited to information that is publicly available and to initiatives that have both defined criteria for GHG verification or

5 Private standards include those managed by for-profit or non-for-profit entities.

results-based payments and significant market share. Some standards require the execution of a confidentiality agreement before disclosing their standard documents (e.g. the Brazilian Mata Viva standard). Limited information is also available for initiatives based on bilateral agreements, such as the cooperation of Norway with Indonesia. The German 'REDD+ Early Movers' and the Japanese Bilateral Offset Crediting Mechanism are examples of more recent initiatives that pioneer results-based payments founded on bilateral agreements with limited information publicly available on eligibility criteria and standard requirements. Furthermore, a number of these bilateral initiatives may end up incorporating other standards, such as the VCS JNR, to verify the emissions reductions for which they are providing compensation.

Table 3: Overview of forest carbon standards and REDD+ results-based initiatives[6]

International Standards	
REDD+ | Based on UNFCCC decisions	
Scale and Scope	Eligibility: Developing country parties to the UNFCCC. Scale: National and, as an interim step, subnational. Scope: Full range of REDD+ activities.
Environmental Characteristics	Objective: Creating incentives for climate mitigation and reduction of forest GHG emissions in developing countries. Safeguards: Guidance and principles; reporting on safeguard systems in national communications. Role of non-carbon benefits under discussion. Design Parameters: Modalities and guidance for REDD+ national and on an interim basis subnational RL, and MRV. Criteria still emerging.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Supported by market and non-market approaches. Details on results-based finance still under negotiation. Assessment: Ambitious mechanism that creates incentives for REDD+ at the national level. Public sector driven; private sector investment incentives uncertain.
Clean Development Mechanism (CDM) | UNFCCC/Kyoto Protocol standard	
Scale and Scope	Eligibility: Developing country parties to the Kyoto Protocol. Scale: Project level. Scope: Limited to A/R.
Environmental Characteristics	Objective: Creating incentives for GHG emission reduction projects, sustainable development and loweing costs of compliance. Safeguards: Sustainable development criteria defined by host country. Design Parameters: Methodologies developed by project sponsors; approved by the CDM Executive Board. RL: BAU baseline. Leakage to be managed and monitored through project design rules. Permanence managed through temporary credits and periodic verification. Demonstration of additionality required (through use of CDM tool). Independent validation and verification.

6 For lack of information we did not include in the table: the Japanese BOCM, and German Early Mover's Program. Further, we did not include the new Chinese Three Rivers Standard (http://www.threeriversstandard.com/en/index.html), the Rainforest Standard (http://cees.columbia.edu/the-rainforest-standard), and the Pacific Carbon Standard (http://www.markit.com/en/products/environmental/registry/standards/pacific-carbon-standard.page).
For the Brazil Mata Viva standard (http://www.brasilmataviva.com.br) we received information too late to be included in this report.

Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Compliance-grade. Issuance of tradable temporary Certified Emission Reductions traceable in Kyoto registries. Assessment: Comprehensive requirements seek to ensure environmental integrity. High transaction costs and limited demand for temporary credits. Future of CDM and acceptance of credits for private sector compliance uncertain.
Joint Implementation (JI) | UNFCCC/Kyoto Protocol standard	
Scale and Scope	Eligibility: Developed country parties to the Kyoto Protocol. Scale: Project-level trading allowed but in context of national level commitment. Scope: A/R, Avoided Deforestation, Revegetation (if elected) and Forest Management.
Environmental Characteristics	Objective: Creating incentives for GHG emission reduction projects and lowering costs of compliance. Safeguards: Defined by host and investor country. Approval from host and investor country governments necessary. Design Parameters: Methodologies proposed by project sponsors or by host country. RL: BAU baseline. Leakage to be managed and monitored through project design rules. Permanence managed in the context of national accounting and target. Project-specific additionality testing required. Independent validation and verification.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Compliance-grade. Issuance of tradable ERUs traceable in Kyoto registries. Assessment: Nested standard that allows the integration of project and national accounting. Limited by the fact that the issuance of Emission Reduction Units depends on the availability of Removal Units in the host country.
National Standards	
Australian Carbon Farming Initiative (CFI) National legislation, in conjunction with cap-and-trade, ETS	
Scale and Scope	Eligibility: Limited to Australian projects. Scale: Project level. Scope: 'Positive list' project types including avoided deforestation, forest management, and reforestation.
Environmental Characteristics	Objective: Creating incentives for GHG emission reductions through generation of offsets. Safeguards: Defined by Australian legislation. "Negative list" of banned activities and fund for ensuring indigenous participation. Design Parameters: RL, MRV: Through approved forestry methodologies. Permanence: 100 year storage for A/R; 5% risk buffer pool. Simplified additionality testing (no legal requirement, no common practice). Independent verification, with exceptions for small projects possible.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Compliance-grade for Australia. Issuance of tradable Carbon Credit Units (CCUs) traceable in Australian National Registry. Rules and methodologies still emerging. Seven integrity criteria for approving methodologies proposed by project sponsors. Assessment: The Australian system could eventually generate demand for REDD+ credits (rules and modalities pending), the CFI itself is limited to Australian offsets however. Link to European Union Emissions Trading System (EU ETS) planned.
New Zealand Permanent Forest Sink Initiative (PFSI) National legislation connected to regulated ETS built off Kyoto Protocol	
Scale and Scope	Eligibility: Limited to NZ projects. Scale: Project level. Scope: Sequestration in post-1989 forests (forest management, A/R) , No incentive for avoided deforestation but penalties for deforestation.

Environmental Characteristics	Objective: Creating incentives for GHG emission reductions, contribute to NZ's Kyoto Protocol compliance strategy. Safeguards: Defined by NZ legislation. Design Parameters: RL, MRV: According to national guidelines and legislation. Additionality determined through eligibility rules; no project additionality. Leakage captured in national inventory. Permanence managed through obligation to surrender NZUs in case of reversal. Self-verification and reporting every 5 years, subject to auditing.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Compliance-grade for New Zealand. Issuance of tradable Emission Units (NZUs) traceable in NZ Emission Unit Register. Integration with the Kyoto-compliance system of New Zealand. Assessment: Cost-efficient and attractive for forest owners. Strong system and limited permanence risk reflected in full personal liability.
Japanese Offsetting Credit Scheme (J-VER) Scheme | Japanese Voluntary Offsetting Program	
Scale and Scope	Eligibility: Limited to Japanese projects. Scale: Project level. Scope: Forest thinning, afforestation, accelerated SFM.
Environmental Characteristics	Objective: Creating incentives for voluntary emission reductions. Safeguards: 'Positive list' defines project eligibility, additionality and social and environmental co-benefits. Design Parameters: MRV and RL according to 'Certification Standard for Forest Carbon Sink in J-VER Scheme'. 3% percent buffer required for permanence. Independent validation and verification.
Economic and Regulatory Characteristics	Link to finance: GHG-results based. Voluntary standard, future link to compliance mechanism possible. J-VER Registry holds JRM carbon credits for voluntary and compliance offsetting. No link to international REDD+ planned. Assessment: High private-sector acceptance in Japan. Cost-efficient through defined eligibility and addititionality criteria. Limited permanence risk reflected in favorable permanence rules.
Subnational and Regional Standards	
California | State cap-and-trade legislation (AB 32)	
Scale and Scope	Eligibility: Limited to U.S. projects. Scale: Project level. Scope: A/R, IFM, Avoided Conversion.
Environmental Characteristics	Objective: Creating incentives for GHG emission reductions through generation of offsets. Safeguards: Safeguards as per domestic legislation, sustainable long-term management practises and promotion of native species. Design Parameters: RL and MRV according to the 'ARB Compliance Offset Protocol for U.S. Forest Projects'. Leakage: Accounting for 'secondary effects' and a standard deduction for market leakage in harvested wood products. Simplified additionality test based on regulatory additionality and exclusion of common practice. Permanence liability for 100 years. Unintentional reversals are mitigated through the ARB buffer. Independent verification.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Compliance-grade for California. Issuance of tradable and traceable units in approved registries. Assessment: 100-year liability for permanence problem reduces attractiveness of standard. Potential of accepting international REDD+ credits in the future. May serve as proof-of-concept for a small amount of REDD+ credits.
Regional Greenhouse Gas Initiative (RGGI) | Regional ETS among 9 Northeastern U.S. states	
Scale and Scope	Eligibility: Limited to RGGI states (U.S.A.). Scale: Project level. Scope: A/R.

Environmental Characteristics	Objective: Creating incentives for GHG emission reductions through generation of offsets. Safeguards: Safeguards defined by local law. FSC required for forest management and use of domestic species recommended. Design Parameters: One single forest methodology. RL: Onsite carbon stocks at commencement of the project. Permanence: Permanent conservation easement. A/R projects with a 10% discount in credits for reversal risk. Simplified additionality testing (no legal requirement, no public financial support). Independent verification.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Compliance-grade for RGGI. Issuance of tradable and traceable units in RGGI CO_2 Allowance Tracking System. Assessment: 100-year liability for permanence limits attractiveness of this standard to the private sector. Limited scope, activity and market interest. Regulation combination of individual state legislation and model regulations; could serve as model for the linking of various ETS.
Voluntary: GHG Accounting & Verification	
Verified Carbon Standard (VCS) | Independent, non-profit organization	
Scale and Scope	Eligibility: International. Scale: Project-based. Scope: REDD, A/R, revegetation, IFM, WRC.
Environmental Characteristics	Objective: Creating high-quality carbon credits for the voluntary carbon market. Safeguards: Projects must identify potential negative environmental and socio-economic impacts and shall take steps to mitigate them. While the VCS does not include quantification or measurement of co-benefits, VCS is typically combined with CCB, or another co-benefit standard. Design Parameters: Methodologies developed by project developers and approved through independent validation/verification bodies. CDM methdolologies also accepted. REL/RL: BAU baseline. Leakage to be managed and monitored through project design rules. VCS Buffer Tool. Permanence risk buffer (10-60% of VCUs). Project-specific additionality testing through approved tool. Independent verification.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Issuance of tradable Verified Carbon Units (VCUs), traceable in approved registries. Assessment: Dominant voluntary carbon standard (58% market share in 2011). Comparatively high transaction costs, particularly if a new methodology has to be developed.
VCS Jurisdictional and Nested REDD+ (VCS JNR) Standard | Program Window Under the VCS	
Scale and Scope	Eligibility: International. Scale: Jurisdiction-based (national and/or subnational). Scope: REDD+ activity (or landscape) accounting at the jurisdictional level, which may include nested (VCS) projects and subnational programs.
Environmental Characteristics	Objective: Providing the tools for integration of various levels of carbon accounting in REDD+. Safeguards: Safeguards as per UNFCCC decisions. Design Parameters: Jurisdictions develop appropriate accounting methods per JNR requirements. Certain VCS project-rules apply to nested projects. REL/RL: 10-year historic baseline, adjustment for national circumstances possible. Additionality built into conservative REL/RL. Independent verification.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Jurisdictions may issue tradable VCUs, traceable in approved registries. Jurisdictional RLs approved by higher-level jurisdictional proponents and independently reviewed; project RLs must be harmonized with jurisdictional RLs after potential grandfathering period expires. Assessment: Currently, the VCS JNR is the only global standard for accounting and crediting national and subnational jurisdictional REDD+ programs, and is being piloted in half a dozen countries/states. Jurisdictions may choose whether to allow project-level activities nested within jurisdictional accounting schemes.

American Carbon Registry (ACR) | Non-profit enterprise of Winrock International	
Scale and Scope	Eligibility: International but targeted towards U.S. stakeholders. Scale: Project-based. Scope: REDD, A/R, revegetation and IFM.
Environmental Characteristics	Objective: High quality voluntary offset program. ACR has been approved by the California Air Resources Board as an Offset Project Registry for the California compliance market. Safeguards: Net positive environmental and socia impact of projects required. Design Parameters: Methodologies are defined as "systematic explanations" that can be developed through project sponsors, CDM methodologies accepted. RLs: BAU baseline. Standard formulates guidance for leakage management. In the absence of a specific permanence tool, the VCS Buffer Tool can be used. Additionality testing through use of an approved tool mandatory. Independent verification and validation of GHG Project Plans.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Issuance of tradable Emission Reduction Tons (ERTs), traceable in own registry (for voluntary & California market offsets). Assessment: Transaction costs compared to VCS are generally lower, more flexibility. Potential for conflict of interests through the affiliation with Winrock International.
ACR Nested REDD+ Standard | Program window under the ACR	
Scale and Scope	Eligibility: International. Scale: Jurisdiction-based. Scope: Projects nested under jurisdictional schemes.
Environmental Characteristics	Objective: Providing the tools for integration of various levels of carbon accounting in REDD+. Safeguards: Safeguards as per UNFCCC decisions at the jurisdictional level, and ACR-approved project-level and jurisdiction-level safeguard standards; also requirements on FPIC, no relocation, net positive social and environmental benefits. Design Parameters: RL: 10-year and activity specific baseline. Additionality built into conservative RL. Independent verification.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Issuance of tradable ERTs, traceable in ACR registry. Assessment: Only covers nested project crediting and not the accounting of the jurisdictional programs themselves. Followed the development of the VCS JNR with a faster but less inclusive process.
Climate Action Reserve (CAR) Independent non-for profit, initially linked to California Climate Action Registry	
Scale and Scope	Eligibility: Targeted towards U.S. / California; U.S. projects eligible, in future Mexican offsets possible. Scale: Project-level. Scope: Avoided Conversion (REDD), A/R, and IFM.
Environmental Characteristics	Objective: Creating incentives for GHG emission reductions by pioneering credible market-based policies and solutions; CAR has been approved by the California Air Resources Board as an Offset Project Registry for the California compliance market. Safeguards: US: compliance with existing regulatory requirements, conscious of environmental justice, requirement to minimize harm. Mexico: possible additional safeguards required. Design Parameters: One protocol per project type, no methodologies. RL: 100-year projected, fixed baseline. Leakage to be managed and monitored through project design rules. 100-year legal liability for permanence. Additional risk buffer. Standardized additionality through comparison with sectoral standards. Independent verification.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Issuance of tradable credits (CRTs), traceable in own registry. Protocols are developed by CAR not the project sponsors. Assessment: Not very liquid due to small California market. Transaction costs reduced through standardized protocols. Expectation of U.S. forestry protocols to be recognized under the California ETS. 100-year liability for permanence limits attractiveness for the private sector.

CarbonFix | Acquired by Gold Standard Foundation in Sept. 2012	
Scale and Scope	Eligibility: International. Scale: Project level. Scope: Limited to A/R, natural revegetation and agroforestry.
Environmental Characteristics	Objective: Creation of benchmark for international forest projects, GHG and social/environmental standard. Safeguards: Formulates environmental and social requirements. Design Parameters: Single methodology includes templates for all elements. Full MRV for GHG, but ex-ante crediting possible. RL: Sum of carbon stocks on the eligible planting area prior to plantings. Leakage: Accounting for activity shifting required. Permanence: 30% buffer contribution is required across all projects. CDM A/R Additionality Tool required, Independent verification.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Additional environmental benefits built into the standard demanding a price premium. Issuance of tradable CO2-certificates into Markit Environment Registry. Projects required to use ClimateProjects platform[7] for buyers and customers to track projects. Assessment: Very small (0.1%) market share, but high prices. Applicability reduced through limited scope. Ambition to establish a standard of highest quality, ex-ante issuance of credits problematic in this respect. A required pre-validation by the CarbonFix technical board reduces independence and possibly objectivity.
Plan Vivo | Plan Vivo Foundation (Scottish Charity) oversees Plan Vivo Standard and System	
Scale and Scope	Eligibility: International. Scale: Project level. Scope: Only community-based projects; A/R (non-commercial plantations), agroforestry, avoided deforestation, forest conservation and restoration.
Environmental Characteristics	Objective: Creating a framework for developing and managing community-based land-use projects. Combined GHG and social/environmental standard. Safeguards: Social and environmental considerations included in core principles of the standard. Design Parameters: Simplified GHG MRV. Ex-ante or ex-post issuance of credits possible. RL: 'clear and credible' baseline. Leakage sources should be identified and mitigated. Permanence risk buffer with a minimum contribution of 10% of project credits. Project-specific additionality testing. Independent verification.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Issuance of tradable Plan Vivo Certificates (PVCs) into Markit Environment Registry. Assessment: Focus on small-scale projects with high community benefits justifies simplifications in GHG accounting, baseline setting and MRV.
Panda Standard | Private standard managed by Panda Standard Association	
Scale and Scope	Eligibility: Limited to China. Scale: Project level. Scope: IFM and A/R.
Environmental Characteristics	Objective: Creating incentives for GHG emission reductions and investments in rural China. GHG and social standard with goal to reduce emissions and alleviate poverty. Safeguards: Co-benefits and stakeholder consultations are documented. Projects can also generate project credits with a special designation as poverty-alleviating. Design Parameters: Methodologies include CDM methodologies and other methodologies under development. RL: According to approved methodology. Leakage to be managed and monitored through project design rules. Permanence: Panda Buffer pool. Project-specific additionality testing. Independent verification.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Issuance of tradable and traceable credits into Panda Standard Registry. Assessment: Focus on China rural development and poverty alleviation. New standard as yet untested, market share is small.

7 Climate Projects Website: http://www.climateprojects.info/

Voluntary: Co-benefit Standards	
Climate Community, & Biodiversity (CCB) Standards Initiative of partnership of conservation and pro-poor NGOs	
Scale and Scope	Eligibility: International. Scale: Project level. Scope: A/R, revegetation, REDD and IFM.
Environmental Characteristics	Objective: Provides standard for multi-benefit forest projects. Co-benefit and project design standard. Safeguards: Validates project design and verifies the social and environmental co-benefits of forestry projects. Design Parameters: Standard includes 14 mandatory criteria and 3 optional "Gold Level" criteria. GHG estimates but no GHG MRV. RL: Baseline situation has to be described. Leakage must be addressed. Permanence management not included. MRV of climate, biodiversity and socioeconomic impacts. Independent verification.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments not possible, as no carbon credits generated. Assessment: Dominant co-benefit standard, typically used in combination with VCS, CDM or ACR certification. Comes with additional requirements on the design of the projects, adds costs to verification and certification. Assessment: CCB certification reduces project and reputational risk exposure and adds a premium to the project
REDD+ Social and Environmental Standards (REDD+ SES) Initiative by CCBA and CARE International	
Scale and Scope	Eligibility: International. Scale: Jurisdictional level. Scope: Social and environmental standard for jurisdictional REDD+ programs.
Environmental Characteristics	Objective: Creation of environmental and social assessment framework for jurisdictional REDD+ programs. Design Parameters: Standard consists of principles, criteria and indicators that help to guide and evaluate the process and substance of a government REDD+ program. Leakage, permanence and additionality will be governed by the accompanying GHG standard. International review process to ensure consistency in country-specific interpretations, developing independent assessment framework.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments not possible, as focuses exclusively on safeguards not carbon. Currently, the only existing safeguards are a monitoring and reporting framework for REDD+ programs. Complements the VCS JNR or REDD+ government programs. 10-step process for implementation, based on eight socio-environmental safeguard principles. Assessments: In the testing and piloting phase (with a dozen national and subnational governments); some governments may use the standard as guidance while others may adopt it as a mandatory requirement with independent assessments.
SocialCarbon Initiative | Founded and managed by Ecológica Institute (Brazil)	
Scale and Scope	Eligibility: International. Scale: Project level. Scope: All forestry project types.
Environmental Characteristics	Objective: Assessment of a carbon co-benefit standard that can be used in conjunction with a GHG standard, with a focus on assessing economic, environmental and social impacts on communities. Design Parameters: Sustainable development standard. No GHG measurement. Project has to comply with credible GHG standards (additionality, permanence, leakage). MRV must credibly follow relevant accounting standards related to 6 co-benefits measured. Independent verification.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments not possible. Assessment: Focus on Latin America, but currently used by very few forestry projects. Complementary credits are issued jointly with GHG credits into the SocialCarbon Standard registry managed by Markit.

