# Nested Approaches to REDD+

## *An Overview of Issues and Options*

FOREST TRENDS

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* This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID), under the terms of the TransLinks Cooperative Agreement No.EPP-A-00-06-00014-00 to The Wildlife Conservation Society. TransLinks is a partnership of WCS, The Earth Institute, Enterprise Works/VITA, Forest Trends and The Land Tenure Center. The contents are the responsibility of the author(s) and do not necessarily reflect the views of USAID or the United States government.

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## *An Overview of Issues and Options*

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Forest Trends' mission is to maintain, restore, and enhance forests and connected natural ecosystems, life-sustaining processes, by promoting incentives stemming from a broad range of ecosystem services and products. Specifically, Forest Trends seeks to catalyze the development of integrated carbon, water, and biodiversity incentives that deliver real conservation outcomes and benefits to local communities and other stewards of our natural resources.

Forest Trends analyzes strategic market and policy issues, catalyzes connections between producers, communities and investors, and develops new financial tools to help markets work for conservation and people.


Climate Focus is an advisory company committed to the development of policies and projects that reduce greenhouse gas emissions. Our international and multidisciplinary team works closely with companies, governments and non-governmental organizations on reducing emissions in energy, households, industry, agriculture and forestry. Climate Focus is an independent expert in international and national climate law, policies, project design and finance.

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# Acknowledgements

This paper benefited greatly from comments received and conversations with an extensive group of practitioners, policy makers and experts. Special thanks go to Carina Bracer, David Burns, Slayde Hawkins, David Tepper, and Anne Thiel. The authors also wish to thank Michael Jenkins for his guidance and the staff at Forest Trends for their assistance and support.

In addition, the authors gratefully acknowledge discussions and presentations of participants in an international workshop on Nested Approaches to REDD+ convened by Forest Trends in Miami, USA, on 16-17 March, 2011. While the perspectives presented in this paper are those of the authors, Forest Trends and Climate Focus alone, we would like to recognize the valuable observations shared by participants in that meeting: Girma Amente, William Boyd, Jose Manuel Bulas, Bruce Cabarle, Augusto Carlos Castro, Mariano Cenamo, Marco Chiu, Michael Colby, Deddy Hadriyanto, Bruno Hugel, Toby Janson-Smith, Michael Jenkins, Tracy Johns, Yaw Kwakye, Ludovino Lopes, Nicolas Lucas, Diana Vargas, John Mason, Xavier Mugumya, Dan Nepstad, John Niles, Evan Notman, Lucio Pedroni, David Rothschild, Lucia Ruiz, Richard Saines, Lucio Andrés Santos, Phuc Xuan To, Marco van der Linden, and Heather Wright.

# Executive Summary

There is consensus in climate negotiations that efforts associated with Reducing Emissions from Deforestation and Forest Degradation (REDD+) will ultimately be measured and rewarded based on national-level accounting systems. But while developing countries are building capacity to implement and manage these national systems, subnational initiatives are evolving rapidly at the state, provincial, and project levels. Integrating these different accounting scales will be crucial to ensure the environmental integrity of the system as a whole and to mobilize finance.

To ensure appropriate emission accounting and allow the transfer of incentives in the form of carbon credits or payments, rules need to be defined that integrate the various levels of accounting, management, and incentives. Such rules are referred to as "nested systems" that nest project or programs within national- or state-level REDD+ accounting systems. Nesting allows incentives to be placed at the appropriate level of governance. While broader policy reforms may take years to be implemented, REDD+ action can be developed faster at the project level, delivering near-term emission reductions. Projects and programs also offer opportunities for private sector engagement and may provide important options for direct community-level participation in REDD+. Finally, subnational activities can make important contributions to emerging national frameworks for REDD+ management and accounting. Establishing local investment mechanisms as well as measurement, reporting, and verification (MRV) capacity is providing valuable experience to inform broader national policies.

While the focus of this paper is on the nesting and integration of projects into subnational and national systems, the discussion of REDD+ projects and programs should also be understood in the broader context of national REDD+ strategy development. Creating incentives for projects is only one part of a national REDD+ strategy which may include governance reform, fiscal incentives, and other policies that address particular drivers of deforestation. The discussion of accounting, legal and technical issues around the integration of different levels of crediting emission reductions is relevant not only for projects but also for the allocation of emissions and emission reductions among different levels of government (states, provinces, national) and policies (e.g., payments for ecosystem services, other subsidies, protected areas).