Multilateral Initiatives	
Carbon Fund of the Forest Carbon Partnership Facility (FCPF) World Bank initiative with 37 developing and 18 developed country participants	
Scale and Scope	Eligibility: International, limited to developing country participants that have reached a determined level of REDD+ readiness. Scale: National and subnational, no 'projects'. Scope: REDD+
Environmental Characteristics	Objective: Supporting international REDD+ negotiations and pilot purchase of REDD+ credits. Safeguards: Application of World Bank Operational Policies and Strategic Environmental and Social Assessment. Design Parameters: Full GHG MRV. Additionality ensured through conservative RL. Leakage managed through jurisdictional approach. Permanence rules not yet determined. Independent verification including leakage, co-benefits and safeguards.
Economic and Regulatory Characteristics	Link to finance: The Carbon Fund is a USD200m REDD+ investment facility, which is planning to develop investment criteria around REDD+ accounting. However, it is unclear whether REDD+ credits will be issued or whether it will rely on existing (e.g. voluntary) standards for this purpose. National geo-referenced tracking system or registry for GHG emissions. Assessment: High credibility, transparency and visibility through participatory approach, but accounting framework yet to be developed. Slow and costly. Test case for UNFCCC REDD+. Readiness support via special window and fund. Public-sector driven, challenge to create incentives for private investments.
UN-REDD | Initiative of UN FAO, UNDP, UNEP, 44 partner countries	
Scale and Scope	Eligibility: International, UN REDD developing country partner countries. Scale: Support of readiness and implementation. Scope: REDD+
Environmental Characteristics	Objective: Assist countries in the implementation of REDD+ programs. Safeguards: A Social and Environmental Principles Framework similar to the World Bank's REDD+ strategic environmental assessment has been developed. A Benefits and Risks Tool is in development. Design Parameters: No GHG MRV. Supports nationally-led REDD+ processes and promotes the informed and meaningful involvement of all stakeholders.
Economic and Regulatory Characteristics	Link to finance: No GHG results-based payments. Delivery Partner of the FCPF carbon fund; works with partner countries on implementing REDD+ systems. Assessment: Public-sector driven, limited consideration of private sector incentives.
Governors Climate Task Force (GCF) | International initiative by subnational governments	
Scale and Scope	Eligibility: Limited to GCF member states and regions. Scale: Subnational REDD+ activity accounting at the jurisdictional level. Nested projects possible. Scope: REDD+
Environmental Characteristics	Objective: Promotion of subnational REDD+ programs. Dedicated subnational REDD+ initiative. Safeguards: Safeguards to be addressed in the context of emerging REDD+ programs and bilateral purchase/investment agreements. Design Parameters: Full GHG MRV. Capacity building planned, no criteria yet for RL, permanence, or MRV.
Economic and Regulatory Characteristics	Link to finance: GHG results-based payments possible. Focus on generating compliance-grade REDD+ credits. Preparation of pay-for-performance public programs. Link to GHG registries planned. Assessment: Subnational cooperation and learning platform, coordination among states, sharing of lessons learned. Readiness support through GCF Fund. Potential for bilateral partnerships between states that include results-based payments.

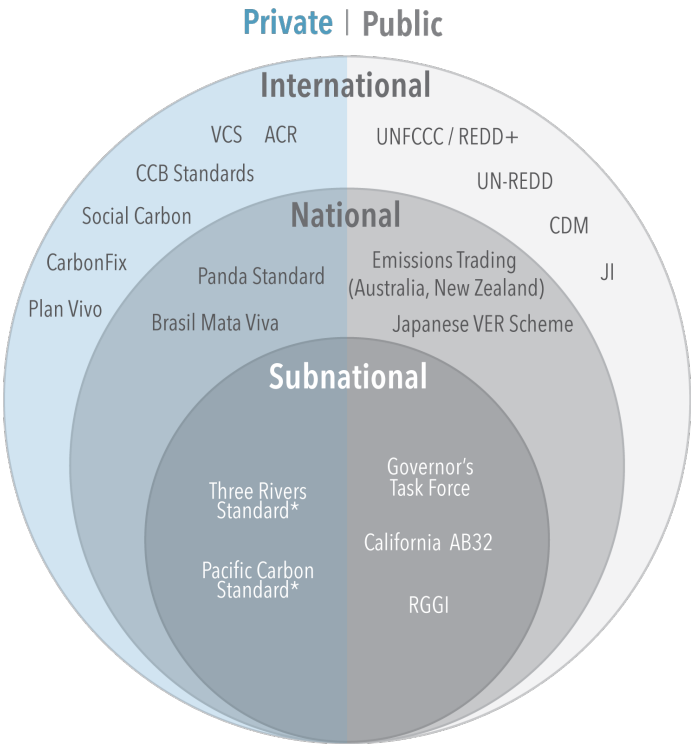
Bilateral Initiatives	
Norway	
Guyana REDD+ Investment Fund (GRIF) Bilateral agreement with World Bank as trustee, IADB, UNDP as partners	
Scale and Scope	Eligibility: Limited to Guyana. Scale: Jurisdictional. Scope: Avoided deforestation only, other REDD+ based on eventual national REL/RL.
Environmental Characteristics	Objective: Dedicated bilateral-REDD+ program. GHG and development benefits captured in Guyana's LCDS. Safeguards: Bilaterally agreed 'enabling indicators' that define safeguards. Design Parameters: Initiative governed by bilateral agreement between Norway and Guyana. GHG MRV step-wise to be developed. Bilaterally-agreed RL based on national and global deforestation rates. Land-use planning to address leakage. Permanence rules not clear. Additionality captured in RL. Periodic independent verification.
Economic and Regulatory Characteristics	Link to finance: Results based payments that depend on continued high forest cover; payments decline if deforestation increases. Assessment: Ambitious initiative that pilots the integration of REDD+ in low carbon development. Test case for agreement with countries with low deforestation rates.
Indonesia-Norway REDD+ Partnership | Bilateral agreement	
Scale and Scope	Eligibility: Limited to Indonesia. Scale: Jurisdictional, national with subnational pilots. Scope: No information available on activity scope.
Environmental Characteristics	Objective: Dedicated bilateral-REDD+ program. Safeguards: Bilateral agreement on multi-stakeholder participation & extensive social and environmental safeguards. Design Parameters: Link to Indonesia's climate and forest strategy. GHG MRV step-wise to be developed to progress to Tier 3 data. No information available on leakage, permanence, and verification.
Economic and Regulatory Characteristics	Link to finance: Bilateral agreement provides benchmarks for both upfront and performance-based funding for phased REDD+ strategy implementation. Assessment: Test case for national results-based payments.
Amazon Fund (Norway – Brazil) Brazilian initiative managed by Brazilian development bank with international funding	
Scale and Scope	Eligibility: Limited to countries of the Amazon Basin (Brazil & Amazon Cooperation Treaty Organization countries). Scale: Activities funded by the Amazon Fund. Scope: REDD+, Conservation, Sustainable Forest Management, A/R, and related capacity-building.
Environmental Characteristics	Objective: Supporting REDD+ projects based on bilateral agreement between Brazil and Norway. Payment from Norway to Brazil based on reduced emissions in the Brazilian Amazon. Safeguards: Social and environmental safeguards lack grievance mechanism or FPIC. The Amazon Fund is subject to BNDES's social and environmental safeguards. Design Parameters: For payments from Norway to the Amazon Funds. RL: 10-yr. historic average with 5-yr. updates. Leakage and additionality captured in RL. Permanence through periodic verification. MRV by Brazilian govt. agencies & independent audits. Funding criteria include project coherence with federal, state, BNDES and Fund planning.
Economic and Regulatory Characteristics	Link to finance: GHG proxies for results-based funding at the national level. The Amazon Fund is open to payments from multiple funders, it funds projects in the Amazon region based on project proposals. Assessments: Example for using proxies to enable results-based funding. Example also for national distribution of international funds through local development bank. Funding requirements of the Amazon Fund are not clear.

4. Applicability of REDD+ Standards

Public and private entities that seek to link a REDD+ activity to results-based payments will screen relevant standards based on their applicability to the specific implementation context. After verifying whether their particular REDD+ activity meets relevant eligibility requirements of a particular standard or initiative, they will evaluate the environmental and economic features of the various standards. Environmental criteria include the GHG offset quality generated, the environmental effectiveness of the mitigation standards, and the level of safeguard or co-benefit credibility. Economic criteria include the market penetration of a particular standard and the transaction costs associated with applying a particular standard.

Questions of eligibility relate to the governance of a standard that defines its character as mandatory or voluntary within its regulatory context. The reviewed standards and initiatives differ according to the body responsible for their development – chiefly either governmental or non-governmental body (see Figure 1).

Figure 1. Results-based initiatives and standards according to governance level and sector



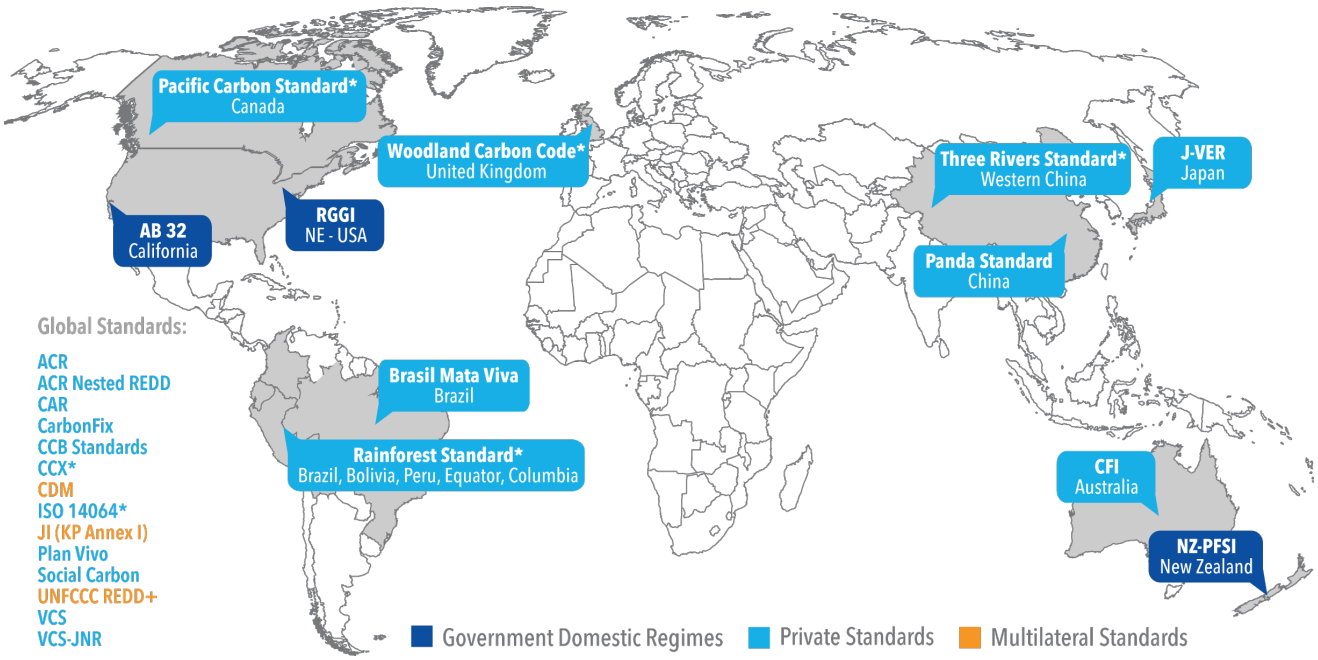
* Standards marked with an asterisk have a low market share and are not profiled in this report.

Government-created standards include national forest carbon regimes in Australia, New Zealand, Japan, and state regimes in California and nine states of the Northeastern U.S. Such standards are generally compliance-based systems, with the exception of Japan, where J-VER offsets are voluntary. Additionally, multilateral

programs as exemplified by the Forest Carbon Partnership Facility, and bilateral programs such as Norway's initiatives with Guyana, Norway and Brazil (as well as emerging initiatives such as the Japanese BOCM and German Early Mover's Program) demonstrate how public sector initiatives pilot results-based payments before there are mandatory requirements and modalities for REDD+ formulated at the international level. In the interim these initiatives draw on experience and expertise developed in the context of the voluntary forest carbon market. Voluntary, non-governmental standards include the Verified Carbon Standard, the American Carbon Registry, the California Action Reserve, CarbonFix, Plan Vivo, the Panda Standard, the CCB Standard, REDD+ Social and Environmental Standards and SocialCarbon. All are voluntary regimes yet the jurisdictional standards of the VCS and ACR allow for interaction with national and subnational compliance systems.

The eligibility of a particular REDD+ activity under a standard or initiative is also determined by its geographic location (see Figure 2). The preponderance of standards, and those that have been available the longest, are those designed for global application (e.g. CDM/JI, ACR, CAR, CarbonFix,CCB Standard, ISO, Plan Vivo, SocialCarbon, VCS). However, as national and subnational jurisdictionally-created carbon markets have begun to develop around the world, with them have often come new forest carbon standards tailored to their local circumstances. Forest carbon standards developed at a national level include J-VER in Japan, CFI in Australia and PFSI in New Zealand. Subnational jurisdiction standards for forest carbon have been developed under the AB-32 California and RGGI in nine northeastern U.S. states.

Figure 2. Geographic Mapping of Forest Carbon Standards



* Standards marked with an asterisk have a low market share and are not profiled in this report.

Recent REDD+ bilateral funding initiatives provide a second set of geographically-specific incentives for forest carbon investments. Generally such initiatives are designed for a single country that is recipient to the bilateral funding, as in Norwegian bilateral agreements with Guyana, Indonesia, and Brazil, as well as the multiple bilateral commitments anticipated between Japan and its partners in the BOCM. The Norway-Brazil bilateral funding arrangement is somewhat unique however, as it allows for both public and private contributions via the Amazon Fund, and is planned to extend to other Amazon Basin countries. Additionally, in recent years there has been a explosion in country-specific voluntary market forest carbon standards aimed at Brazil, China, Costa Rica, and the U.K. Recent voluntary initiatives also include new regional standards such as the Rainforest Standard (targeting Amazon regions of Bolivia, Brazil, Colombia, Ecuador, and Peru), the Pacific Carbon Standard focusing on the Canadian Pacific Northwest, and the Three Rivers Standard aimed at Western China.[8]

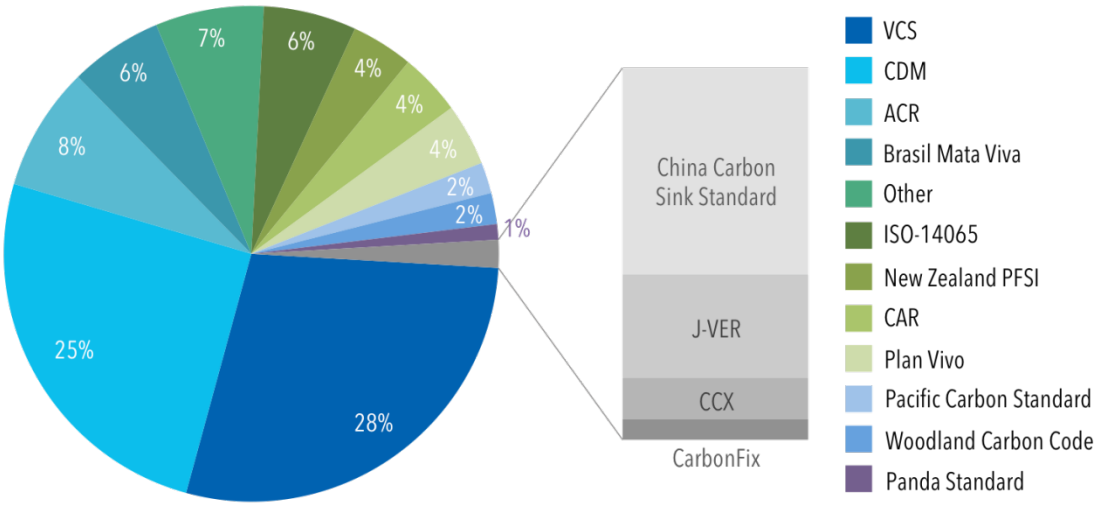
When looking at environmental features of the various standards and initiatives, it is important to weigh the rigor of an GHG offset standard against the opportunities presented by a broader, more comprehensive sustainable development standard.

Standards creating tradable carbon credits represent the largest market force and underpin the development of forest carbon management and mitigation efforts more broadly (NZ, AUS and Japanese offset systems, VCS, ACR, CAR). However, quite a few initiatives not only aim at achieving emission reductions but also include additional goals, which influence the choice of methodologies and standards employed by the specific initiative. These can be either social or additional environmental goals or both. Examples of initiatives with additional social goals are Plan Vivo, which works only with community-based projects, the Chinese Panda Standard with its additional poverty alleviation goal for rural areas and the SocialCarbon initiative, which focuses mainly on sustainable development objectives. Additional social and environmental criteria are for example required by Climate, Community and Biodiversity Alliance (CCBA), CarbonFix and SocialCarbon (the latter two in addition to their GHG-related methodologies). Plan Vivo and REDD+ SES make specific requirements of protecting ecosystems intact.

Economic considerations relate to the market share of particular standards and the transaction costs related to their application. The market penetration of a standard reflects the acceptance of the system and its criteria. Internationally the Verified Carbon Standard has by far the greatest market penetration, holding 58 percent of the voluntary market in 2011, while other initiatives such as the Climate Action Reserve or the American Carbon Registry have much smaller market shares (see Figure 3). However, the international share of a standard says little over the regional acceptance of particular REDD+ and forest carbon standards. The J-VER has registered almost 200 projects in Japan alone, roughly 60 percent of which are forestry.[9] On the other hand, the formulation of a regional standard does not mean that it is necessarily accepted by local players. The forest offset opportunity under RGGI has hardly been used, with high land prices and limited willingness to accept a 100-year permanence liability counting among the most important factors for its limited attractiveness.

8 Molly Peters-Stanley, Katherine Hamilton, Daphne Yin - Ecosystem Marketplace, Leveraging the Landscape: State of Forest Carbon Markets 2012, Washington DC, pp. 76-78. (noting Three Rivers Standard focuses on headwaters of Yellow, Yangtze, and Mekong Rivers).
9 For more detail see: http://www.j-ver.go.jp/project/anken02.html

Figure 3. Market share of forest carbon standards[10]



Another important decision point relates to the required financial resources and technical capacities for the application of a standard. Several carbon accounting standards in particular are cited as having high transaction costs, primarily due to detailed regulations (CDM) and the need to develop and approve methodologies and protocols (VCS and CAR). The use of a standard with high transaction costs can be associated with greater quality and/or rigor, and is often rewarded with internationally tradable offset credits that may make the investment into certification under the VCS or the CDM worthwhile. Standards that place more emphasis on community benefits may apply relaxed carbon accounting rules (Plan Vivo, Panda Standard, SocialCarbon Initiative). These standards can achieve high prices if the project is considered of high development value. In these cases the purchaser of the credits is investing more into the credibility of the project rather than the credibility of the offset credit.