Countries and states or provinces may opt to implement nested forms of REDD+ through progressive phases. This step-wise approach is one of the main advantages of nesting and allows governments to move from independent project accounting to projects nested within state/provincial programs, and finally to a full-fledged national accounting system. These phases can be harmonized with the general REDD+ implementation phases acknowledged in the Cancun UNFCCC decision.

## Distribution of Incentives

Emission reductions from REDD+ can be rewarded in the form of carbon credits (recognized in voluntary and/or regulated markets) and results-based payments from public sources (e.g., Green Climate Fund, bilateral REDD+ funding). Options to be defined in international negotiations might include direct distribution of incentives from an international REDD+ mechanism to projects (as under the Clean Development Mechanism) or direct distribution to national and/or subnational governments with a subsequent (indirect) distribution to subnational programs or projects. At the national level, governments with the authority to allocate credits or

funds must make a range of policy choices, including (i) deciding whether and how to incentivize project activities (striking a balance between these and use of funding for policies and programs), (ii) opting to allocate tradable credits or distribute benefits/payments; and (iii) defining the criteria or basis for allocating incentives.

## Regulatory Aspects

The regulatory and institutional setup for REDD+ will have a considerable impact on the ability of nested approaches to ensure credible emission reductions and to attract private investment. Issues and options that require the attention of international as well as national policymakers include:

- Defining the basic institutional setup, such as the main regulatory entity responsible for overseeing domestic implementation, and the contours of the powers of that entity.
- Establishing approval procedures at international and domestic levels. At the international level, a dedicated system for approving projects and/or subnational programs could be created following the criteria set by the Cancun UNFCCC decision. At the domestic level, countries and states or provinces could determine what is required to approve or endorse project; who proposes and registers subnational reference levels; when independent verification is needed; and what relevant consultation procedures are.
- Creating a registry to support domestic policy options. A registry could function as an electronic database that is designed to evolve over time as domestic MRV capacities grow.

## Managing Risk of Government Failure

Risk mitigation mechanisms can be designed at the project level or the government level. At the *project-level*, risk mitigation tools may be needed to address the issues of permanence and project performance. However, when rewards or incentives for subnational project activities are linked to the overall performance of the *government,* additional risks are generated beyond a project's control. Commonly cited risk management tools include: (i) buffer and reserve accounts; (ii) insurance mechanisms for reversal of carbon stocks; (iii) government guarantees; and (iv) penalty fees for sanctioned deforestation. These tools could be applied in many different combinations.

## Measurement and Monitoring

Measuring and monitoring emissions from forests and land-use is complex but feasible. Specific parameters will generally be determined at the domestic level in order to ensure that forest cover, forest condition, and carbon stocks are measured consistently at different jurisdictional levels. To obtain consistent results, certain elements and concepts will need to be standardized, while other methodological decisions can be left to developers at the subnational level.

Potential issues and options for countries and states or provinces, and the international REDD+ system include (i) creating a definition of forest that is common and applicable at multiple scales; (ii) defining eligible activities and how to account properly for different land-use and forestry activities taking place at different scales; and (iii) harmonizing accounting periods for REDD+ activities implemented in different time periods.

## Reference Levels

Potential methods for establishing baseline deforestation rates (reference levels) discussed under the UNFCCC include using historical average deforestation as well as various mechanisms that take into account projected deforestation and national circumstances. While, in itself, establishing relevant baselines is a difficult task, the technical and political challenges are compounded in nested REDD+ because the multiple baselines needed at different levels must be consistent and coherent. At least as challenging as setting national reference levels is determining how national levels are allocated within national (or subnational) boundaries.

Options to develop and integrate business-as-usual reference levels from subnational activities for nested approaches can be categorized as:

- Disaggregate or bottom-up approaches, in which multiple project-specific baselines are developed largely independently; or
- Consolidated or top-down approaches, where spatially explicit regional baselines are developed and used to zone and stratify the forest landscape to predict the rate, location and timing of future deforestation, or to establish benchmarks.