10 Adapted from Molly Peters-Stanley, Katherine Hamilton, Daphne Yin - Ecosystem Marketplace, Leveraging the Landscape: State of Forest Carbon Markets 2012, Washington, DC, p. v (Market Share for Independent and Domestic Standards).

5. Conclusions

The multitude of forest carbon standards currently available provides a formidable toolbox for results-based REDD+ finance. The variety of initiatives brings ample evidence of interest from private as well as public actors in creating systems to measure the performance of REDD+ and other forest carbon activities. Figure 4 below illustrates the increasing number of forest carbon standards.

Figure 4: Growth in Forest Carbon Standards[11]

2006	2007	2008	2009	2010	2011	2012
						ACR Nested REDD
						VCS JNR
						Japanese BOCM
					CFI (Aus)	CFI (Aus)
					AB 32 (Cal)	AB 32 (Cal)
					Three Rivers Standard*	Three Rivers Standard*
					Pacific Carbon Standard*	Pacific Carbon Standard*
				Panda Standard	Panda Standard	Panda Standard
				Brasil Mata Viva	Brasil Mata Viva	Brasil Mata Viva
	NZ PFSI	NZ PFSI	NZ PFSI	NZ PFSI	NZ PFSI	NZ PFSI
J-VER	J-VER	J-VER	J-VER	J-VER	J-VER	J-VER
ACR	ACR	ACR	ACR	ACR	ACR	ACR
CDM/JI	CDM/JI	CDM/JI	CDM/JI	CDM/JI	CDM/JI	CDM/JI
CarbonFix	CarbonFix	CarbonFix	CarbonFix	CarbonFix	CarbonFix	CarbonFix
VCS	VCS	VCS	VCS	VCS	VCS	VCS
CCAR	CCAR	CCAR	CAR	CAR	CAR	CAR
SocialCarbon	SocialCarbon	SocialCarbon	SocialCarbon	SocialCarbon	SocialCarbon	SocialCarbon
CCB Standard	CCB Standard	CCB Standard	CCB Standard	CCB Standard	CCB Standard	CCB Standard
Plan Vivo	Plan Vivo	Plan Vivo	Plan Vivo	Plan Vivo	Plan Vivo	Plan Vivo
ISO 14064*	ISO 14064*	ISO 14064*	ISO 14064*	ISO 14064*	ISO 14064*	ISO 14064*

* Standards marked with an asterisk have a low market share and are not profiled in this report.

While there is competition for market share among some of the private standards, the majority of the reviewed initiatives are complementary in their objectives and applicability. UN-REDD+, the Forest Carbon Partnership Facility's 'REDD+ readiness' window, and the Governors' Climate and Forest Task Force provide platforms for learning and capacity building at the jurisdictional level. These initiatives go hand in hand with private standards such as the VCS Jurisdictional & Nested REDD+ Iniative and ACR nested REDD+ Standard, and the CCB and REDD+ SES that provide concepts, tools and methodologies for the implementation of

11 Adapted from Peters-Stanley, M. (2012) *State of the Voluntary Carbon Markets: Standards, Projects and Governments on a Lo(cal) Diet.* Ecosystem Marketplace. (Presentation), p. 4.

credible REDD+ programs. Governments may adopt these standards directly or use them as a starting point to develop their own public system. Multilateral funds and bilateral programs test the potential of results-based finance even where national REDD+ platforms are still under development. The Forest Carbon Partnership Facility, Norway's bilateral agreements and Germany's Early Mover program provide examples of such money-backed initiatives. Private actors can choose among a variety of standards, with the Verified Carbon Standard serving as the dominant international standard. National and regional standards often have a high penetration in particular jurisdictions and are tailored to specific contexts. This applies to voluntary standards, such as Brazil's Mata Viva and California's CAR as much as China's Panda standard, but also to public standards, such as the national systems in New Zealand, Australia or Japan.

Standards surveyed in this report diverge between those aimed at providing concrete, market-ready operational accounting for certification of carbon credits or non-carbon benefits (e.g. VCS, ACR, CCB) and those aimed at high-level guidance on REDD+ activities (e.g. FCPF, UN-REDD, GCF). Given the different users of these standards, there is generally little or no competition between them. Whereas the former standards set unilateral requirements for their users, the latter gradually work to define goals based on members' shared experiences, often contributing the most significant added-value in the form of capacity-building. Initiatives that support countries in their REDD+ readiness and the development of REDD+ activities often refer to existing standards for the quantification of mitigation benefits.

Generally, standards provided by public bodies, especially national or subnational standards integrated into the carbon accounting established by the Kyoto Protocol (e.g. Australia, New Zealand or Japan), have the advantages of greater clarity and ease of use than international standards and guidance from private bodies that cannot refer back to durable national frameworks. Conversely, not only do private standards often derive from a more complicated patchwork of standards, protocols, methodologies, and criteria or guidance, but due to their global application, imply many questions of interpretation in the local and national context. Where private standards are used in countries with weak governance they have to create an environmentally secure system without having the ability to merely refer to national legislation and carbon accounting.

In sum, it is likely that the future may certainly see further development of, and convergence among, competing standards. This will neither be complicated nor costly as those standards that stand in competition currently show significant overlap in their design criteria. Such process of consolidation is therefore expected to continue gradually without major market disruptions. Simultaneously, the diversity and complementarity of the various existing and emerging initiatives allow public and private entities to apply a variety of mutually reinforcing tools and services in the pursuit of the same overall REDD+ objective: reducing forest related emissions as effectively, permanently and swiftly as possible.

ANNEX

A.1 Public International Law Initiatives and Standards

A.1.1 UNFCCC

A.1.1.1 REDD+ Mechanism (under negotiation)

Objective: In the context of the provision of adequate and predictable support to developing country Parties to the UNFCCC, REDD + seeks to create incentives to slow, halt and reverse forest cover and carbon loss in developing countries, in accordance with national circumstances, consistent with the ultimate objective of the Convention.

History and Overview: As an official agenda item of the UNFCCC, REDD+ dates to the submission by Papua New Guinea and Costa Rica at COP-11 in 2005 to add deforestation to the agenda of annual UNFCCC negotiations. Since then, the scope has expanded from reducing emissions from deforestation (RED) to also include forest degradation (REDD), and three additional 'plus' elements: conservation and enhancement of forest carbon stocks, and sustainable management of forests, together known as REDD+. Subsequent UNFCCC decisions have reemphasized the importance of REDD+ and formulated initial guidance for the development of RLs, safeguards, and MRV systems.

Process: Compared to other agenda items, international REDD+ negotiations have progressed relatively fast. Nonetheless, several major issues remain to be addressed in order to ensure environmental integrity of emissions reductions and removals under REDD+, in particular including: reference levels, leakage, non-permanence, and monitoring. Developments in voluntary carbon market and multilateral and bilateral standards such as buffers, insurance mechanisms and temporary crediting, as well as enhanced monitoring technology, may be of relevance to REDD+ as it moves from negotiations to implementation. The modalities for results-based finance are still under development.

Main Design Elements

Element	Treatment [12, 13, 14, 15]
Scale	National level, with with subnational as an interim step towards national implementation
Geographical scope	Developing country UNFCCC Parties
Activity scope	Full scope of REDD+

12 Bali Action Plan, Decision 1,/CP.13 (2007) Annex.
13 Copenhagen Decision 4/CP.15, 11-13.
14 Cancun Agreements, Decision 1/CP.16, (2010) Annex I, 24-25.
15 Durban Decision 2/CP.17 (2011) Add.2, 14-16, Decision 12/CP.17.

RL	RL expressed in tonnes of carbon dioxide equivalent per year are benchmarks for assessing each country's performance in implementing REDD+ activities. RLs shoud be built on transparent, complete, consistent and accurate information, including historical data. They should be consistent with national GHG Inventories, subject to review, and may consider national circumstances. Countries should move towards national RLs, but can develop sub-national RLs in the interim.
Safeguards	Safeguards formulated in the Cancun agreements: (i) actions should be consistent with national and international forest programmes and agreements; (ii) transparent forest governance; (iii) respect for indigenous and local communities; (iv) full and effective participation of stakeholders; (v) consistency with conservation of natural forests, biodiversity and other social and envronmental co-benefits; (vi) ensuring permanence; (vii) preventing leakage. Countries report on safeguards in their National Communications.
Leakage	Countries should avoid displacement of emissions through carefully designed national programs. Leakage captured in national MRV systems.
Permanence	Countries should avoid events of GHG emission reversals through carefully designed national programs. International crediting rules still to be developed.
Additionality	No guidance yet. Assumed to be captured in national RL.
MRV	Countries to establish national monitoring, using both remote sensing and ground-based measurements. Results-based finance linked to fully measured, reported and verified actions.
Registries	No guidance yet.

A.1.1.2 Clean Development Mechanism (Kyoto Protocol)

Objective: The objective of the CDM is "to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention [advert dangerous climate change], and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under Article 3."[16]

History and Overview: The Kyoto Protocol's CDM allows crediting from afforestation and reforestation (A/R) projects, but excludes REDD+ and other forest carbon activities. REDD+ was not included due to both environmental and market concerns around the accuracy of emissions reductions as well as the potential for a large supply of credits to flood the market.[17] A/R projects have remained a very minor share of the CDM market, in part due to the temporary credits issued for these project types. [18] A/R credits through 2011 have made up only 0.9% of total credits registered under the CDM.[19] Despite the small fraction of the CDM market that A/R represents, in absolute numbers, the volume is still substantial. Given that the great majority of A/R tCERs for the first crediting period were not issued until 2012 though, it is difficult to

16 UNFCCC Kyoto Protocol. Article 12.
17 Fearnside, Philip M. (2001). Environmentalists split over Kyoto and Amazonian Deforestation. Environmental Conservation, 28(4): 295–299.
18 Decision 5/CMP.1 2005, Annex, Section A. Definitions paragraph 1(g) "Temporary CER" or "tCER" is a CER issued for an afforestation or reforestation project activity under the CDM which (…) expires at the end of the commitment period following the one during which it was issued; (h) "Long-term CER" or "lCER" is a CER issued for an afforestation or reforestation project activity under the CDM which (…) expires at the end of the crediting period of the afforestation or reforestation project activity sunder the CDM for which it was issued;
19 Data on registered projects from www.unfccc.int. Data on projects under development and projected numbers of credits from http://www.cdmpipeline.org/

compare the market for A/R projects under the CDM with voluntary markets, which tend to have significant quantities of credits issued annually.

Standard components, methodologies, terms, and procedures are all defined in detail in the CDM modalities and procedures adopted by the parties to the Kyoto Protocol. The 'standard' for CDM is comprised of a range of decisions including relevant sections of the Kyoto Protocol, accreditation standards for Designated Operational Entities (the VVB for the CDM),[20] approved methodologies and tools, and relevant regulatory procedures, guidance and forms. New methodologies can be submitted to the CDM Executive Board for approval requiring both the Board's appraisal and evaluation by independent experts.[21]

Process: As the most developed compliance market for forestry credits, the CDM has eleven approved large scale A/R methodologies, seven small scale methodologies, and two consolidated methodologies. In general, CDM projects follow an eight step process including (i) development of Project Design Document, (ii) Letter of Approval from the country where the project takes place approving the project design, (iii) project validation, (iv) registration, (v) monitoring, (vi) verification, (vii) issuance of CERs, and (viii) forwarding of CERs to relevant entities.[22]

Main Design Elements

Element	Treatment [23, 24]
Scale	Project level
Geographical scope	Countries that are a party to the Kyoto Protocol and not included in the Convention's Annex I; this means almost all developing countries.
Activity scope	A/R
RL	Transparent and conservative project-specific baselines must be developed.
Safeguards	The host country's Designated National Authority confirms that the project contributes to national sustainable development, with details left to the host country to determine. International and local consultations on the project are mandatory.
Leakage	Projects require leakage estimation if activities that generate emissions are shifted outside the project boundary, and if emissions are greater than before the project for any carbon stock reductions outside the project boundary due to that project.
Permanence	CDM A/R projects deal with permanence through the type of credits issued. CDM A/R credits are temporary and have to be replaced with new temporary or permanent credits upon expiration.
Additionality	Additionality tools include Tool for the Demonstration and Assessment of Additionality in A/R CDM Project Activities, Version 2 and Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality in A/R CDM Project Activities, Version 1.
MRV	The results of monitoring of emission reductions are reported to a Designated Operational Entity, which periodically (every 5 years) verifies the emission reductions.
Registries	CDM Registry electronic database managed by UNFCCC Secretariat.

20 CDM Executive Board. Annex 1, CDM Accreditation Standard for Operational Entities (Version 03). EB 62 Report Annex 1.
21 Further information can be found on CDM Procedures at: http://cdm.unfccc.int/Reference/Procedures/index.html
22 CDM Rulebook Website. http://cdmrulebook.org/
23 Clean Development Mechanism. CDM Rulebook, Clean Development Mechanism Rules, Practice & Procedures.
24 Mizuno, Yuji. MRV in CDM. Presentation for Institute for Global Environmental Strategies (IGES).

A.1.1.3 Joint Implementation (Kyoto Protocol)

Objective: The objective of Joint Implementation (JI) under the Kyoto Protocol is to enable the greatest reduction in aggregate costs of GHG mitigation, although it specifically was designed to enable more industrialized Annex I countries to invest in projects in lesser-developed Annex I countries with economies in transition with lower marginal abatement costs.[25]

History and Overview: As in the CDM, JI is a project-based mechanism, although JI only works within Annex I (developed) countries. The JI mechanism permits credits to be generated from any activity that falls under a country's LULUCF accounting. JI is an example of a nested forestry standard as it is embedded into the country's Kyoto Protocol accounting and compliance system. Under the Kyoto Protocol, carbon emissions and removals from LULUCF are not (normally) calculated in a country's cap.[26] Rather, net LULUCF removals may be used by a country to offset emissions from capped sectors.[27] Annex I parties must account for emissions by sources and removals by sinks of GHGs from afforestation, reforestation and deforestation activities, but may account for emissions and removals from revegetation, forest management (e.g. reduced impact logging, fire management), cropland management and grazing land management).[28,29]

JI requires that a conservative baseline be established, leakage managed and monitored, and GHG reductions accounted. Successful JI projects are rewarded with Emission Reduction Units (ERUs). As a result of their non-temporary status, prices are generally much higher for ERUs than tCRs, although lower than for non-LULUCF CERs or ERUs. However despite their permanent nature, ERUs from LULUCF activities are not permitted to enter the EU-ETS, as it bans all credits from forest carbon.[30] Unlike CDM A/R projects, ERUs may be issued on a yearly basis for JI forestry projects.

The rules and procedures for JI are defined in decisions of the Kyoto Protocol Meeting of the Parties.[31] The same principles and the processes that apply in quantifying emission reductions in CDM projects are generally applicable to JI projects. IPCC guidelines are used as the basis for accounting and reporting in JI, as with all emissions reductions and removals under the UNFCCC and its Kyoto Protocol. Parties to the Convention use IPCC guidelines to prepare their national inventories of GHG emissions and removals. Annex I countries (developed countries) who are Party to the Kyoto Protocol also use additional supplemental IPCC guidelines to estimate and report land-use related emissions and removals for use under the Kyoto Protocol.

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25 Karousakis, K. (2006) Joint Implementation: Current Issues and Emerging Challenges. OECD. 7 http://www.oecd.org/env/climatechange/37672335.pdf

26 LULUCF accounting is found in Article 3 of the Kyoto Protocol. Under Article 3.7, if land-use change and forestry (LUCF) constituted a net source of greenhouse gas emissions in 1990, a country may include this in their base year emissions (that are used to calculate the cap). This exception was negotiated by Australia which had net LUCF emissions in 1990.

27 Emissions that are included in industrialized country's emission limitation or reduction commitments (caps) under the Kyoto Protocol are listed in Annex A to the Protocol. This list does not include LULUCF.

28 Kyoto Protocol Articles 3 paras 3 and.4, respectively.

29 In COP-16/CMP.6 in Cancun, the parties decided to adopt the same first-commitment period definitions of forest, afforestation, reforestation, deforestation, revegetation, forest management, cropland management and grazing land management for the second commitment period. Issues were still to be decided included whether to include wetlands, whether forest management will remain as an optional activity, how to determine reference levels for forest management, and whether a cap should be applied to emissions and removals from forest management. UNFCCC Decision 2/CMP.6, paras 2 and 3.

30 Burian, M. (2008) Assessment of Forestry Projects under the Kyoto Protocol – Obstacles and Opportunities. (Presentation at SB 28). http://www.gfa-group.de/envest/publications/webdownloads/538311/VortragBurian.pdf

31 In particular, Decision 9/CMP.1 sets out many provisions governing JI.

JI projects may be conducted under either of two tracks. Under Track 1, the host country is responsible for approvals. Track 2 projects (in countries not fully compliant with JI eligibility requirements) require approval from the Joint Implementation Supervisory Committee. In each JI country, a Designated Focal Point serves as the responsible agency for administering JI project activities within their respective jurisdiction.

Process: In general, JI projects follow a project cycle similar, albeit slightly simplified, to the CDM. Where a host country qualifies for Track 1 JI, the host country can define methodologies, approve projects and decide on the issuance of credits. JI project sponsors may develop and propose their own baseline and monitoring methodologies.

They then have to (i) develop a Project Design Document, (ii) obtain Letters of Approval from the host and investor countries, and perform (iii) independent or host country confirmation of the project design (project determination), (iv) registration, (v) monitoring, (vi) verification (also referred to as determination) of GHG emission reductions, (vii) issuance of ERUs, and (viii) transfer of ERUs to relevant entities.[32]

Main Design Elements

Element	Treatment [33, 34]
Scale	Project (nested in national LULUCF accounting)
Geographical scope	Countries that are a party to the Kyoto Protocol and included in the Convention's Annex I; this means most developed countries and countries with economies in transition.
Activity scope	A/R, Avoided Deforestation, Revegetation and Forest Management (depends on elected LULUCF reporting of the host party).
RL	Must demonstrate that project baseline is developed based on conservative assumptions.
Safeguards	No guidelines exist for social or environmental co-benefits in JI projects. Stakeholder consultations are part of the project approval process.
Leakage	Increased anthropogenic emissions are to be accounted for as leakage if the outside emissions resulted from the project activity.
Permanence	Loss of carbon stocks is captured in national inventories.
Additionality	Project-specific additionality has to be proven in the Project Design Document. CDM additionality tools can be used.
MRV	MRV for projects under JI Track 2 procedure similar to those in CDM projects. JI Track 1 projects have to follow host country rules on MRV.
Registries	Annex I countries must have in place national registries in order to record and track Kyoto units. Issuance of RMUs are limited by the fact that the issuance of ERUs depends on the availability of removal units (RMUs) in the host country.

32 CDM Rulebook Website. http://cdmrulebook.org/
33 Clean Development Mechanism. CDM Rulebook, Clean Development Mechanism Rules, Practice & Procedures.
34 Carbon Offset Research and Education. "Joint Implementation" Stockholm Environment Institute and GHG Management Institute. http://www.co2offsetresearch.org/policy/JI.html

A.2 National Law Standards

A.2.1 Australian Carbon Farming Initiative

Objective: Australia's Carbon Farming Initiative (CFI) enables domestic farmers and landowners to generate carbon credits for Australia's cap-and-trade program and to enter the Kyoto compliance market (through 2013).

History and Overview: In August 2011 the Australian Parliament passed enabling legislation for the CFI, with further amendments in May 2012. The initiative is open to all Australian landowners and can generate offsets for multiple markets, although the primary intent is to support Australia's upcoming ETS. The Australian government passed legislation for a cap-and-trade program in 2011, which allows 50% of an emitting entity's liability to be met with international offsets, through 2020. [35] For international REDD+ to be recognized in Australia, the government would need to pass additional regulations.

No mention of ISO standards is made in the CFI documents reviewed, but the National Carbon Offset Standard (NCOS) to which the CFI must adhere is based on ISO14040:2006, ISO 14044:2006, and ISO 14065:2007. [36] CFI credits should conform to the initiative's "integrity criteria" aiming to ensure that offsets are additional, permanent, accounting for all emissions sources and sinks, accounting for variability, measurable and verifiable, internationally consistent, and supported by peer-reviewed science. CFI credits also must adhere to the regulations of the recently revised NCOS.

Process: Some processes for the CFI are still being developed. At the time of writing, a single Environmental Planting forestry methodology had been approved although there were six under consideration. Methodologies may be submitted by private individuals, industry associations, or government agencies. Methodologies are evaluated by the Domestic Offsets Integrity Committee for their conformance with the CFI's integrity criteria (see Terminology above). Draft methodologies are published and subject to public comment and final approval by the Minister for Climate Change and Energy Efficiency.[37] Project developers commence projects by becoming a Recognized Offsets Entity (DVV of the CFI) and creating a registry account, followed by project approval by the Administrator, project implementation, project reporting and auditing, credit issuance, and closure or transfer of the project.[38]

35 Government of Australia. Clean Energy Act 2011. Part 1, Section 3 "Objects."
36 Australian Government Department of Climate Change and Energy Efficiency. National Carbon Offset Standard Version 2, released May 2, 2012.
37 Australian Government Department of Climate Change and Energy Efficiency Website. Guidelines for submitting methodologies.
38 Australian Government (2012). The Carbon Farming Initiative Handbook, Version 1.0. Available at: http://www.climatechange.gov.au/en/government/initiatives/carbon-farming-initiative/~/media/government/initiatives/cfi/handbook/CFI-Handbook-20120403-PDF.pdf

Main Design Elements

Element	Treatment [39, 40, 41, 42, 43, 44]
Scale	Project level
Geographical scope	"Positive list" identifies eligible activities, which may only occur within Australia.
Activity scope	Avoided deforestation, forest management, and reforestation.
RL	Reference levels and baselines will be addressed in specific methodologies as they are developed. Only one forestry methodology, Environmental Plantings, has been approved (August 2012) although several are under consideration.
Safeguards	Legislation includes a "negative list" of prohibited activities designed to protect biodiversity, including prohibition on planting of weed species, reforestation on areas of illegally-cleared native forest and legally-cleared native forest within 7 years of clearing. An "Indigenous Carbon Farming Fund" is in effect from July 2012 to develop low-cost methodologies and capacity building targeted for Indigenous Australians.
Leakage	Leakage will be addressed in methodologies as they are developed.
Permanence	CFI sequestration projects only (A/R) must store carbon for 100 years. If the proponent wishes to cancel the project they must relinquish credits to the administrator, purchase replacement credits, or supplement with credits from another project. A risk buffer contribution of 5% is levied upon all projects. Proponents do not have to return credits in the event of a natural disturbance but will not receive further credits until the pre-disturbance carbon stocks are restored.
Additionality	Two-part additionality test including (i) projects must not be required by law (regulatory surplus) and (ii) common practice test determined by activities on the positive list.
MRV	CFI project reports are required at least every 5 years, except for mature forests in sequestration projects. Audit reports from registered greenhouse/energy auditors are required, although some small projects may be exempted.
Registries	The Australian National Registry of Emissions Units serves as the registry for Australian Carbon Credit Units (ACCUs), which are divided into Kyoto compliant ACCUs and non-Kyoto ACCUs.

39 Australian Government Department of Climate Change and Energy Efficiency Website. Carbon Farming Initiative.
40 Australian Government Department of Climate Change and Energy Efficiency. (October 2011). Carbon Farming Initiative: Negative list guidelines.
41 Australian Government (2012). The Carbon Farming Initiative Handbook, Version 1.0
42 Australian Government Clean Energy Regulator (June 2012). Australian Carbon Credit Units.
43 Australian Government. Carbon Farming Initiative Act 2011: Provisions relating to indigenous land.
44 Australian Government (2012). The Carbon Farming Initiative Handbook, Version 1.0. Available at: http://www.climatechange.gov.au/en/government/initiatives/carbon-farming-initiative/~/media/government/initiatives/cfi/handbook/CFI-Handbook-20120403-PDF.pdf

A.2.2 New Zealand Permanent Forest Sink Initiative

Objective: The objective of the New Zealand ETS is to reduce GHG emissions while helping the country achieve its emission reduction targets as stipulated in the Kyoto Protocol. Since going into effect in the beginning of 2008, the Permanent Forest Sink Initiative (PFSI) supports establishment of permanent forests on land not previously forested.

History and Overview: The New Zealand ETS (NZ ETS) was launched in January 2008 when the forestry sector became the first industry to participate in the scheme.[45] Since its launch, the energy, industry, and transport sectors have also joined the NZ ETS. The New Zealand market accepts both international carbon credits recognized by the Kyoto Protocol as well as the domestic New Zealand Unit (NZU), which is equivalent to one tonne of carbon dioxide. These NZUs may then be sold on the NZ ETS to help other companies meet their obligations under New Zealand's climate change regulations. Under the PFSI, landowners can earn income for reforesting land not previously forested by selling credits to offset emissions from other sectors in the NZ ETS.

Process: Landowners of land that was not forested on January 1, 1990 are eligible to receive NZU's for every tonne of carbon sequestered from January 1st 2008 onward, under the stipulation that land must be registered by the end of 2012. NZUs need to be surrendered for carbon lost from pre-1990 forests. Carbon rights may be divorced from the land and participants in the scheme may either be landowners themselves, holders of registered forestry rights or land leases, or a party to a Crown Conservation Contract.[46] Because participation is voluntary in post-1989 forests, carbon stock changes on forests not registered by the landowner go to the Crown by default. If carbon reversals occur, owners must surrender NZU units to offset the emissions. Forestry NZUs comprised 13% of all credits surrendered in 2011 on the NZ ETS, with international CER, ERUs and RMUs making up over 70% of the market.[47]

Main Design Elements

Element	Treatment [48, 49, 50, 51, 52, 53]
Scale	Project level
Geographical scope	NZ forest activities, with links to international carbon markets.
Activity scope	A/R and SFM post-1989. Deforestation of pre-1990 forests punished.

45 Ministry of Agriculture and Forestry. (2011). Introduction to forestry in the Emissions Trading Scheme. New Zealand Government.
46 Ibid.
47 New Zealand Government. (2012) NZ ETS 2011 – Facts and Figures. http://climatechange.govt.nz/emissions-trading-scheme/building/reports/ets-report/nzets-2011-facts-and-figures-2012.pdf
48 Australian Government Department of Climate Change and Energy Efficiency Website. Carbon Farming Initiative.
49 Australian Government Department of Climate Change and Energy Efficiency. (October 2011). Carbon Farming Initiative: Negative list guidelines.
50 Australian Government (2012). The Carbon Farming Initiative Handbook, Version 1.0
51 Australian Government Clean Energy Regulator (June 2012). Australian Carbon Credit Units.
52 Australian Government. Carbon Farming Initiative Act 2011: Provisions relating to indigenous land.
53 Australian Government (2012). The Carbon Farming Initiative Handbook, Version 1.0. Available at: http://www.climatechange.gov.au/en/government/initiatives/carbon-farming-initiative/~/media/government/initiatives/cfi/handbook/CFI-Handbook-20120403-PDF.pdf

RL	The NZ ETS is built off of the Kyoto Protocol and uses 1990 as the reference year for forests. A requirement on pre-1990 forest landowners to surrender NZUs for every ton of CO2 emissions from deforestation effectively sets their baseline deforestation rate at 0%. All sequestration in forests post-1989 is considered above the baseline.
Safeguards	The reviewed rules do not specifically refer to safeguards.
Leakage	Leakage is managed by national inventories. At the project level it is indirectly addressed by the creation of a system that does not provide incentives for avoided deforestation (as penalties are only imposed where deforestation does occur).
Permanence	When deforestation occurs or carbon stocks are reversed, forest owners must surrender an equivalent number of units from the NZ ETS.
Additionality	All sequestration from post-1989 forests is considered additional. Pre-1990 forests are not eligible to create NZUs and therefore additionality is not addressed.
MRV	At the project level, landowners must comply with approved carbon accounting methodologies created by the Ministry of Agriculture and Forestry that are based on IPCC guidelines. Landowners of areas greater than 100 hectares must comply with the Field Measurement Approach (FMA),[54] with post-1989 forest owners submitting monitoring results at least every five years. Pre-1990 forest owners must submit results within one year after a deforestation event has occurred.
Registries	The New Zealand Emission Unit Register (NZUR) is a national, internet-based registry system for tracking forestry NZUs. The system manages reporting and reconciliation of emissions and register participants in the NZ ETS.[55] It is linked to the country's Kyoto registry.

A.2.3 Japan Offset Credit (J-VER) Scheme

Objective: The Japan Verified Emission Reduction (J-VER) Scheme promotes domestic voluntary GHG reduction/sink offset projects by the creation of carbon credits meeting international ISO standards.

History and Overview: The Japanese Ministry of the Environment began the program in 2008. J-VER issues credits for the period from 2008 to 2012, and ends in March 2013, when the Japanese Ministry of the Environment will determine its prospects for continuation.[56] J-VER is an a voluntary offset program that is linked for the ETS of the Saitama Prefecture, where the credits have compliance value. The standard records some of the highest carbon prices at an average of USD 119/tCO2e, although only 6% of the forest carbon credit market for Asia.[57] The high prices reflect the high marginal abatement costs of GHG emissions in Japan. Insiders have reported that they believe the program will continue after March 2013. Through 2011, AFOLU projects represented 95% of the overall share of J-VER projects validated in that time.[58] As of February 2012, 186 projects were registered, 60% of which operate under its forestry methodology.[59]

54 NZ Ministry for Primary Industries Website. Field Measurement Approach. http://www.mpi.govt.nz/news-resources/faqs/faq-field-measurement-approach
55 Chokkalingam, Unna. (2010) Design Options for a Forest Carbon Legal Framework for Lao PDR: Drawing lessons from across the globe. GTZ-CLiPAD.
56 State of the Forest Carbon Markets 2012, p. 74.
57 State of the Forest Carbon Markets 2012, pp. 12, 31.
58 State of the Forest Carbon Markets 2012, p. 74.
59 Kobayashi, N. (2012) Applicability of J-VER scheme to REDD+ project in Indonesia, http://www.iges.or.jp/jp/cdm/pdf/indonesia/20120216/NihonUniv_Konayashi.pdf

Process: J-VER is designed with Japan-only methodologies according to the ISO-14064 series.[60] Originally established for voluntary carbon offsetting, J-VER also may be used for compliance purposes (e.g. ETS).[61] Guidelines are provided specfically for J-VER carbon-offsetting and forest methodologies, with an emphasis on participation, transparency and accountability. As a co-benefit, proceeds from carbon credits are expected to benefit local environmental protection and economic devleopment.[62]

The scheme's operations are managed by four entities. The Offset credit (J-VER) Certification and Steering Committee (created by the Ministry of Environment) certifies emissions and issues credits and receives opinions from a Third-Party Committee, and a Methodology Panel. In turn, the Steering Committee submits decisions to the Certification Center of Climate Change, which acts as Secretariat of the Scheme.[63]

Main Design Elements

Element	Treatment [64, 65, 66]
Scale	Project level
Geographical scope	Japanese forests
Activity scope	Forest thinning, afforestation, accelerated sustainable forest management
RL	Follows gross-net method of calculating the annual amount of carbon sink in the project area (rather than baseline and credit method).
Safeguards	'Positive list' of project types and methodologies that meet Japanese sustainability criteria. Projects need to be developed in compliance with the eligibility and project design criteria of one of the identified project types.
Leakage	Under the "General Rules of the Offsetting Credit (J-VER) Scheme," projects must demonstrate "completeness" of emissions reductions/removal by sinks activities without any leakage.
Permanence	Three percent deposit required for buffering the reversal risk.
Additionality	Additionality determined by meeting GHG project types, technologies and eligibility criteria on positive list.
MRV	Monitoring must follow "Certification Standard for Forest Carbon Sink (J-VER) Scheme." Project validation and verification must be carried out by ISO 14065 accredited bodies.
Registries	J-VER Registry holds J-VERs for carbon offsetting and similar purposes.

60 ISO 14064-1:2006. Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals
61 Koyanagi, Y. (2011) Japan's Domestic Offset Mechanism: Japan Verified Emission Reduction (J-VER) Available at: http://www.cdm-mongolia.com/files/5_IGES_J-VER_5.pdf
62 Toda, E. Carbon Offsetting in Japan. http://www.env.go.jp/en/earth/ets/mkt_mech/co-japan.pdf
63 Toda, E. Ibid.,
64 Ministry of the Environment, Government of Japan, Offset Credit (J-VER) Scheme. http://www.j-cof.go.jp/pdf/pamph_15.pdf
65 Ministry of the Environment, Government of Japan, Forest Carbon Sink Becomes Carbon Offsetting Credit http://www.env.go.jp/en/earth/ets/mkt_mech/fcsb-coc.pdf
66 Hiroshima, T. (2012) "Trends and Issues on the Japan Verified Emissions Reductions (J-VER) scheme and carbon offset," Available at: http://repository.dl.itc.u-tokyo.ac.jp/dspace/bitstream/2261/51963/1/esrh127001.pdf

A.3 Subnational and Regional Initiatives

A.3.1 USA California

Objective: California is instituting a cap-and-trade program to enable it to meet the objective of its climate change legislation to reduce 2020 emissions to 1990 levels.[67]

History and Overview: In 2006, the State of California passed the Global Warming Solutions Act (AB 32), enabling the creation of a cap-and-trade system that will apply a cap on some entities as beginning in 2013, with other sectors brought under the cap in 2015.[68] The Air Resources Board (ARB) is responsible for implementation of the cap-and-trade program. When the cap-and-trade program goes into effect, ARB will immediately accept offsets sourced from US forest projects. A limited number of international offset credits may be accepted for use in California's trading program.[69] This may eventually include international REDD+ credits that are generated against state-level accounting. California signed a memorandum of understanding with Chiapas (Mexico) and Acre (Brazil) to cooperate on building these potential linkages. It is unclear if ARB protocols adhere to ISO standards, but third party verification bodies must adhere to ISO 14065.[70, 71]

Process: The ARB has created its own offset protocols for domestic offsets. They are similar to CAR in that there is a single protocol per offset type (one for US Forests). For domestic projects, once the project is established annual offset project data reports must be submitted with full verification every six years for a 100 year time period following the last issuance of ARB offset credits.

Main Design Elements

The following overview is only of the California Air Resources Board's Compliance Offset Protocol for U.S. Forest Projects. Although there is potential for international REDD+ to be included in the California market in coming years, this is not yet final and no guidance or standards have been released. Development of jurisdictional and nested REDD+ recommendations for ARB is currently underway by the Governors' Climate and Forests Task Force – REDD Offset Working Group.[72]

Element	Treatment [73, 74, 75]
Scale	Project level
Geographical scope	USA

67 Government of California. (2006). Assembly Bill 32. Chapter 4, Part 3, 38550.
68 Ibid.
69 Electronic communication from ACR program. 21 Nov 2012.
70 California Air Resources Board (October 2011). California Air Resources Board Greenhouse Gas Verification Program: Requirements for Accreditation of Verification Bodies and Verifiers.
71 ISO 14065:2007, Supra note 49.
72 See REDD Offset Working Group, http://stateredd.org/
73 California Air Resources Board (ARB) (2010) Compliance Offset Protocol for Forest Projects. http://www.arb.ca.gov/regact/2010/capandtrade10/cappt5.pdf
74 California Air Resources Board. (2011) Compliance Offset Protocol U.S. Forest Projects.
75 Approval of California offset registries and accredited verifiers will be posted on an ongoing basis to http://www.arb.ca.gov/cc/capandtrade/offsets/registries/registries.htm

Activity scope	A/R, IFM, Avoided Conversion
RL	BAU baseline must be modeled over 100 years for onsite carbon stocks as well as baseline harvested wood products. No update is required.
Safeguards	Regarding environmental safeguards, if commercial harvesting occurs in the project, "sustainable long-term harvesting practices" are required, by FSC certification or other options. Additionally, all projects must "promote and maintain a diversity of native species." Social safeguards are absent.
Leakage	"Secondary effects" must be accounted for, including activity shifting and a standard deduction for market leakage in harvested wood products (20% of difference in harvested volume between baseline and project scenario).
Permanence	Permanence is defined as 100 years (following issuance of offset credit for GHG reductions or removals from the project). Unintentional reversals are mitigated through the ARB buffer account based on project-specific risk evaluation. Intentional reversals require retirement of offset credits pursuant to the regulatory rules.
Additionality	ARB Protocols require a two-part additionality test including (i) regulatory surplus and (ii) a performance test indicating that the project goes beyond common practice.
MRV	Annual reports including estimation of on-site carbon stocks are required with third-party verification including site visits at least every 6 years.
Registries	Multiple registries can apply to become an approved ARB offset registry. As of October 2012 CARB has approved two offset project registries, ACR and the Climate Action Reserve.

A.3.2 Regional Greenhouse Gas Initiative (USA)

Objective: The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort among nine Northeastern and Mid-Atlantic US states to reduce power sector CO2 emissions 10% from 2009-2018.[76, 77]

History and Overview: The initiative went into effect at the beginning of 2009 and was the first GHG compliance market in the US.[78] US-based afforestation and reforestation is one of the eligible offset categories under RGGI, and no other forestry credits are permitted. Offsets can contribute up to 50% of an entity's compliance obligation.[79] RGGI does not currently accept, and is considered unlikely to accept, international offsets.[80] RGGI uses an approach to A/R projects wherein the regulations creating the "standard" for these project types comes from a combination of individual state legislation and the "Model Rule,"[81] a set of proposed regulations meant to guide the development of consistent offset regulations across the participating states.