## Leakage

Leakage is a real risk for project-level activities, as activity-shifting, market or other effects, can cause emissions to shift to areas outside their project boundaries. Current approaches to dealing with leakage under project-level accounting standards (e.g., CDM, VCS) include improving design of project activities to minimize leakage risks, accounting for leakage within a monitored "leakage belt" that covers the range of displaced agents and their activities, and making use of discount factors. At the national or state/provincial level, options to deal with leakage include applying these project approaches, using a leakage tax, and/or having governments assume leakage risks in order to spur private investments.

# Glossary

**Baseline**
A projection into the future of expected emissions and/or deforestation if no REDD policies, measures or projects are implemented.

**Clean Development Mechanism (CDM)**
A mechanism established in Article 12 of the Kyoto Protocol and designed to assist non-Annex I Parties in achieving sustainable development and in contributing to the ultimate objective of the UNFCCC, and to assist Annex I Parties in achieving compliance with their quantified emission limitation and reduction commitments.

**Joint Implementation (JI)**
A mechanism under the Kyoto Protocol through which a developed country can receive "emission reduction units" when it helps to finance projects that reduce net greenhouse-gas emissions in another developed country (in practice, the recipient state is likely to be a country with an "economy in transition"). An Annex I Party must meet specific eligibility requirements to participate in joint implementation.

**Leakage**
GHG emissions displacement that occurs when interventions to reduce emissions in one geographical area (subnational or national) cause an increase in emissions in another area.

**Measurement, Reporting, and Verification (MRV) System**
A national and/or subnational set of processes and institutions that ensure reliable assessment of climate benefits associated with real and measurable emission reductions and enhancement of carbon removals.

**Nested Approach**
An accounting, management, and incentive system that accommodates activities and incentives to reduce emissions at various activity and implementation levels. Where projects are nested within subnational or national programs, activity-specific emission are deducted from the broader (national or regional) accounting for emission reductions against a reference level.

**Reference Level**
Negotiated level of emissions at the national or subnational scale that is synonymous with a baseline for providing incentives for a participating REDD+ country, if emissions are below that level.

**REDD+**
A system that creates incentives and allocates emission reductions from the following activities: (a) reducing emissions from deforestation; (b) reducing emissions from forest degradation; (c) conservation of forest carbon stocks; (d) sustainable management of forests; (e) enhancement of forest carbon stocks.

**Registry**
Electronic infrastructure designed specifically to ensure accurate accounting of projects and their respective performance (measured either through emission reductions or removals, or another agreed performance metric) as well as the issuance of REDD+ units.

**Results-based Program**
An incentive system wherein the international contribution to support REDD implementation is contingent on meeting pre-agreed benchmarks.

**Subnational Activities**
Activities that take place at the local (i.e., project) level, as well as the state/provincial level.

# 1. Introduction

In international climate negotiations there is consensus that the climate benefits from Reducing Emissions from Deforestation and Forest Degradation, sustainable forest management, conservation, and enhancement of forest carbon stocks (REDD+) will ultimately be measured and rewarded based on national-level accounting systems. Working towards this goal is a principal focus of current REDD+ readiness funding. In the meantime, public and private demonstration projects are already being implemented that reduce greenhouse gas (GHG) emissions at the subnational or project level, while countries develop national policies, data, and capacities. As international and national REDD+ frameworks develop, these subnational activities will need to be brought under broader accounting frameworks to ensure that any carbon credits issued to projects or programs "add up"—maintaining environmental integrity while catalyzing action at multiple scales of implementation.

Integrating different local and national levels of action has come to be referred to as "nesting" and is important for a number of reasons. First, incentives need to be placed at the appropriate level of governance. While broader policy reforms may take years to be implemented, REDD+ action may be developed faster at the regional or project level, delivering near-term reductions in emissions. Secondly, the project level is a key entry point for private sector engagement and may provide important options for direct community-level engagement with REDD+. Finally, subnational activities are a critical piece of emerging national frameworks for REDD+ management and accounting. Establishing local investment mechanisms, and measurement, reporting and verification (MRV) capacity in advance of national frameworks is providing valuable experience to inform broader architectures and capacity.