76 Regional Greenhouse Gas Initiative Website.
77 Note that as of July 2012, the continuing participation of New Jersey was in jeopardy with the governor having vetoed the continued membership in RGGI and the legislature unlikely to successfully override the veto.
http://www.pointcarbon.com/news/1.1944090?&ref=searchlist
78 Regional Greenhouse Gas Initiative. Program Design. http://www.rggi.org/design.
79 Stevens, K., G. DeAngelo, S. Brice, (2010) Comparative Study of Selected Offset Protocols for Greenhouse Gas Reduction and Reporting Programs. Report for the Florida Department of Environmental Protection.
80 WB State and Trends
81 See Model Rule "Subpart XX-10.1"

Process: As RGGI does not use multiple methodologies for a single project type, additional methodologies cannot be proposed.[82]

Main Design Elements

Element	Treatment [83, 84, 85, 86]
Scale	Project level
Geographical scope	Northeastern and Mid-Atlantic US, participating states
Activity scope	A/R
RL	Project baseline is defined as the onsite carbon stocks at commencement of the A/R project among required carbon pools. Unlike most other standards, soil carbon is a required pool.
Safeguards	Required to use "mainly" native species. FSC certification is required for projects involving timber harvesting.
Leakage	No provisions
Permanence	Required permanent conservation easement. Emission reductions from A/R projects only are discounted by 10% to account for potential reversals.
Additionality	RGGI uses a standardized approach to additionality requiring projects (i) started after Dec. 20 2005, (ii) pass the regulatory surplus test, (iii) cannot receive funding/incentives from other programs funded by electricity or natural gas ratepayers, (iv) cannot be awarded credits from another GHG program, (v) cannot include electricity generation.
MRV	Independent validation (called "consistency determination") at project outset, with annual independent monitoring and verification report.
Registries	RGGI CO_2 Allowance Tracking System (COATS) serves as the registry for "CO_2 offset allowances." Unlike nearly all other CO_2 trading programs, RGGI offsets are measured in short tons as opposed to metric tons.[87]

A.4 Voluntary Carbon Market Standards

A.4.1 Verified Carbon Standard

Objective: The Verified Carbon Standard (VCS) was founded to "provide a robust quality assurance standard for GHG emission reduction projects with the purpose of issuing credits for voluntary markets."[88]

82 Regional Greenhouse Gas Initiative. (2008) Regional Greenhouse Gas Initiative Model Rule: Part XX CO2 Budget Trading Program.
83 Stockholm Environment Institute. Regional Greenhouse Gas Initiative. Carbon Offset Research & Education (CORE).
84 Regional Greenhouse Gas Initiative Website.
85 Stevens, K., G. DeAngelo, S. Brice, (2010) Comparative Study of Selected Offset Protocols for Greenhouse Gas Reduction and Reporting Programs. Report for the Florida Department of Environmental Protection.
86 Regional Greenhouse Gas Initiative. (2008) Regional Greenhouse Gas Initiative Model Rule: Part XX CO2 Budget Trading Program.
87 A short ton is equal to 2,000 pounds (907.18474 kg), whereas a metric ton is equal to 1,000 kilograms (2,204.62262 pounds).
88 Verified Carbon Standard Website. Our Mission. http://v-c-s.org/who-we-are/mission-history

History and Overview: The VCS Association was founded in 2005 by the Climate Group, the International Emissions Trading Association, and the World Economic Forum to provide "greater quality assurance in voluntary markets." It is an independent, non-profit organization headquartered in Washington, DC.[89] VCS provides a general standard (latest version, 3.3) against which a large number of project types are validated, with the standard built upon ISO standards ISO 14064-2:2006,[90] ISO 14064-3:2006[91] and ISO 14065:2007.[92] The VCS is the major voluntary carbon standard comprising 58% of 2011 overall voluntary market share [93] with 105 million carbon credits (VCUs) for all project types issued[94] cumulatively at the time of writing. Of the 738 total projects validated to date under VCS, over 35 corresponded to the overall AFOLU project type classification.[95] In that year, REDD projects under the VCS reduced 2.5 MtCO2e from 12 projects across different development stages.[96] At the time of writing, the VCS counts eight REDD+ projects at some stage of development on its website.[97]

REDD+ projects, as all projects, must adhere to the principles of the VCS Program; each VCU must correspond to real, measurable, and additional GHG reductions or removals, it must be independently audited, unique, transparent, and conservative. The VCS Standard (current version, 3.3) is comprised of criteria and procedures, and approved methodologies. REDD+ projects are subject to the additional Agriculture, Forestry, and other Land Use (AFOLU) Requirements (current version, 3.3). Specific methodologies define a specific set of criteria and procedures for a given project type (for example REDD+). A single project type may use multiple approved methodologies to combine project types (such as Afforestation, Reforestation and Revegetation (ARR) with REDD).[98] Methodologies can be further divided into modules—components applied to perform a specific methodological task. Tools are a type of module used for performing a specific analysis.[99]

Process: Projects developed under VCS must (i) choose an approved methodology *or* develop a new one for approval, (ii) submit a project description (PD) using the VCS PD template for validation by a Validation/Verification Body (VVB), (iii) have emission reductions verified by a VVB, (iv) register the project with a VCS registry operator and request issuance of VCUs, the unit of VCS credits.

As of July 2012, VCS has ten approved methodologies under the scope of REDD+ and generally accepts CDM A/R methodologies. Additionally, Climate Action Reserve (CAR) protocols are accepted under VCS, although CAR's forest protocol was still pending approval at the time of publication. VCS permits methodologies (and revisions), modules, and tools to be submitted for approval. These are first posted

89 Verified Carbon Standard Website. Who we are. http://v-c-s.org/who-we-are
90 "Greenhouse gases -- Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements." ISO Website: http://www.iso.org/iso/catalogue_detail?csnumber=38382
91 "Greenhouse gases -- Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions." ISO Website: http://www.iso.org/iso/catalogue_detail?csnumber=38700
92 "Greenhouse gases -- Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition." ISO Website: http://www.iso.org/iso/catalogue_detail?csnumber=40685
93 Peters-Stanley, K. Hamilton. (2012). Developing Dimension: Peters-Stanley, K. Hamilton. (2012). Developing Dimension: State of the Voluntary Carbon Market 2012. Ecosystem Marketplace publication. Carbon Market 2012. Ecosystem Marketplace publication.
94 Electronic communication from VCS program, 19 Nov 2012.
95 Electronic communication from VCS program, 19 Nov 2012.
96 State of Voluntary Carbon Markets, 2012, p. 28.
97 Website: http://www.vcsprojectdatabase.org/ (Keyword search "REDD"). Last checked 19 Nov 2012.
98 Electronic communication from VCS program, 19 Nov 2012.
99 Verified Carbon Standard. VCS Program Definitions, VCS Standard, Version 3.3 (Oct 2012) Available at: http://v-c-s.org/sites/v-c-s.org/files/VCS%20Standard%2C%20v3.3.pdf

online for a global stakeholder consultation, and then they are independently assessed by two VVBs and approved by the VCS Association.

VCS has until recently only been a standard for project-level REDD+ activities. In October 2012, VCS released their final requirements for *Jurisdictional and Nested REDD+ (JNR)*, which provides requirements for nested, subnational, and national scale REDD+ and is the first global standard for accounting and crediting national and subnational jurisdictional REDD+ programs. The information below regarding main design elements for JNR is from Version 3 released in October 2012.[100]

Main Design Elements

Element	Treatment [101, 102, 103]
Scale	Project- and jurisdictional-level (JNR)
Geographical scope	International
Activity scope	Project Scale: Five general AFOLU categories: Afforestation, Reforestation and Revegetation (ARR), Agricultural Land Management (ALM), Improved Forest Management (IFM), REDD, Wetland Restoration and Conservation (WCR). Nested/Jurisdictional Scale: All activities within a national and/or subnational jurisdiction, as selected by the jurisdiction.
RL	Project Scale: Business-As-Usual (BAU) baseline revalidated every ten years. Information inputs depend on methodology. Nested/Jurisdictional Scale: 10 year historic baseline, updated every 10 years. Adjustment for national circumstances is possible. If a baseline already exists for a compliance program, whichever is more conservative shall be used. No spatial overlap is permitted with activity data.
Safeguards	Project Scale: VCS requires any potential negative social and environmental impacts to be identified and mitigated. Most projects also apply CCB or another co-benefits standard. Nested/Jurisdictional Scale: Must address and respect safeguards from Annex 1 of 1/CP.16 UNFCCC Cancun Agreements and provide information on complementary safeguard or co-benefit standards that are used.
Leakage	Project Scale: Leakage is addressed through leakage sharing agreements, a leakage belt, or a leakage deduction tool. Nested/Jurisdictional Scale: National jurisdictions do not need to account for leakage but should mitigate it to the extent possible. Subnational jurisdictions must estimate and deduct leakage that may occur outside the jurisdiction but within the country.
Permanence	Project Scale: A 10-60% buffer is required, determined by the application of the AFOLU Non-permanence Risk Tool. Nested/Jurisdictional Scale: A Jurisdictional Non-Permanence Risk Tool is in development.
Additionality	Project Scale: Must use Tool for the Demonstration and Assessment of Additionality in VCS AFOLU Project Activities, v. 3.0 (Adapted from CDM A/R Additionality Tool). This includes four steps, (i)

100 Verified Carbon Standard. (Oct 2012). Draft Jurisdictional and Nested REDD+ (JNR) Requirements. Available at: http://v-c-s.org/sites/v-c-s.org/files/Jurisdictional%20and%20Nested%20REDD%2B%20Requirements%2C%20v3.0.pdf
101 Verified Carbon Standard. (Oct 2012). Draft Jurisdictional and Nested REDD+ (JNR) Requirements. Available at: http://v-c-s.org/sites/v-c-s.org/files/Jurisdictional%20and%20Nested%20REDD%2B%20Requirements%2C%20v3.0.pdf
102 Verified Carbon Standard. (Oct 2012). Agriculture, Forestry and Other Land Use (AFOLU) Requirements, section 3.1.5. Available at: http://v-c-s.org/sites/v-c-s.org/files/AFOLU%20Requirements%20v3.3_0.pdf
103 Electronic communication from VCS program, 19 Nov 2012.

	identification of alternative land use scenarios, (ii) investment analysis, (iii) barriers analysis, (iv) common practice analysis. Nested/Jurisdictional Scale: Additionality is factored into the jurisdictional baseline. If projects are credited directly, they must use an approved AFOLU methodology to assess additionality.
MRV	Project Scale: Required intervals for monitoring vary by methodology and the parameter monitored. Some methodologies require annual monitoring of some parameters, while others require monitoring only every 10 years. Monitoring requires verification by a VVB, following this VCUs are issued. Nested/Jurisdictional Scale: Jurisdictional Monitoring Report Template to be developed and submitted at least every 5 years. Nested and subnational projects may monitor and report at different intervals than the larger jurisdiction, but must also monitor and synchronize their reporting with the larger jurisdiction at least every 5 years.
Registries	Project Scale: The VCS Project Database is supported by three registry operators: NYSE Blue, Markit, and Caisse des Depots. Nested/Jurisdictional Scale: Jurisdictional programs and nested projects use the VCS registry system, domestic registries may also be developed by jurisdictions.

A.4.2 American Carbon Registry

Objective: The American Carbon Registry (ACR) has been established as a "voluntary offset program with strong standards for environmental integrity and transparency" with a view towards future US federal and regional GHG regulatory programs.[104] Like its parent non-profit Winrock International, ACR pursues a mission of "working with people in the United States and around the world to empower the disadvantaged, increase economic opportunity, and sustain natural resources."[105]

History and Overview: ACR was founded in 1996 as the GHG Registry and currently functions as a non-profit enterprise of Winrock International.[106] ACR has a comprehensive *American Carbon Registry Standard* (current version, 2.1) seven approved REDD+ methodologies, and in October, 2012 published the ACR *Nested REDD+ Standard v1.*[107] To date, eight AFOLU sector projects have been validated under the ACR out of a total of 68 projects through 2011. Overall, AFOLU projects made up 64% of the total of project types transacted in 2011.[108]

ACR standards establish uniform technical criteria, methods, processes and practices and are based on ISO 14064-3:2006 and ISO 14065:2007. REDD+ projects under the ACR must adhere to the American Carbon Registry Standard (v 2.1), as well as the Forest Carbon Project Standard (v 2.1) and potentially the Nested REDD+ Standard (v1.0). Methodologies are defined as systematic explanations for how the project baseline scenario(s) were established as well as an estimation of emissions reductions and removals, following scientific good practice.[109]

104 American Carbon Registry Website. About Us. http://americancarbonregistry.org/
105 See http://www.winrock.org/about_us.asp.
106 American Carbon Registry Website. About Us. http://americancarbonregistry.org/
107 American Carbon Registry Nested REDD+ Standard Version 1.0 (October 2012). http://americancarbonregistry.org/carbon-accounting/acr-nested-redd-standard-v1.0
108 State of Voluntary Carbon Markets, 2012, p. 66
109 American Carbon Registry. (June 2012). Validation and Verification Guideline, Version 1.1

Process: Projects developed under ACR submit a GHG Project Plan for internal review and certification by ACR. Once certified, GHG Project Plans undergo independent third party validation. Emissions reductions must be verified at least every five years by a VVB, including a field visit to the project site. Following this the project proponent submits a verification statement. ACR has seven approved methodologies under the scope of REDD+, and CDM methodologies are generally accepted.

Methodologies can be independently developed to be evaluated and approved through scientific peer review and public comment.[110]

Main Design Elements

Element	Treatment [111, 112]
Scale	Project- and projects nested in jurisdictional-level programs
Geographical scope	International
Activity scope	Project Scale: Full Scope of REDD+ including REDD, A/R, and IFM Nested/Jurisdictional Scale: Project-level activities within a jurisdictional accounting framework.
RL	Project Scale: Baseline approach. A/R baselines are the on-site carbon stocks prior to site preparation. IFM baselines rely upon identification of credible alternative forest management scenarios from the proposed project activity (historical or common approaches in the area), including wood products. For REDD the *ACR Tool for Determining REDD Project Baseline and Additionality* should be applied. REDD baselines for planned deforestation projects are what would have happened in the absence of project activities (as determined by documentation) and for unplanned deforestation baselines should be modelled. Performance standard approaches to baselines may be accepted for IFM projects. Nested/Jurisdictional Scale: Jurisdictional baseline should be conservative and divided by selected REDD+ activities, to be re-evaluated every 10 years (or more frequently when a triggering event occurs). The baseline unit may be determined by jurisdictions - i.e. the jurisdictional baseline may consist of emission/removal factors, or alternately only activity rates (combined with project-level emission/removal factors).
Safeguards	Project Scale: "Net positive" environmental and community impacts are required. ACR requires a community and environmental impact assessment, and provides tools that may be used to assist in that assessment, but does not mandate a particular process or tool be used. Nested/Jurisdictional Scale: Must address and respect safeguards from Annex 1 of 1/CP.16 UNFCCC Cancun Agreements. Must apply one of ACR-approved project-level safeguard standards (IFC Sustainability Framework and Performance Standards, World Bank Safeguards, or CCBA Project Design Standards) and jurisdictional safeguard standards (UN REDD Program Social and Environmental Principles and Criteria, World Bank Forest Carbon Partnership Facility Strategic Environmental & Social Assessment (SESA) and the Environmental and Social Management Frameworks (ESMF), or REDD+ Social & Environmental Standards (REDD+ SES) Standards. Must additionally meet requirements on free, prior and informed consent (FPIC), no relocation, and positive social and environmental benefits.

110 American Carbon Registry Website. Standards and Methodologies.
111 American Carbon Registry. (2010). The American Carbon Registry Standard. Version 2.1.
112 American Carbon Registry. (2010). The American Carbon Registry Forest Carbon Project Standard. Version 2.1.

Leakage	Project Scale: For A/R only activity shifting is usually accounted for. Market leakage is only accounted for in IFM if the project activities will reduce total wood production by more than a percentage below the baseline (percentage specified in IFM methodologies) during a crediting period. In REDD, market and activity shifting leakage should be accounted for using default leakage deductions, or other tools proposed in methodologies. Nested/Jurisdictional Scale: No need to account for leakage outside national jurisdiction borders; subnational jurisdiction must have a system to monitor leakage outside borders. Leakage Buffer Account to correct for temporal discrepancy between crediting by ACR and jurisdictional assessment and attribution of leakage to nested projects.
Permanence	Project Scale: ACR currently approves use of the VCS AFOLU Buffer Tool can be used. Projects must be at least 40 years in length and risk is mitigated through a buffer account or insurance. ERTs deposited into the buffer pool or retired to mitigate reversals may be of any type and vintage, i.e. a project proponent may purchase and deposit other ERTs to make its buffer contribution. ACR has also approved use of a Carbon Reduction Guarantee product to mitigate reversals in forest carbon projects.[113] Nested/Jurisdictional Scale: Nested projects to assess and mitigate as under ACR projects; jurisdictions to reassess non-performance risk at least once every 5 years.
Additionality	Project Scale: The *ACR Tool for Determining REDD Project Baseline and Additionality* is used and includes a three pronged approach for testing for (i) regulatory surplus, where the project activities must go beyond any activities required by federal, state, or local law, (ii) common practice, and (iii) implementation barriers. Nested/Jurisdictional Scale: Nested projects within a jurisdiction with an approved baseline do not need to prove additionality; projects lacking such must register as non-nested and follow project-level requirements.
MRV	Project Scale: Following successful validation, ACR requires third party verification at least every 5 years. Nested/Jurisdictional Scale: Same project-level verification plus jurisdiction-level assessment and mitigation of contractual, political, natural disturbance and non-performance risks.
Registries	Project Scale: The ACR registry is maintained by APX and supports voluntary market projects as well as upcoming California compliance market offsets, for which it has been approved as a registry. Carbon credits are issued as Emission Reduction Tons (ERTs). Nested/Jurisdictional Scale: A jurisdictional registry must publicly document all ERRs credited to nested REDD+ activities in a jurisdiction for ACR to register a REDD+ project nested within a jurisdictional accounting framework (to avoid double-counting).

A.4.3 Climate Action Reserve

Objective: The Climate Action Reserve (CAR) was founded to "promote the reduction of greenhouse gas emissions by pioneering credible market-based policies and solutions" and is a sister organization of The Climate Registry.[114]

113 See http://www.carbonreductioncorporation.com/pdf/ACR.pdf and http://www.carbonreductioncorporation.com/.
114 Electronic communication from Climate Action Reserve, 15 Nov 2012. (Website: www.theclimateregistry.org)

History and Overview: CAR began as a project of the California Climate Action Registry and has since developed as an independent entity. CAR focuses primarily on the US market, although it is in the process of developing a Forest Project Protocol for Mexico. The standard is based on ISO standards 14065:2007 and 14064-3: 2006.

Of a total of 126 projects validated through 2011 under the CAR, six fell under the AFOLU sector type.[115] At the time of writing, CAR lists on its website 11 reforestation projects, 12 avoided conversion projects, five conservation-based forest management projects, 44 improved forest management projects, and one urban forestry project, all at various stage of development.[116]

The CAR standard is regulated by the *Climate Action Reserve Program Manual* (hereafter "Program Manual"), the *Verification Program Manual,* and specific project protocols for each project type. The *Program Manual* describes the principles, general guidelines, and process rules for registering and creating offsets. All US forestry projects are covered by the *Forest Project Protocol V3.*2 (version 3.3 is in development), with the exception of urban forestry projects that have their own protocol. CAR is in the process of creating a Mexico forest project protocol, for which a draft was released in November 2011.[117] CAR does not use "methodologies" in the same sense as some of the other standards. CAR instead has one single encompassing project *protocol* for each project type. This is in contrast to other standards, such as VCS with ten REDD+ methodologies and ACR with seven.