The term "nesting" is variously used to refer to state- and province-level accounting integrated into national level systems, as well as to project-level activities sitting within broader national (or subnational) systems. Both types of nesting are critically important and some of the most significant progress to date on developing compliance systems is being led by states and provinces (e.g., under the Governors' Task Force on Climate and Forests, a subnational collaboration between 15 states and provinces). However, this briefing document focuses on the discrete set of issues and options for nesting *project-level activities* within broader frameworks under the assumption that the issues will be broadly similar if the broader jurisdiction in which projects sit are national or subnational. The document aims to explain relevant technical and regulatory aspects that require further clarification (and simpler explanation) so that REDD+ design options for the integration of different levels of governance can be more easily understood and applied nationally and internationally.

This briefing document is structured as follows. Section 2 provides a brief overview of relevant REDD+ developments at the international level. Section 3 presents some initial strategic considerations that place nested forms of REDD+ as an instrument within the context of broader domestic policies and measures. Section 4 addresses policy options for the design of nested approaches to REDD+. Here we consider a range of technical, regulatory, institutional, and economic aspects that may affect nested approaches and influence their design at the national level.

# 2. International REDD+ Developments

At the 16th session of the Conference of the Parties to the UNFCCC in Cancun in 2010 (COP16), parties to the UNFCCC adopted, with slight modifications, the REDD+ decision negotiated (but not adopted) at COP15 in Copenhagen.[1] With this UNFCCC decision, parties officially established an international incentive mechanism that encourages developing countries to reduce forest-related emissions and enhance forest carbon stocks in the context of the provision of adequate and predictable financial and technological support to developing country Parties.

In line with ongoing REDD+ readiness activities, countries are encouraged to develop (i) a national REDD+ strategy, (ii) national and, if appropriate, subnational reference (emission) levels, (iii) an MRV system, and (iv) a system for providing information on how the safeguards in the decision[2] are being addressed through the implementation of REDD+ activities.

The REDD+ decision recognizes implementation through a **phased approach** beginning with:

i) The development of national strategies or action plans, policies and measures, and capacity building; followed by

ii) The implementation of national policies and measures, and national strategies or action plans that could involve further capacity building, technology development and transfer, and results-based demonstration activities; evolving into

iii) Results-based actions that should be fully measured, reported, and verified. The choice of the starting phase of each country depends on national circumstances and available support.

There is no reference to sources of **financial support** (either government or market-based), but there is a mandate to explore financing options for the full implementation of the results-based actions (phase III implementation of REDD+).

Cancun also marked formal acknowledgement under the UNFCCC of **subnational approaches** to REDD+ accounting and monitoring. Developing country Parties aiming to participate in an international REDD+ mechanism are encouraged to develop[3] a "national forest reference emission level and/or forest reference level or, if appropriate, as an interim measure, subnational forest reference emission levels and/or forest reference levels, in accordance with national circumstances, and with provisions contained in decision 4/CP.15, and with any further elaboration of those provisions adopted by the Conference of the Parties." The Subsidiary Body on Technical Advice (SBSTA) is mandated to develop for consideration at COP17 modalities relating to

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1 See "Outcome of the work of the Ad Hoc Working Group on long-term Cooperative Action under the Convention", Draft decision -/CP.16 ("Cancun COP decision").

2 Safeguards are formulated in Annex I to the Cancun COP decision and include social, legal, and environmental issues.

3 This development is to be done "in the context of the provision of adequate and predictable support, including financial resources and technical and technological support to developing country Parties, in accordance with national circumstances and respective capabilities". See paragraph 71(b) of the Cancun COP decision.

forest reference (emission) levels as well as modalities for measuring, reporting and verifying anthropogenic forest-related emissions.

Outside of the UNFCCC context, various initiatives are financing "readiness" for REDD+ in developing countries. The REDD+ Partnership established in May 2010 seeks to help coordinate REDD+ actions and financial support. Operational multilateral initiatives include the World Bank's Forest Carbon Partnership Facility, the UN-REDD Programme and the Forest Investment Program. In addition, a wide array of bilateral support initiatives exist between the governments of countries like Norway, France, and Germany (among others) who support the testing and learning processes for REDD+ readiness in developing countries.

While many countries and international institutions recognize the relevance of nested approaches, relatively little progress has been made in establishing accounting systems that explicitly support nesting. One forum in which progress is being made on the design of compliance regimes for nested approaches is the Governors' Task Force on Climate and Forests (GCF). The GCF has been working since 2008 on mechanisms to establish partnerships between states and provinces that implement REDD+ programs on one hand, and those that create demand for carbon credits on the other. With fifteen states and provinces from five countries encompassing roughly 20% of the world's tropical forests, the GCF member states are developing capacity and systems to generate measured emission reductions from REDD+ for a variety of market and non-market mechanisms. Primarily focused on linking California's cap-and-trade system with states and provinces in Brazil, Indonesia and Mexico, the GCF is likely to encompass crediting pathways involving an array of nested options from projects, to states or provinces, to national systems.

The voluntary market is also preparing to adjust for the accounting and crediting requirements of nested approaches to REDD+. The Verified Carbon Standard (VCS) has recently launched an initiative to revise and expand its forestry-specific standards to allow different accounting scales, in particular the crediting of project-level activities that are embedded in regional or national accounting systems.

# 3. Policy Considerations

Governments have to prioritize policy options that are effective, efficient, and politically acceptable when implementing REDD+ activities. Levers for shifting land-use and deforestation trajectories may involve cross-cutting measures such as security in land tenure, rural credit, and technical assistance to improve agricultural productivity, strengthened forest governance, climate-smart infrastructure planning, as well as policy reforms in forestry, agriculture, and finance that affect land-use economics. Site-specific or project-level activities can complement these policy choices by encouraging private action on REDD+ and addressing specific constellations of factors driving deforestation.

The decisions regarding how governments prioritize different policies is a critical piece of the REDD+ readiness process and is directly linked to questions of how and if projects-level activities may be incentivized directly. There will be trade-offs between allocating finance for emission reductions to government programs and policies and to individual stakeholders (e.g., communities, landowners, projects). If countries, or states or provinces are receiving credit for emissions that are reduced across the jurisdiction as a whole, governments

will need to determine which portion of credits or benefits are more properly associated with government policies and which with project activities. It is in this context that nested approaches matter. The appropriate choice of REDD+ policies and measures will depend on a series of factors:

- **Agents and Drivers of Deforestation.** The reduction of deforestation and the creation of appropriate incentives for conservation and improved land use will depend on the drivers of deforestation in a particular country and region. Where most deforestation is planned and driven by economic interest of large corporations, policies are likely to consist of a mix of command-and-control measures and incentives that divert economic activities to other sectors or areas. Where deforestation is driven by poverty, the need for fuelwood, or subsistence farming, REDD+ policies are likely to consist of community programs that give access to different sources of income and fuel needed for cooking or heating.
- **Governance.** The choice of policies will also depend on the institutional capacities of a country. In places where corruption is rampant and governance weak, incentives to non-state actors may be more effective than the implementation of government-driven policies. In these cases, a mix of encouraged and supported private (for-profit and non-profit) action paired with governance reform may constitute the best course of action, while in countries with strong governance and effective enforcement systems, regulatory action (such as lifting or enacting tax incentives) may be the most effective way to incentivize REDD+.
- **Political System.** In federal systems, much of the law making and enforcement is delegated to the state and regional level. The policy choice for REDD+ depends therefore on the allocation of authority and powers within the political system of a country. Equally important, and actually far more so for project-level activity, is the political orientation of the state with regards to its role, and that of the private sector, in the economy and forest sector. Governments with a strong tradition of state enterprise and government participation in investment and production are likely to prefer more centralized approaches, while more market-oriented states are likely to prefer options for direct private investment. In a similar vein, states with robust community and civil-society sectors may also be more open towards non-governmental initiatives.
- **Legal Land Status.** Finally, secure rights in forest land are essential for the implementation of REDD+. Where the majority of forest is owned by the government, different policies apply than where forest is privately owned. In the latter case, governments will operate with incentives, as regulation of private property is often limited through constitutional and other legal barriers (that forbid the taking of property rights without due compensation). In cases where land ownership is unclear and titles do not yet exist, other policies will have to establish incentives for forest stewardship.