Process: Projects developed under CAR first create an account and submit a range of initial required supporting documents including a Project Design Document. Projects that are deemed eligible by Reserve Staff submit remaining required documents and undergo third party verification at the required time interval (at least every 6 years). Upon approval of the verification documents, Climate Reserve Tonnes (CRTs) are issued.[118]

In July 2012 all CAR protocols were accepted under VCS, with the exception of the forest protocol, which was under review. Additionally, CRTs can be converted to VCUs, but not vice versa.[119]

Main Design Elements

Element	Treatment [120, 121, 122]
Scale	Project-level
Geographical scope	Only in US and Mexico.
Activity scope	Full Scope including Avoided Conversion (REDD), A/R, and IFM.

115 State of Voluntary Carbon Markets, 2012, p. 67.
116 Climate Action Reserve Website, http://www.climateactionreserve.org/how/projects/ (Option "View Projects").
117 For more information see: http://www.climateactionreserve.org/how/protocols/mexico-forest/
118 Electronic communication from Climate Action Reserve, 15 Nov 2012. ("Site visit verification at least every 6 years for Improved Forest Management and Avoided Conversion with optional desktop verification in the interim. Reforestation Projects may defer the second site visit verification for longer than 6 years.")
119 Climate Action Reserve Website. Reserve FAQs.
120 Climate Action Reserve. US Forest Project Protocol. Version 3.2
121 Climate Action Reserve. (2011). Mexico Forest Protocol, Draft for Public Review, Version. 1.0.
122 Electronic communication from Climate Action Reserve, 15 Nov 2012.

RL	A 100-year baseline modeling of carbon stocks is used for all required and selected optional carbon pools, which is not to be modified during this 100 year period.
Safeguards	US Projects: The Program Manual requires demonstration that projects do not "undermine progress on other environmental issues… [including] environmental justice." Compliance with relevant laws is required. Co-benefits are not required, but steps are required to be taken to minimize harm. The Program Manual explicitly notes that CAR is designed to be used with additional safeguard standards. Mexico (in development): Projects likely would be required to be additionally verified under CCBA or Forest Stewardship Council (FSC) to comply with the principles of the Cancun Agreements.
Leakage	CAR defines the GHG assessment boundary as including all sources, sinks, and reservoirs that could be significantly impacted by project activity. Leakage is implicitly included in this. Also, Sustainable Harvesting Practices requirement is applied across all of forest owner's landholdings within the same ecological region, which further addresses activity shifting leakage.
Permanence	Emission reductions should be permanent for more than 100 years. Project proponents must sign a Project Implementation Agreement requiring them to retire CRTs in the event of a reversal to compensate. Permanence is also managed by required contributions to a buffer pool.
Additionality	CAR uses a "standardized" approach to additionality whereby project characteristics are measured against sectoral standards to determine additionality, as opposed to a project-based approach that compares a project scenario to alternative scenarios.
MRV	Third party verification is required at least every 6 years.
Registries	CAR has its own registry supporting voluntary market projects that hosts offset projects across North America including the upcoming California compliance market, for which it has been approved as a registry.

A.4.4 CarbonFix

Objective: CarbonFix seeks to set a "quality benchmark for worldwide climate forestation projects."[123]

History and Overview: CarbonFix as an organization was created in 1999 to promote A/R projects through the CDM. In September 2012, the Gold Standard Foundation announced that it would acquire the CarbonFix Standard to establish the foundation of its expansion into the land-use and forests sector.[124]

The CarbonFix Standard dates to 2007 and focuses on afforestation, reforestation, natural regeneration, and agro-forestry projects. CarbonFix does not accept avoided deforestation (RED) projects. CarbonFix does not advertise in its standard or on its website which specific ISO standards it adheres to although general reference to ISO standard(s) is made. CarbonFix can be considered a "boutique" standard and as such had a very small market share in the 2010 forest carbon market (0.1%) but attained some of the highest prices.[125] Through 2011, five projects have been validated, all in the AFOLU sector.[126] There is a

123 CarbonFix Website: http://www.carbonfix.info/CarbonFix-Standard.html?PHPSESSID=1cj48qahe4891iq9dmvjd63a4
124 The Gold Standard Foundation was established in 2003 by WWF and is a certification standard for both voluntary and compliance markets such as the CDM. As of July 2012, over six million voluntary market credits have been issued and nearly one million compliance CERs have been issued. Gold Standard Foundation Website. Frequently Asked Questions. http://www.cdmgoldstandard.org/
125 Diaz, D., K. Hamilton, E. Johnson (2011) State of the Forest Carbon Markets 2011. Ecosystem Marketplace.

single CarbonFix Standard (v 3.2) comprised of Terms, Criteria & Methodology, and Procedures.[127] CarbonFix has a single methodology comprised of various templates that must be completed on all aspects of the methodology, for example, additionality, baseline, leakage, etc.

Process: The first step in creating CarbonFix offset credits is an initial pre-validation desk review conducted by the CarbonFix technical board to determine whether the project is likely to satisfy CarbonFix regulations. This is different than many other standards in which a pre-validation is carried out by an independent VVB. Following a successful pre-validation the project developer submits the project for initial certification by a VVB, followed later by a monitoring certification (to verify emission reductions and removals, to be completed at least every five years), and possibly a management unit certification.[128]

Main Design Elements

Element	Treatment [129]
Scale	Project-level
Geographical scope	International
Activity scope	Only afforestation, reforestation natural revegetation and agroforestry allowed.
RL	The baseline is the sum of carbon stocks on the eligible planting area prior to planting. Carbon pools include above and below ground woody biomass and non-woody biomass.
Safeguards	CarbonFix is designed as an all-inclusive GHG quantification and safeguard standard, but can be used with other safeguard and co-benefit standards. Requires proving land cover eligibility for A/R and net positive ecological and socio-economic impacts. Includes protection of endangered species, buffering waterways, consulting stakeholders and not displacing people. In some cases FSC and CCBA criteria can substitute for those required by CarbonFix.
Leakage	All project activities with a potential impact on leakage are to be accounted for, but there is no defined leakage belt as in other standards. Market-shifting leakage is not mentioned, although this is not relevant in A/R projects.
Permanence	A 30% buffer contribution is required across all projects. Both ex-post and ex-ante crediting are possible.
Additionality	The CDM A/R Additionality Tool is used with (i) barrier analysis, (ii) investment analysis, and (iii) common practice analysis.
MRV	Monitoring and validation/verification is a 3-step process with (i) initial certification of the project, (ii) a monitoring certification after implementation, (iii) and management unit certification for project expansion. Monitoring certifications should occur at least every 5 years.
Registries	Markit Environment Registry acts as the registry for CO2-certificates.

126 State of Voluntary Carbon Markets, 2012, p. 66.
127 Terms provide definitions used in the standard. The Criteria & Methodology describes the criteria and process that must be used to be in conformance with the standard. Procedures refer to the way the information must be presented for validation and certification.
128 CarbonFix Standard, Version 3.2. The management unit certification enables scaling up of the same project by adding new management units.
129 CarbonFix Standard, Version 3.2. http://www.carbonfix.info/chameleon//outbox//public/214/CFS-v32.pdf

A.4.5 Plan Vivo

Objective: Plan Vivo is a "framework for developing and managing community-based land-use projects with long-term carbon, livelihood and ecosystem benefits."[130] The standard aims to serve as a stand alone, all-inclusive standard incorporating social and biodiversity safeguards along with emissions reductions, similar to CarbonFix.

History and Overview: The Plan Vivo Standard is designed to be accessible for smallholder- and community-based projects, and arises out of a pilot project originally supported by the UK Department for International Development (DFID). The standard is underpinned by four principles: (i) livelihoods, (ii) transfer [of capacity] and continuous improvement [of projects], (iii) restoring and conserving native ecosystems, and (iv) equitable distribution of benefits.[131] The standard is not expressly based on ISO standards but verification bodies must be accredited by an international certification agency, of which ISO 14064 is one option.[132] Plan Vivo has a small but steadily growing market share,[133] and had the highest ratio of issued to retired credits through 2011.[134]

Process: Plan Vivo projects are encouraged to start as pilot projects and scale up regionally. The structure of the standard reflects this. Projects first, (i) submit a Project Idea Note to be evaluated by the Plan Vivo Foundation, next (ii) a Project Design Document is submitted and evaluated, (iii) the project runs a "pilot activity cycle" where it is implemented and subsequently validated by the Plan Vivo Foundation or a selected expert reviewer, and later registered, (iv) third-party VVB conduct a verification every five years, and projects normally expand during this time period.[135]

Main Design Elements

Element	Treatment [136, 137]
Scale	Project-level
Geographical scope	International
Activity scope	A/R (only non-commercial plantations), agroforestry, avoided deforestation, forest conservation and restoration. Standard is targeted towards small scale projects.
RL	Baseline must be "clear and credible", no further specification is provided.
Safeguards	Safeguard considerations are integrated into the principles of the core standard. Requires direct payment to communities, 100% native species, as well as monitoring of benefit distribution and operational costs in reporting.

130 Plan Vivo Website. About Plan Vivo. http://www.planvivo.org/about-plan-vivo/
131 Plan Vivo Website. Plan Vivo Principles. http://www.planvivo.org/what-is-plan-vivo/
132 Plan Vivo Website. Validation and Verification. Additionally, Plan Vivo notes that the standard is designed to ensure completeness, consistency, accuracy and transparency in line with ISO principles.
133 State of the Forest Carbon Markets, 2012, p. 30. ("Volumes contracted under the Plan Vivo program grew from .2 MtCO2e in 2010 to 1 MtCO2 e in 2011 . . . ").
134 Ibid. p. 72. For all years until 2011, Plan Vivo had an issued to retired ratio of 1.2 to 1; the next closest ratio was VCS of 3to1.
135 Electronic communication from Plan Vivo Foundation, 16 and 20 Nov 2012. (reporting that most projects scale up, based on annual data).
136 Plan Vivo. (2008). The Plan Vivo Standards.
137 Reference Section, Plan Vivo Website: http://www.planvivo.org/tools-and-resources/reference-materials/ (offering technical methods and manuals).

Leakage	Sources of leakage should be identified and mitigation measures implemented; further guidance is found in the Plan Vivo Guidance Manual and in the technical specification template.
Permanence	A risk buffer is used to ensure permanence, with a minimum 10% contribution although the technical expert panel may set it higher.
Additionality	Additionality tests include (i) project additionality demonstrated by no support from external legislation or commercial interests, (ii) barriers analysis, and (iii) common practice analysis.
MRV	Annual reports are submitted to the foundation to describe progress and demonstrate conformance. Third party verification is required at least every 5 years.
Registries	Markit Environment Registry acts as the registry for Plan Vivo Certificates (PVCs).

A.4.6 Panda Standard (China)

Objective: As the first voluntary carbon standard specific to China, the Panda Standard (PS) seeks to provide transparency and credibility in the market and advance China's poverty alleviation objectives through investment in rural China.[138]

History and Overview: The Panda Standard arises out of the concern for the livelihoods and exposure to climate change impacts of China's rural poor. It was founded in 2009 by a mix of public and private organizations including the China Beijing Environment Exchange, BlueNext S.A., Winrock International, and the China Forestry Exchange.

The Panda Standard is based on ISO standards *ISO 14064-2* [139] and *ISO 14064-3*.[140] Eligible PS projects must comply with the standard's seven core principles, (i) real, (ii) additional, (iii) measurable, reportable and verifiable, (iv) unique, (v) permanent, (vi) demonstrate ancillary benefits, and (vii) be unambiguously owned. The structure of PS is somewhat similar to VCS or ACR in that there is an overarching PS Standard as well as PS AFOLU requirements, and multiple methodologies may be developed to meet these standards and requirements. The *PS-AFOLU Sectoral Specification*, developed by Winrock International, provides requirements for all eligible AFOLU activities divided into the categories of Forest Management (FM), Forestation and Vegetation Increase (F-V), Cropland Management (CM), and Grassland Management (GM).

Process: As the Panda Standard is fairly new, some processes are not yet developed in depth. The PS has detailed its methodology approval process as follows: (i) methodologies are proposed; (ii) a technical committee pre-approves them; (iii) a public comment period takes place; (iv) the technical committee revisits the methodologies; and (v) final approval is given. The entire process is designed to take 50 working days.[141] Currently-approved methodologies include CDM large and small scale A/R methodologies, a *Methodology for Revegetation of Degraded Land* developed by Winrock International, and additional A/R methodologies under development. PS projects are audited by third parties. Designated Operational Entities

138 See http://www.pandastandard.org/.
139 ISO 14064-2:2006.
140 ISO 14064-3:2006.
141 Panda Standard Website: www.pandastandard.org.

under the CDM are de facto approved as auditors, whereas other entities and persons must be approved by the PS Secretariat.[142]

Main Design Elements

Element	Treatment [143, 144]
Scale	Project level
Geographical scope	China
Activity scope	Improved Forest Management (IFM) and Forestation and Vegetation Increase (F-V) (A/R)
RL	Baselines must comply with approved PS-AFOLU Methodologies. Only CDM large and small-scale A/R methodologies and a *Methodology for Revegetation of Degraded Land* are currently approved although others are under the approval process.
Safeguards	'Ancillary benefits', analogous to safeguards, must be documented along with stakeholder consultation processes. A mitigation plan may be required for on and off-site negative impacts of project activities. More detail is expected as methodologies are approved. Projects can also apply the *PS Poverty Alleviation Criteria Tool*, which may give project credits special designation as poverty-alleviating.
Leakage	Leakage must be assessed, quantified, and mitigated. Both market and activity shifting leakage may be included. For revegetation of degraded lands, leakage resulting from the displacement of pre-project agricultural activities must be calculated using the CDM AR Tool "Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity."
Permanence	A *Panda Standard Risk Analysis Tool* (in development) is used to determine the quantity or percent of PS Credits that must be deposited in the Panda Buffer Pool to mitigate reversal risks. Contribution to the buffer pool is determined based on the project-specific risk rating, but contributions can come from that specific project or any other project (PS Credits can be bought from another project for this purpose).
Additionality	Three-prong additionality test, including a (i) regulatory compliance test,[145] (ii) common practice test, (iii) and barriers test for investment, technological, or institutional barriers. Alternatively, a performance standard approach can be used if a methodology is developed that develops appropriate performance benchmarks.
MRV	The Panda Standard provides general requirements for the precision of monitoring, but more detail is expected to be forthcoming in methodologies. Projects are third-party audited.
Registries	The Panda Standard Registry (currently under development) will issue Panda Standard Credits.

142 Ibid.
143 Panda Standard. (2011). Panda Standard Sectoral Specifications for Agriculture, Forestry, and Other Land Use (PS-AFOLU).
144 Panda Standard. (2009). Panda Standard, v1.0.
145 Note the difference of this regulatory test which tests for compliance with regulations vs. regulatory surplus tests used by many other standards wherein the project must demonstrate that it surpasses and is not required by regulations.

A.4.7 Brasil Mata Viva (Brazil)

Objective: The Brasil Mata Viva (BMV) standard aims to align environmental, social, and economic factors to result in sustainable action plans in rural areas through the generation and sale of sustainability credits.

History and Overview: The inception of BMV and its standard can be traced to Brazilian federal government legislation requiring 80% of land in the Amazon to remain under forest cover.[146] A group of farmers in Mato Grosso built relationships with other partners to develop the organization and later the standard. Rather than carbon credits, the BMV standard creates Sustainability Credit Units, which are meant to quantify carbon as well as ecological, economic, and social sustainability of the project generating them.[147] In 2011, BMV represented 20% of market share of transacted credit types in Latin America, with 14 projects.[148] Project-based forest carbon payments for environmental services activities to date have preserved roughly 1 million ha of native forests in 235 certified properties.[149] Certification under the BMV standard results in Sustainability Credit Units, or UCS^{VT} BMV (from the Portuguese). Audits are performed by third parties including universities like São Paulo State University (UNESP), international certifiers like TÜV Rheinland, as well as public environmental and social management institutions.[150]

History and Overview: Neither the BMV standard itself nor detailed objective, project documentation was publicly available from the BMV program. However, the following information on the standard's main design parameters was provided directly by the BMV program for this publication.

Main Design Elements

Element	Treatment [151]
Scale	Project level
Geographical scope	To date used in Brazil, although theoretically globally replicable.
Activity scope	Forest Protection Projects; Biodiversity Protection Projects; Watershed Protection Projects; Life Protection Projects; as well as Culture and Traditional Society Protection Projects (still in development).
RL	Baseline defined by regional and local historical emissions, agricultural potential, deforestation issues, legislation, capacity and land use value. Monitored and validated by score system through *ASE Protocol* for sustainable development indicators; revalidated every five years.
Safeguards	The ASE Protocol evaluates and verifies positive net impacts and additionality in project areas of environmental, social and economic development; also legal compliance and registration with relevant laws. Stakeholder participation included, with annual reassessments.

146 Código Florestal, Brasil. Lei nº 4.771, (15 September1965).
147 Brasil Mata Viva Website. http://www.brasilmataviva.com.br/
148 State of the Forest Carbon Markets 2012, p. 73.
149 Brasil Mata Viva Website. http://www.brasilmataviva.com.br/index.php?pg=31. Also by electronic communication from Brasil Mata Viva, 16 Nov. 2012.
150 Brasil Mata Viva Website. http://www.brasilmataviva.com.br/index.php?pg=24. Also by electronic communication from Brasil Mata Viva, 16 Nov. 2012.
151 Electronic communication from Brasil Mata Viva, 16 Nov. 2012.

Leakage	Leakage evaluated and mitigated through project design.
Permanence	Adjustable compliance system identifies and measures relevant risks to the project, with a reliability scale between 2 and 10%, which informs the contribution to a project credit buffer.
Additionality	No ex-ante additionality test.
MRV	All activities are monitored with indicators and established goals, quantified and audited periodically, generating several annual reports on all phases of project development and its activities.
Registries	BMV projects and project documentation are registered in the proprietary registry system "BTAAB," where titles registration and activities are available for monitoring. Project development reports are public and available upon release access. BMV also provides international securities identification number (ISIN), relevant project documents (via custody and financial records), and lifetime registry and UCSVT BMV titles on retirement of credits.

A.5 Social and Environmental Standards

A.5.1 Climate, Communities & Biodiversity Standards

Objective: The Climate, Communities & Biodiversity Alliance (CCBA)'s goal is to create rigorous standards to evaluate land-based climate change mitigation projects that create climate, biodiversity, and sustainable development benefits.[152]

History and Overview: The CCBA is a partnership and initiative of non-governmental organizations, corporations, and research institutions. The Climate, Community & Biodiversity (CCB) Standards are typically used in addition to a GHG reporting standard and is the dominant co-benefit standard in the voluntary market for all land-based project types, not just REDD+. For instance, in 2011, projects validated against rules of the CCB standards made up 77% of the co-benefit standard market share.[153] Through 2011, 44 projects have been validated under the CCB Standards.[154]

Process: The CCB Standards are used in the early phase of a project to exclusively evaluate the social and environmental performance of a project's design (i.e. rigorous project design, and local community and biodiversity benefits).[155] CCB Standards certify the co-benefits of a carbon project and requires ongoing verification to assure safeguards and benefits are implemented over time. The standards include fourteen mandatory performance criteria and three optional "Gold Level" measures. Only projects using best practices and providing significant climate, community and biodiversity benefits earn CCB approval.

152 Communities, Climate & Biodiversity Alliance. CCB Standards, Mission and Goals.
153 Peters-Stanley, M., Hamilton. K. (2012). Developing Dimension: State of the Voluntary Carbon Market 2012. Ecosystem Marketplace publication, p. 70.
154 Ibid.
155 Carbon Offset Research & Education (CORE), "The Climate, Community & Biodiversity Standards." Website: http://www.co2offsetresearch.org/policy/CCBS.html.

Main Design Elements

Element	Treatment [156]
Scale	Project level
Geographical scope	International
Activity scope	A/R and revegetation, REDD, IFM
RL	The baseline measurements include both original conditions in the project area and baseline projections.
Safeguards	The CCB Standards are predominantly a safeguards and project design standard, and 12 criteria evaluate general project conditions and those relating to climate, community, and biodiversity, as well as an optional "Gold Level" (adaptation benefits and exceptional community or biodiversity benefits). The standards include climate criteria but no carbon quantification.
Leakage	Leakage has to be accounted for in the climate section of the standards.
Permanence	Measures must be described that will maintain and enhance the climate, community and biodiversity benefits beyond the project lifetime.
Additionality	The baseline measurement section includes evaluation of additionality.
MRV	The CCB Standards certify that project design and implementation meet climate, community, and biodiversity benefit goals and verify this every five years (or sooner) by independent, accredited auditors.
Registries	No official registry but CCB Verification provides for listing all projects on the CCB website and the addition of a 'CCB' label to verified emissions reductions units such as VCUs on a registry.

A.5.2 REDD+ Social and Environmental Standards

Objective: The REDD+ Social and Environmental Standards (REDD+ SES) aim to create support for government-led REDD+ programs that contribute to human rights, poverty reduction, and biodiversity conservation. REDD+ SES is designed for jurisdictional REDD+ programs, as opposed to co-benefit project standards like the CCB standard.

History and Overview: The REDD+ SES were developed between May 2009 and September 2012 through an inclusive process engaging governments, NGOs and other civil society organizations, Indigenous Peoples organizations, international policy and research institutions and the private sector. CCBA and CARE International function as the international secretariat of the REDD+ SES.[157] As of October 2012, Brazil (Acre, Amazonas), Ecuador, Indonesia (Central and East Kalimantan), Nepal, Peru (San Martin), Mexico,

156 Climate, Community and Biodiversity Project Design Standards. http://www.climate-standards.org/standards/pdf/ccb_standards_second_edition_december_2008.pdf.
157 REDD+ Social and Environmental Standards Factsheet.

Guatemala and Liberia were participating in the initiative. Version 2.0 of the standard was published in September 2012.[158]

Process: The standard is composed of (i) principles, (ii) criteria, (iii) and indicators. Principles describe the "intent" of the standard and are "statements about the desired outcome and are not designed to be verified." Criteria describe the "conditions to be met in order to deliver a principle." Indicators define "quantitative or qualitative information needed to show progress achieving a criterion."[159] Principles and criteria are the same across all countries, whereas indicators can be country-specific to acknowledge differing contexts. Usage of REDD+ SES at the country level is through a ten-step process organized around three core elements (governance, interpretation, and assessment). Final assessment reports are published and should be developed through a multi-stakeholder process. A formal independent verification process does not yet exist, but an international review mechanism will be developed in 2013.[160]

Main Design Elements

Element	Treatment [161]
Scale	Jurisdictional level
Geographical scope	International, limited to developing countries that participate in REDD+, currently includes Brazil (States of Acre and Amazonas), Ecuador, Indonesia (Central and East Kalimantan), Nepal, Guatemala, Peru (Region of San Martin) Mexico and Liberia.
Activity scope	Government-led REDD+ programs, all REDD+ activities included
RL	Not applicable. Reference level set on the jurisdictional level using another standard (e.g. VCS JNR, UNFCCC) or set by policy decision and law
Safeguards	Social and environmental core standard. seven principles list the social and environmental safeguards as follows: (i) rights to lands, territories, and resources recognized and respected; (ii) benefits shared equitably; (iii) long-term livelihoods of indigenous and local communities improved; (iv) broader sustainable development, human rights and good governance objectives; (v) biodiversity and ecosystem services maintained and enhanced; (vi) full and effective participation; and (vii) compliance with applicable local, national and international laws and policies.
Leakage	Rules of GHG standard or legislation applies.
Permanence	Rules of GHG standard or legislation applies.
Additionality	Rules of GHG standard or legislation applies.
MRV	No independent verification, only international review process to ensure consistency in country-specific interpretations
Registries	Rules of GHG standard or legislation applies.

158 Draft REDD+ SES Version 2 was released on June 22, 2012.
159 REDD+ Social and Environmental Standards Website. Structure of the REDD+ SES. http://www.redd-standards.org/
160 REDD+ Social and Environmental Standards. Draft REDD+ SES Version 2. June 22, 2012. http://www.redd-standards.org/files/pdf/redd-docs/Guidelines/REDDSES%20draft%20Version%202%20revised%2006-22-12.pdf
161 REDD+ Social and Environmental Standards. Draft REDD+ SES Version 2. June 22, 2012.

A.5.3 SocialCarbon

Objective: SocialCarbon as a standard focuses specifically on the sustainable development benefits generated by voluntary emission reduction projects by assessing economic, environmental and social impacts on communities.

History and Overview: The Brazilian non-government organization Ecologica Institute founded the SocialCarbon standard in 2000 and manages the standard. The standard can be used for any climate change mitigation project, but was originally created for forest-dependent communities and has historically focused on forest carbon projects.[162] SocialCarbon does not have criteria for carbon baseline and monitoring methodologies, but is used in conjunction with a carbon accounting standard. Specific requirements for projects include (i) use of SocialCarbon methodologies for verifying social, environmental and economic performance of projects, (ii) monitoring and improvement of the project, and (iii) independent auditing. Additionally, the community consultative process used to generate information about the project must be conducted by an organization approved by the Ecologica Institute. Indicators are selected from a preapproved list, or new indicators can be submitted, focusing on six aspects of sustainable development. A list of existing approved indicators for forest projects can be found online.[163] SocialCarbon is the most prevalent co-benefit standard after CCBA, with 23% market share of all project types in 2011, although forestry played a small role in this.[164] It does not issue its own independent credits, but rather complementary credits are issued jointly with a GHG standard on the Markit Registry (SocialCarbon + VCS).

Main Design Elements

Element	Treatment[165]
Scale	Project level
Geographical scope	International
Activity scope	All forestry project types
RL	Developers must show that the baseline has been developed in compliance with a credible carbon-accounting standard.
Safeguards	The standard focuses specifically on the sustainable development benefits generated by voluntary emission reduction projects by assessing impacts on social, human, financial, natural, biodiversity and carbon resources. Five criteria are used to measure carbon offset projects as follows: (i) Offset Project Eligibility; (ii) Use of SocialCarbon methodology; (iii) Monitoring (iv) Continual improvement of project performance; and (v) Independent auditing conducted through SocialCarbon reports by a VVB.
Leakage	Rules of GHG standard apply.

162 SocialCarbon Standard. SocialCarbon for Forest Projects, Version 1.0.
163 SocialCarbon Standard. Indicators for Forest Projects. Version 2.1, June 2011.
164 Peters-Stanley, K. Hamilton. (2012). Developing Dimension: State of the Voluntary Carbon Market 2012. Ecosystem Marketplace publication.
165 REDD+ Social and Environmental Standards. Draft REDD+ SES Version 2. June 22, 2012.

Permanence	Developers must show that the project meets permanence risk management requirements of a credible carbon-accounting standard.
Additionality	Developers must show that additionality requirements of a credible carbon-accounting standard are met.
MRV	Developers must show credible MRV of relevant accounting standards within the six co-benefits measured, as well as with a credible carbon-accounting standard.
Registries	Markit manages SocialCarbon Registry, which tracks credits and all project details.

A.6 Multilateral Initiatives

A.6.1 Forest Carbon Partnership Facility: Carbon Fund

Objective: The Forest Carbon Partnership Facility (FCPF), a global partnership focused on REDD+, complements UNFCCC negotiations on REDD+ by demonstrating application at the country level and learning lessons during early implementation for REDD+.[166]

History and Overview: The FCPF was started in 2008 and has a current membership of 36 developing countries and 18 financial supporters. The Participants Assembly, comprised of all organizations and countries involved, annually elects a Participants Committee, the decision-making body of the FCPF, of 14 REDD+ countries and 14 financial contributors as well as observers from indigenous groups, the private sector, and international organizations. The World Bank acts as a trustee, secretariat, and one of several implementation agencies (referred to as Delivery Partners).[167] The FCPF consists of two funding windows: the Readiness Fund and the Carbon Fund.

The FCPF Carbon Fund pilots results-based payments for verified GHG emission reductions from REDD+ in FCPF member countries only. Although the FCPF focuses primarily on national level REDD+, subnational programs may be permitted if approved by the national REDD+ authority and linked to the national strategy and monitoring.[168]

Process: Participants in the FCPF that have made substantive progress in their REDD+ Readiness preparation may submit Emission Reductions Plan Idea Notes (ER-PINs) for consideration by carbon fund participants.[169] Important details for the Carbon Fund are currently being developed. The process by which countries may submit Emission Reduction Project Idea Notes (ER-PINs) has been outlined and is in use. The criteria against which these ER-PINs may be assessed to allow further development of Emissions Reductions Programs and eventually negotiation of Emission Reductions Purchase Agreements (ERPAs), have been

166 Forest Carbon Partnership Facility Website. Introduction.
167 Forest Carbon Partnership Facility Website. Governance.
168 Ibid.
169 The ER-PIN template can be accessed at:
http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Aug2011/FCPF%20Carbon%20Fund%20ER-PIN%20v%201.pdf

agreed (a set of seven selection criteria.[170] The Methodological Framework to guide development of the Emission Reductions Programs by REDD+ countries is under development.

An October 2012 draft ERPA term sheet outlines likely requirements for FCPF country participants to receive financing for their REDD+ activities and programs under the Carbon Fund, including conditions on MRV, non-carbon benefits, permanence, safeguards and benefit-sharing.[171] On MRV, participants are to "collect and record all relevant data related to the generation of ERs under the ER program."[172] Participants further are advised to ensure the production of and report on non-carbon benefits," which may include, but not be limited to, the improvement of local livelihoods, building of transparent and effective forest governance structures, making progress on securing land tenure and enhancing or maintaining biodiversity and/or other ecosystem services."[173] Regarding permanence of forest carbon sequestered, the draft ERPA term sheet specifies that participants report on any Reversal Events as well as address such risks by means of approaches such as buffer reserves, use of insurance, and/or effective forest management practices.[174] Participants are also required to comply with World Bank Operational Policies and Procedures and to submit Safeguards Plans describing measures to prevent or mitigate adverse environmental and social impacts from REDD+ programs, as well as report on their implementation in each interim progress report. Finally, participants must develop and submit a benefit-sharing plan to the IBRD which details how it "will share all or a significant portion of the monetary or other benefits achieved. . . with relevant stakeholders," which it must report on in each interim progress report.[175]

Main Design Elements[176]

Element	Treatment [177, 178, 179, 180]
Scale	National and subnational REDD+ (subnational programs occurring at large scale and ambition, with national government(s) endorsement)
Geographical scope	FCPF developing country participants that have reached a determined level of REDD+ readiness.

170 Forest Carbon Partnership Facility Carbon Fund. June 24-25, 2012. Selection Criteria for Emission Reductions Program Idea Notes (ER-PINs). Available at: http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/June2012/Final%20CF%20Resolution%201%20ER%20Prin%20selection%20criteria.pdf
171 Forest Carbon Partnership Facility (FCPF), Draft FCPF ERPA Terms Sheet, online at: http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/FCPF%20ERPA%20Term%20Sheet%2010-18-2012%20TT.docx
172 Draft FCPF ERPA Terms Sheet, p. 8. (noting that participants' MRV should also follow the "'Methodological Framework for the Carbon Fund of the FCPF' following the guidance received by the FCPF Participants' Committee in the 'Methodological Framework and Pricing Approach for the Carbon Fund of the FCPF'. . . ").
173 Ibid., 9-10.
174 Ibid., 10-11
175 Ibid., 12-13.
176 Main design elements presented are early considerations, as the FCPF program is currently under development. Electronic communication with FCPF, 16th Nov 2012.
177 Forest Carbon Partnership Facility Readiness Fund. (June 2012). Common Approach to Environmental and Social Safeguards for Multiple Delivery Partners.
178 Forest Carbon Partnership Facility Readiness Fund. (December 2011). Readiness Package Content and Assessment Approach Concept Note—Draft for Feedback. FMT Note 2011-14.
179 Rapp, K. Cancun & Durban Decisions on Safeguards and the FCPF Forest Carbon Partnership Facility (April 2012) http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Apr2012/3%20UNFCCC%20Safeguards%20and%20FCPF.pdf
180 Forest Carbon Partnership Facility Participants Committee (June 2012) Recommendations of the Working Group on the Methodological and Pricing Approach for the Carbon Fund of the FCPF. Revised Final Draft.

Activity scope	Full scope of REDD+
RL	RLs with clearly documented methodology; stepwise approach; subnational RL is geo-referenced and nested. Tier 2 standards as starting point; Tier 1 considered in exceptional cases and if conservative. Adjustments for relevant national circumstances are acceptable if credible and defendable. Public consultation and peer review are required in the approval process of the RL.
Safeguards	Must comply with WB Operational Policies and Procedures (Charter Article 3.1) as well as UNFCCC safeguards related to REDD+. Benefiting countries must create Environmental and Social Management Framework (ESMF) through Strategic Environmental and Social Assessment (SESA). The FCPF provides guidelines on stakeholder engagement. WB Policy on Indigenous Peoples requires free, prior informed consultation resulting in broad community support for REDD+ programs by affected Indigenous Peoples. The FCPF follows a *Common Approach* in safeguards and co-benefits, wherein any Delivery Partner involved with the FCPF can and must use "substantially equivalent" safeguards.
Leakage	Both international and domestic leakage potential are to be assessed, but only domestic leakage has to be accounted for in the MRV system.
Permanence	Suggested measures for addressing reversal risk include buffer reserves, insurance and forest management practices, and any reversals that occur must be included in accounting.
Additionality	Additionality is achieved through a conservative RL.
MRV	Stepwise, eventually comprehensive, system for conservatively measuring and reporting changes in deforestation, degradation, conservation and forest enhancement (relative to transparent RL for REDD+ program area, following Carbon Fund Methodological Framework and informed by national RL) as well as co-benefits, benefit sharing and safeguards. Local communities, private sector, and other entities should be involved in the implementation and verification of results. Leakage is to be monitored and addressed through this system.
Registries	National geo-referenced tracking system or registry with information on location, ownership, carbon accounting and financial flows for subnational and national.

A.6.2 United Nations REDD Program (UN-REDD)

Objective: UN-REDD aims to help countries develop and implement REDD+ strategies in an efficient, effective, and equitable way in order to facilitate REDD+ readiness.[181]

History and Overview: The UN-REDD Programme was launched in 2008 to help developing countries prepare and implement national REDD+ strategies, and uses expertise from the UN FAO, UNDP, and UNEP. Currently 44 partner countries are assisted, and 16 are supported in National Programme activities, [182] with the remaining 28 countries engaged as observers to UN-REDD's Programme's Policy Board in workshops and knowledge-sharing activities.[183] UN-REDD intends to scale up its National Programme activities to support

181 UN-REDD. (2011) UN-REDD Programme 2011-2015 Strategy. Note that the UN-REDD website includes knowledge sharing as a seventh work area. See UN-REDD "Global Support to Partner Countries," online at: http://www.un-redd.org/Global_and_Regional_Support/tabid/104435/Default.aspx
182 UN-REDD Website. About the UN-REDD Programme. http://www.un-redd.org/AboutUNREDDProgramme/tabid/583/Default.aspx
183 UN-REDD Website. National Programmes.

20 to 40 countries by 2015, contingent upon funding.[184] As of July 2012, total funding for UN-REDD countries was USD 117.6 million. UN-REDD focuses on readiness support, often in collaboration with the FCPF and Forest Investment Programme, on six integrated work areas including MRV, engagement of Indigenous Peoples and civil society, multiple benefits, national REDD+ governance, equitable benefit-sharing systems, and sectoral transformation.[185]

Process: The program works to develop tools, data, guidelines, methodologies, and analyses that support these six work areas in partner countries.[186] UN-REDD does not provide results-based payment, although it indirectly supports FCPF activities by acting as a Delivery Partner.

Main Design Elements

Element	Treatment[187]
Scale	National
Geographical scope	Developing country partner countries
Activity scope	Full scope of REDD+
RL	No global guidance*
Safeguards	Applies a 'rights-based approach' recognizing the UN Declaration on Rights of Indigenous Peoples (UNDRIP), Free, Prior and Informed Consent (FPIC), UN Development Group guidelines for Indigenous Peoples, and the Convention on Biological Diversity. The *Social and Environmental Principles Framework* was developed based on 7 safeguards supported by 24 criteria consistent with the Cancun Agreements. A *Benefits and Risks Tool* is in development.
Leakage	No global guidance*
Permanence	No global guidance*
Additionality	No global guidance*
MRV	No global guidance*
Registries	No global guidance*

*UN-REDD may address these issues in individual partnerships with supported countries but does not offer overarching global guidance.

184 UN-REDD. (2011) UN-REDD Programme 2011-2015 Strategy.
185 UN-REDD. (2011) UN-REDD Programme 2011-2015 Strategy.
186 UN REDD. Global Support to Country Actions. http://www.un-redd.org/AboutUNREDDProgramme/GlobalActivities/tabid/5957/Default.aspx
187 UN-REDD. (2011) UN-REDD Programme 2011-2015 Strategy. Available at: http://www.unep.org/forests/Portals/142/docs/UN-REDD%20Programme%20Strategy.pdf

A.6.3 Governors' Climate and Forests Task Force

Objective: The Governors' Climate and Forests Task Force (GCF) works to promote subnational jurisdictional programs for REDD+, low emissions rural development, and national and international efforts to include forests and land use in climate change policy.
History and Overview: The GCF is an initiative supported by 19 states and provinces from Brazil, Indonesia, Mexico, Nigeria, Peru,Spain, and the U.S. that share experiences and best practices, build capacity and develop recommendations on designing and linking REDD+ programs with GHG compliance regimes and other performance-based opportunities.[188] The GCF grew out of November 2008 Memoranda of Understanding signed at the First Governors' Global Climate Summit in Los Angeles. A 2009 Joint Action Plan guides overall implementation efforts and provides a set of goals towards which members are to dedicate their efforts. The Secretariat for the GCF is based in the University of Colorado (with regional coordinators in Brazil and Indonesia) and coordinates and facilitates the work of the initiative.

Process: The GCF conducts annual meetings as well as several technical workshops each year to exchange experiences and develop capacity. In addition, reports prepared by consultancies have provided new technical information to members for their consideration and deliberation on furthering the agreed guidance of the group.