Allocating resources (whether funds or carbon credits) amongst different options involves trade-offs. In all cases where emission reductions are credited on the subnational level and where a national reference level has been adopted, rules need to guide the allocation of emission reductions between the various levels of action to avoid double counting and crediting of emission reductions. In some cases, subnational action will be credited with tradable carbon credits; in other cases, accounting for emission reductions merely serves to assess the effectiveness of subnational actions or to guide the allocation of incentive payments. In all these cases, rules for nesting are relevant.

# 4. Review of Nesting Options

The nesting of programs and projects within broader accounting frameworks is generally understood as an accounting, management, and incentive system that allows the accounting of emission reductions on various activity and implementation levels. The notion of a nested approach to REDD+ was first introduced by Pedroni et al. (2009) as a way to promote the direct engagement of private actors in project activities nested within a national accounting system. Key assumptions of the nested approach as initially proposed were (i) the use of market-based instruments as a tool to deploy REDD+ finance; (ii) direct crediting of project-level activities; and (iii) the detachment of national-level performance from project-level crediting.[4]

Since then the concept of nesting has been elaborated in a variety of forms by experts grappling with the issue of integrated accounting systems for REDD+ and private sector investment (see Box 1). Over the past couple of years, several organizations, including governmental, for-profit and non-profit entities, have developed a number of conceptual papers highlighting the many intricate aspects surrounding nested approaches to REDD+. These papers have gone into great depth in pinning down some of the most relevant technical, regulatory, and commercial implications of the adoption and integration of project-level activities within national and/or subnational accounting frameworks for REDD+.

**Box 1 – Recent Studies on Nested Approaches to REDD+**

A non-exhaustive list of recent studies relating to nesting approaches to REDD+ includes:

- *Options Paper – Regulatory Design Options for Subnational REDD Mechanism*, William Boyd, University of Colorado Law School, 2010
- *Brazil's Emerging Sectoral Framework for Reducing Emissions from Deforestation and Degradation (REDD) and the Potential to Deliver Greenhouse Gas Emissions Offsets from Avoided Deforestation in the Amazon's Xingu River Basin,* Electric Power Research Institute, 2010
- *Making GCF/ARB REDD feasible for private sector investment,* Tobias Garritt, GCF Representative, Province of Papua, Indonesia (discussion draft of 2010)
- *A Nested Approach to REDD+: How could it be implemented?*, Lucio Pedroni, Manuel Estrada, and Mariano Colini Cenamo in "Pathways for Implementing REDD+", UNEP RISOE Centre, 2010
- *Integrating Project and National REDD+: The Importance of the Private Sector,* Naomi Swickard, Kim Carnahan in "Pathways for Implementing REDD+", UNEP RISOE Centre, 2010
- *An Integrated REDD Offset Program (IREDD) for Nesting Projects under Jurisdictional Accounting,* Terra Global Capital, 2010
- *A Nested Approach to REDD+ - Structuring effective and transparent incentive mechanisms for REDD+ implementation at multiple scales*, The Nature Conservancy and Baker & McKenzie, 2010
- *Engaging the Private Sector in the Potential Generation of REDD+ Carbon Credits: An Analysis of Issues*, Robert O'Sullivan, Charlotte Streck, Timothy Pearson, Sandra Brown, and Alyssa Gilbert, supported by the UK Department for International Development (DFID), 2010

[4] See Pedroni et al. 2009.

The Cancun Agreements indicate that countries may start out implementing subnational accounting systems for REDD+ while preparing for full-scale national REDD+ implementation. Countries are implicitly free to create incentives for project-level activities after the adoption of national reference levels, as long as the overall performance of the country is measured at the national level. Nesting becomes relevant under both scenarios: in the first one, when subnational pilot areas and programs will eventually have to be integrated into future national accounting systems; in the second, when incentives are passed on to sponsors of programs and projects within the context of already established national accounting systems.