Main Design Elements

Element	Treatment[189]
Scale	Subnational jurisdictional level with 'nesting' of projects possible
Geographical scope	GCF Member States and Regions
Activity scope	Full scope of REDD+
RL	Jurisdictional RL. Baseline methodologies flexible enough to capture the different circumstances prevailing in different jurisdictions while also meeting the needs of the compliance regimes to be developed (potentially including a single, shared baseline for multiple states).
Safeguards	Safeguards are under development in a variety of ongoing multi-stakeholder processes in a number of GCF states and provinces (e.g. Acre, Amazonas, Mato Grosso, Brazil Social & Environmental Principles and Criteria for REDD+, and Aceh) and other fora, including the Forest Carbon Partnership Facility, UN-REDD, and CCBA-SES. MRV could be required for all safeguards and on the revenue and other benefit flows (public and private). The GCF recommends general criteria for safeguards and multi-stakeholder processes that retain some flexibility in how states and provinces demonstrate compliance. There are no mandatory requirements formulated yet.
Leakage	Mechanisms for accounting for leakage as part of the MRV system, including, where relevant and feasible, links to national-level accounting. No detailed guidance formulated yet.
Permanence	Relevant standards and criteria for project-level activities to be clearly defined and identified. Enforceability of offset credits across jurisdictions to be explored, including use of liability rules, insurance instruments, buffers, and/or credit reserves.

188 "About GCF" Website: http://www.gcftaskforce.org/about
189 GCF Task Force Joint Action Plan (2009), pp. 16-17. Available at: http://www.gcftaskforce.org/documents/GCTF-1000-2009-031.pdf

Additionality	Captured in the jurisdictional RL.
MRV	Nesting approaches possible. Relevant standards and criteria to be clearly defined and identified, with attention to potentially combining third-party certification and verification of project-level activities with sub-national-level performance indicators.
Registries	Forest carbon registries for sub-national- and/or national-level forest carbon accounting to be built upon existing GHG registry infrastructures, with capabilities for tracking all transactions, acquisitions, cancellations, and retirements of forest credits in a transparent and publicly accessible manner. The overall goal is to develop a prototype or model forest carbon registry that could be used in the different GCF states/provinces.

A.7 Bilateral Initiatives

A.7.1 Guyana-Norway REDD+ Investment Fund

Objective: The goal of the Norway-Guyana partnership is to reduce Guyana's emissions from deforestation and degradation, provide an early action example of REDD+ in a high forest cover, low deforestation rate country, and to leverage funds to support Guyana's Low Carbon Development Strategy (LCDS).

History and Overview: The Guyana REDD+ Investment Fund (GRIF), funded by Norway's International Climate and Forests Initiative (NICFI) was launched in October 2010. The partnership funds Guyana's LCDS based on the country's REDD+ performance against a bilaterally-agreed reference level of 0.275% annual deforestation.

Process: The World Bank International Development Association acts as the trustee for GRIF funds with the Inter-American Development Bank (IDB), the UN Development Program (UNDP), and the World Bank acting as Partner Entities. The carbon price is set at USD5/ton of CO2e, and the current program covers the entirety of Guyana except the Iwokrama International Center for Rainforest Conservation and an area of planned deforestation around the Amaila Falls hydro-electricity plant.[190] Payments are managed by the GRIF and disbursed against the Trust as funds are made available and as funding decisions are made by the Steering Committee (consisting of Norway and Guyana representatives) and requested by Partner Entities. A Joint Concept Note agreed by Guyana and Norway outlines the MRV system Guyana will put in place, with interim benchmarks to assess Guyana's performance, as evaluated by independent verification.[191]

190 Guyana REDD+ Investment Fund. Joint Concept Note. (hereafter "Norway-Guyana Joint Concept Note"), online at:http://www.regjeringen.no/upload/MD/2011/vedlegg/klima/klima_skogprosjektet/Guyana/JointConceptNote_31mars2011.pdf. Note that the Amaila Falls hydro-electric plant is considered a key part of Guyana's Low Carbon Development Strategy.
191 "The World Bank and the Guyana REDD-Plus Investment Fund (GRIF) – Frequently Asked Questions," (2011) online at: http://siteresources.worldbank.org/CFPEXT/Resources/299947-1267555827203/GRIF_Trustee_FAQs_November2011.pdf

Main Design Elements

Element	Treatment [192, 193, 194, 195, 196, 197, 198]
Scale	Jurisdictional
Geographical scope	Guyana, national territory
Activity scope	Only reduced emissions from deforestation initially with other REDD+ activities addressed in the future.
RL	*Combined Reference Level:* The level in the Norway agreement is calculated from an analysis of Guyana's historical deforestation baseline for 2000-2009 (0.03%) and the global average deforestation rate of 0.52% from 2005-2010 (both sourced from FAO data). Although the reference level has been set at 0.275%, the crediting baseline has been amended so that Guyana receives progressively less compensation as the deforestation rate rises above 0.056%, and no compensation if the deforestation rate rises above 0.1%
Safeguards	Norway identified a number of "enabling indicators" in its 2011 *Joint Concept Note* with Guyana concerning the implementation of safeguards. The indicators are evaluated by an independent neutral expert chosen by both Guyana and Norway and continued funding depends on its satisfaction. Additionally, if a Partner Entity is implementing a given project through the GRIF it will apply its own safeguards. The GRIF *Administration Agreement* between Norway and Guyana notes that FPIC is required for inclusion of indigenous lands into a national land use planning system that is to help avoid national leakage.
Leakage	A national land use planning system is to be developed to avoid leakage. Leakage is captured in the national accounting system.
Permanence	No requirements
Additionality	The *combined reference level* approach is meant to ensure additionality.
MRV	In 2009, Guyana and Norway issued a Joint Concept Note on MRV and Guyana developed a roadmap for installing a comprehensive national MRV system, including interim progress indicators. Two national forest inventories have been completed (2010, 2011) indicating specific national deforestation rates (for instance, 0.053% for 2011). Also Guyana is in the process of developing country specific data (e.g. wood density, root to shoot ratios) to enable rigorous future MRV.
Registries	No guidance

192 Norway-Guyana Joint Concept Note, supra note 190.
193 Santiago, Chris. May 20, 2011. "Writing the Rules for a new REDD Paradigm: Norway and Guyana." Ecosystem Marketplace. http://www.ecosystemmarketplace.com/pages/dynamic/article.page.php?page_id=8331&section=news_articles&eod=1
194 World Bank. (November 2011). The World Bank and the Guyana REDD-Plus Investment Fund.
195 Guyana REDD+ Investment Fund (GRIF). (2011) Fact Sheet.
196 Guyana Forestry Commission. (2012). Guyana REDD+ Monitoring Reporting & Verification System (MRVS) Interim Measures Report, 01 October 2010-21 December 2011. Version 1.
197 Norway-Guyana Joint Concept Note, supra note 190.
198 Guyana REDD+ Investment Fund (GRIF) (2010). Administration Agreement.

A.7.2 Indonesia-Norway REDD+ Partnership

Objective: The goal of the Indonesia-Norway REDD+ Partnership is development and implementation of Indonesia's REDD+ strategy leading to performance-based payments in reducing emissions from forests.

History and Overview: The Partnership was established through a Letter of Intent between the two governments in May 2010, with initial validity through 2016.[199] The Partnership permits up to USD 1 billion and is implemented via a three phase approach: Phase 1 included the development of a national REDD+ strategy and frameworks; Phase 2 calls for national level capacity building, a suspension on concessions for conversion of peat and natural forest, and provincial pilot projects; and Phase 3 scales up performance-based payments for emission reductions.[200] Initial support is allocated to completing Indonesia's climate and forest strategy, building and institutionalizing MRV capacity, and catalyzing needed policies and institutional reforms.[201, 202, 203] The partnership includes a two-year moratorium instituted in May 2010 on logging concessions in Indonesia. Along with praise there has also been criticism of the moratorium's efficacy, which includes only primary and peat forests and excludes secondary and logged forests that make up the majority of unprotected forests.[204]

Process: The phased approach outlined in the LoI and subsequent documentation provides guidance for design and implementation of a multi-stakeholder REDD+ strategy incorporating safeguards and with a strong focus on an independent MRV system. Payments are channeled through a temporary financial mechanism (with dialogue ongoing over the form of a longer-term funding arrangement) and disbursed over a 7-8 year period on the basis of deliverables produced.

Main Design Elements

Element	Treatment [205, 206, 207]
Scale	Jurisdictional
Geographical scope	Indonesia, national territory, with selected pilot provinces
Activity scope	Funds are dedicated to verified emissions reductions from deforestation, forest degradation or peatland conversion/destruction?

199 Government of the Kingdom of Norway and the Government of the Republic of Indonesia. May 2010. Letter of Intent on cooperation on reducing greenhouse gas emissions from deforestation and forest degradation. (hereafter "Norway-Indonesia Letter of Intent"). http://www.forestsclimatechange.org/fileadmin/photos/Norway-Indonesia-LoI.pdf
200 HuMA (2010) Preliminary Study on the Safeguards Policies of Bilateral Donors to REDD Programs in Indonesia. HuMa, Jakarta, Indonesia.
201 Norway Office of the Prime Minister. May 26, 2010. Press Release no 66/10 "Norway and Indonesia in partnership to reduce emissions from deforestation."
202 Norway-Indonesia Letter of Intent, supra note 199.
203 Caldecott, J., M. Indrawan, P. Rinne, M. Halonen (2011). Indonesia-Norway REDD+ Partnership: first evaluation of deliverables. Gaia consulting.
204 Kandy, D. and Kiatz, D. (2011) Indonesia Bets on REDD With new Moratorium, but can it Deliver?. http://www.ecosystemmarketplace.com/pages/dynamic/article.page.php?page_id=8328&section=news_articles&eod=1
205 Norway-Indonesia Letter of Intent, supra note 199.
206 NORAD (2011). Real-Time Evaluation of Norway's International Climate and Forest Initiative Contributions to National REDD+ Processes 2007-2010 Country Report: Indonesia.
207 Norway-Indonesia REDD+ Partnership - Frequently asked questions. (May 2010) Webpage: http://www.norway.or.id/Norway_in_Indonesia/Environment/-FAQ-Norway-Indonesia-REDD-Partnership-/

RL	RLs set either at a UNFCCC level or domestically according to Indonesia's emissions reductions pledges and UNFCCC methodological guidance.
Safeguards	Multi-stakeholder REDD+ Strategy developed in Phase 1. Stakeholder participation and transparency emphasized in Letter of Intent, as well as a general respect for international management standards including fiduciary, governance, environmental and social safeguards.
Leakage	No information publicly available
Permanence	No information publicly available
Additionality	Assumed to be captured in national RL.
MRV	Independent institution to conduct MRV created in Phase 1, and Phase 2 is planned to implement "a country wide MRV system conforming to IPCC Tier 2 or better" run by the independent MRV institution, with a strategy to improve the MRV system to Tier 3. A province-wide pilot will parallel the national MRV process.
Registries	No information publicly available

A.7.3 Amazon Fund (Norway-Brazil)

Objective: Norway's partnership with Brazil seeks to support emissions reductions thorough REDD+ and learning activities supporting REDD+.

History and Overview: The Amazon Fund is an initiative created by the Brazilian president in 2008 to raise donations to minimize and prevent deforestation in the Amazon region. In 2009, Norway pledged up to USD 1 billion until 2015 to support Brazil's Amazon Fund.[208] The Amazon Fund does not issue tradable carbon credits. In June 2012, the Amazon Fund announced that funding resources will be shared between Brazil and other Amazon Cooperation Treaty Organization countries including Bolivia, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela.[209] As with Norway's bilateral agreement with Guyana, the carbon price is set at USD5/ton.

Process: A donation agreement was made between the BNDES and Norway in 2009, which established the initial donation in 2009 as well as the terms and procedures of Norway's continued commitment in subsequent years (of which Norway has signed four Addenda extending the initial Agreement). Funding under the Agreement is linked to reduced GHG emissions from deforestation and forest degradation. Disbursements from Norway are made every six months or less based on the Fund's needs.[210]

Unlike in Indonesia and Guyana where Norway's financing is channeled via separate dedicated funding instruments, in Brazil payments from Norway are pooled in a fund with donations from other countries and some voluntary donations from the private sector, with pre-existing arrangements for results-based

208 Norway Ministry of the Environment. (2011). Norway and the Amazon Fund: Facts about the rainforest and the Amazon Fund. (In 2011, Norway contributed roughly $170 million to the Amazon Fund.)
209 IISD. June 20, 2012. Brazil's Amazon Fund to Extend Anti-Deforestation Support to ACTO Countries. IISD Reporting Services, Biodiversity Policy & Practice.
210 Amazon Fund: Donations – "Norway," website: http://www.amazonfund.gov.br/FundoAmazonia/fam/site_en/Esquerdo/doacoes/

payments.[211] The Brazilian National Development Bank (BNDES) manages the Amazon Fund and also raises funds and assists with contracts and project monitoring. The decision-making arrangement of the Amazon Fund consists of the Amazon Fund Guidance Committee (COFA) and the Amazon Fund Technical Committee (AFTC). COFA, which consists of representatives of federal and state governments as well as civil society, sets the Amazon Fund guidelines and follows up on results to ensure they follow these guidelines and relevant laws and policies. (An independent auditor also checks that funds used meet the guidelines set by COFA.) The AFTC consists of six Ministry of Environment-appointed technical and scientific experts who calculate carbon per hectare and deforestation avoided, and issue non-tradable carbon emissions certificates.[212]

Main Design Elements

Element	Treatment[213, 214, 215, 216, 217]
Scale	Project (supported by the Amazon Fund) Jurisdictional (payment from Norway to the Fund)
Geographical scope	Eligible projects from the Amazon Basin: Bolivia, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela
Activity scope	REDD, Conservation, Sustainable Forest Management, Recovery of Deforested Areas (A/R). Other capacity building activities are funded by the Amazon Fund that do not directly create emission reductions.
RL	Payments from Norway to the Amazon funds are based on reference emission levels of a 10 year rolling average of historical deforestation that is updated every 5 years (conservative assumption of 100tC/ha in all areas). The Amazon Fund provides a set of relatively basic benchmarks for the funding of REDD+ activities, including criteria on safeguards and permanence.
Safeguards	The Amazon Fund is subject to BNDES's social and environmental safeguards. There is no grievance mechanism.
Leakage	Not addressed specifically in the agreement between Norway and Brazil due to the national scope of the agreement. Whether BNDES requires leakage management from applicant projects is not clear.
Permanence	If the deforestation rate for a given year is higher than the reference emission level, the government will be unable to raise funds that year and will have to compensate for those emissions the following year.
Additionality	Captured in national reference emission level. Requirements for applicant projects is not clear.
MRV	Monitoring is completed through a combination of activities by SFB/MMA (Brazilian Forest Service)

211 For the latest totals of Norway's donations received by the Amazon Fund at the time of writing, see: http://www.amazonfund.gov.br/FundoAmazonia/fam/site_en/Esquerdo/doacoes/
212 Climate Funds Update: Amazon Fund. Website: http://www.climatefundsupdate.org/listing/amazon-fund#TOC-Fund-Governance
213 Amazon Fund. Presentation by Brazilian Development Bank (BNDES).
214 Angelsen, A., D. Boucher, S. Brown, V. Merckx, C. Streck, D. Zarin. (2011) Guidelines for REDD+ Reference Levels. Meridian Institute publication for The Government of Norway.
215 The Amazon Fund Website.
216 Eidhammer, Asbjorn, et al. (2010). Real-Time Evaluation of Norway's International Climate and Forest Initiative, 2007-2010, Country Report: Brazil.
217 Zadek, S., M. Forstater, F. Polacow (2010). The Amazon Fund: Radical Simplicity and Bold Ambition. AVINA Working Paper.

	and INPE (Brazilian National Institute of Space Research). Results are independently audited.
Registries	No guidance

A.7.4 Japan's Bilateral Offset Crediting Mechanism

Objective: Japan has proposed the creation of a Bilateral Offset Crediting Mechanism (BOCM) to facilitate the meeting of its climate mitigation goals of reducing GHG emissions in 2020 to 25% less than 1990 levels[218] through international offsets.

History and Overview: In mid-2011 the Japanese Environment Ministry announced its bilateral support of 29 carbon projects located in Asia, Latin America, and Africa, including seven REDD+ projects, with an additional 25 projects receiving support in mid-2012.[219] These projects, which the Japanese government was supporting with USD37.5 million for feasibility studies, would be used to help the country meet its climate mitigation goal. This initial support has grown to over USD100 million in feasibility studies for over 100 offset-generating projects throughout 2011. The feasibility studies have focused on identifying emissions reductions opportunities that do not exist in the CDM and developing corresponding MRV standards and methodologies.[220] The BOCM, as Japan calls this initiative, has similarities to the CDM, yet operates at the bilateral level and is likely to include a wider range of project activities than the CDM.

Process: A number of important details around additionality, safeguards, MRV and other issues are not yet fully detailed, although Japan is expected to release more information at COP 18.[221] Japan's proposal to date has been to follow general international guidelines but work bilaterally with countries to define the precise criteria for elements such as MRV, additionality, verification and accreditation of verifiers.[222] Feasibility studies and MRV model projects continue through 2012 with the actual BOCM commencing in 2013.[223]

A.7.5 Germany's REDD Early Movers Program

Objective: The German REDD Early Movers Program (REM) promotes forest conservation and resulting reductions in CO2 emissions. This is done using incentive payments and performance-based payments, supported by the setting up of institutions, monitoring systems and REDD registries, and by capacity development.

218 Point Carbon. July 14, 2012. Japan selects new batch of bilateral offset projects.
219 Point Carbon. July 2, 2012. Japan to fund 21 studies for new CO2 offset market projects.
220 Le, Hanh, A. Delbosc. (2012). ClimateBrief N011: Japan's Bilateral Offset Crediting Mechanism. CDC Climat Research, p. 3. http://www.cdcclimat.com/IMG/pdf/12-01_climate_brief_11_-_japan_s_bilateral_offset_crediting_mechanism.pdf
221 Le, Hanh, A. Delbosc. (2012). ClimateBrief N011: Japan's Bilateral Offset Crediting Mechanism. CDC Climat Research.
222 Ibid.
223 Government of Japan. May 18, 2012. Establishment of flexible and effective new market mechanism – Japan's suggestion. Presentation from UNFCCC SB 36 Side Event "Low Carbon Growth in East Asia and Japan's Effort."

History and Overview: REM is a worldwide support program for REDD+ that rewards actors in those countries which have already taken independent action towards mitigating climate change. It is results-based and helps to close funding gaps in the current REDD process.

Process: Criteria for REM funding include the (1) establishment/extension of systems to monitor forest cover/CO2, (2) high MRV standards, (3) clear benefit sharing, (4) effective consultation and safeguards, (5) transparency of the REDD system. To minimize the transaction costs of carbon finance, results-based incentive payments and payments for emission reductions under REDD are made on the basis of proxy indicators - such as IPCC's conservative assumptions about the carbon content of forest ecosystems and about prices per tonne of CO2 for emission reductions. The carbon payments are complemeted by technical assistance and capacity building to achieve REDD+ readiness.

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