While it is not clear whether an international REDD+ mechanism will allow the creation of compliance-grade credits, the need to involve the private sector (investment by landowners, investors, companies and non-profit civil society organizations) in REDD+ implementation remains obvious. The level of finance estimated to effectively address emissions[5] from the forestry sector in developing countries cannot be pooled and deployed in the required quantity and speed without significant private sector engagement. Actions on the ground will also necessarily entail the participation of non-governmental organizations (NGOs) and companies, directly or indirectly. Hence, creating the conditions for program- and project-level activities to be nested within national and/or subnational accounting, and providing the means for private sector engagement in such activities remain important goals of nested approaches to REDD+.

## 4.1 Phased Approach

One of the key advantages of nesting is that countries and states or provinces can begin implementing REDD+ in a step-wise approach, moving progressively from independent accounting of projects to nested projects within states or provinces, and finally to a full-fledged national accounting system.

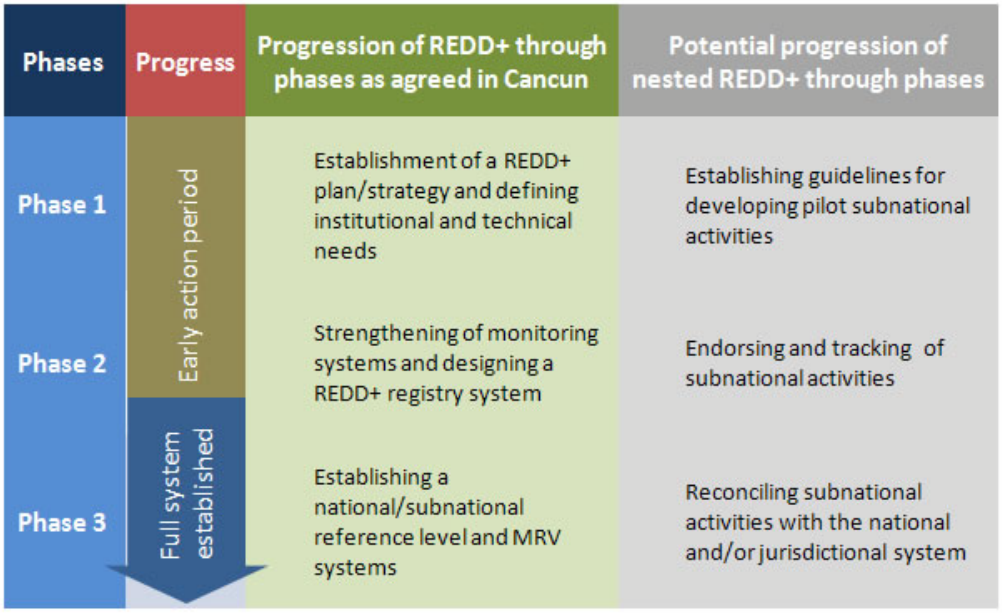
The language in the Cancun UNFCCC decision on subnational activities allows countries to make use of subnational accounting and monitoring as an interim measure to a national REDD+ system. While the decision does not explicitly affirm the continuation of subnational approaches once the national system is established, it is reasonable to assume that countries will still be able to make use of subnational approaches as long as the overall accounting of emissions ultimately occurs at the national level. Similarly, the UNFCCC decision in Cancun recognized the implementation of REDD+ through progressive phases, with the last phase being associated with the complete establishment of a national MRV system that allows for results-based actions. Countries will therefore be able to engage in REDD+ activities even before a fully-fledged accounting system (i.e., national reference level and national MRV system) is in place.

[5] The actual cost of reducing emission (as opposed to readiness measures) is estimated at USD17 billion to USD28 billion per year in order to halve global deforestation according to opportunity cost estimates in major forest nations. See Pagiola and Bosquet 2009.

The following phases for implementing a nested REDD+ approach may be envisioned:[6]

- An initial phase in which countries and states or provinces would establish: (i) criteria for approving pilot REDD+ projects, including some basic rules for the reconciliation of these projects with the subnational or national accounting, once this is in place; (ii) a strategy to control deforestation and degradation; and (iii) possibly a target for reducing (emissions from) deforestation and degradation.
- A second phase in which additional institutional and technical capacity is put in place, such as the implementation of a national and/or subnational monitoring systems and the development of a registry for tracking emission reductions and units issued for subnational projects.
- A third phase in which national reference-level and MRV requirements are fully developed and reconciliation (including grandfathering) occurs.

**Figure 1 – Phased Approach to Nesting**




[6] See De Gryze and Durschinger 2010, and Garritt 2010.

## 4.2 Distribution of Incentives

International incentives for REDD+ may take the form of results-based payments from bilateral and multilateral public sources, or may be mediated by the creation of offsets that may be used by countries or entities to meet voluntary goals or compliance requirements. Whether credits or offsets may be used for compliance purposes will form part of an international agreement is still an area of contention within the UNFCCC process, but such use of offsets was included in draft US federal legislation and in California's emerging emissions trading system.

As a general rule, advocates of nested approaches see an advantage in promoting both carbon markets and public funding mechanisms. It is also possible to combine these funding streams: REDD+ incentives can come in the form of carbon credits (recognized in voluntary and/or regulated markets) as well as results-based payments from public sources (e.g., Green Climate Fund, bilateral REDD+ funding). Currently, REDD+ public fund-based payments are typically associated with rewarding policies and programs carried out by governments, whereas direct crediting mechanisms (i.e., issuance of carbon credits) are seen as a more appropriate alternative for attracting voluntary or compliance-driven private demand and stimulating private sector engagement at the subnational level.

The allocation of incentives can be **direct** (i.e., when project entities receive incentives directly from an international REDD+ system, as is the case under the CDM) or **indirect** (i.e., when project entities receive incentives via the central government or a subnational government). The international REDD+ system would specify the crediting mechanisms available at the international level, including options for direct crediting of emission reductions to national actors. Allocation of REDD+ credits or benefits under nested architectures therefore involve institutions and policies at least two different levels:

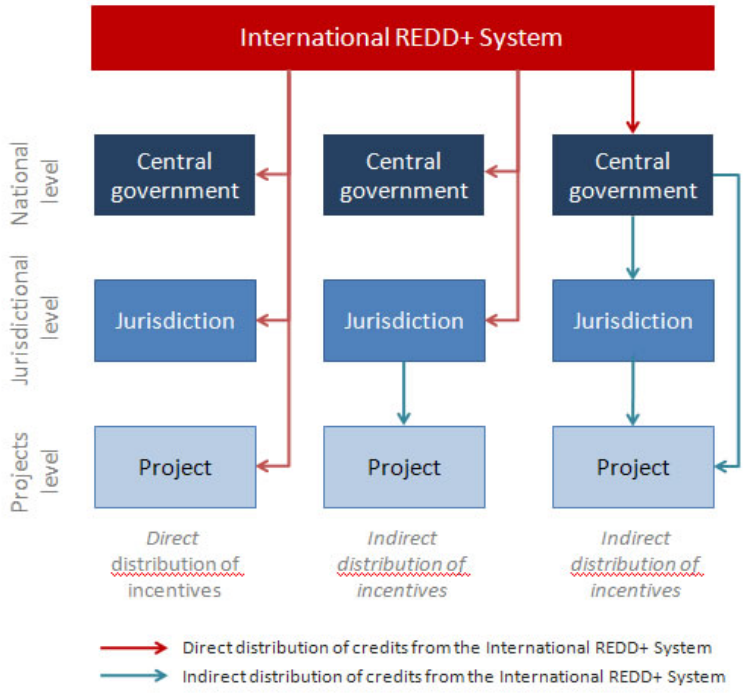
i) The international REDD+ mechanism regarding the direct allocation of incentives and/or credits, and

ii) National (and/or state/provincial) government decisions regarding the allocation of credits and benefits within jurisdictional boundaries.

There are a number of options for initial incentive allocation by a bilateral or international REDD+ mechanism. Although other variations exist, major scenarios can be broadly summarized as follows:

- Direct distribution of REDD+ incentives from the international REDD+ mechanism to subnational actors as well as governments;
- Direct distribution of REDD+ incentives from the international REDD+ mechanism to states/provinces and indirect distribution (or pass-through) of REDD+ benefits from governments to private actors;
- Direct distribution of REDD+ incentives from the international REDD+ mechanism to the national government only, and indirect distribution (or pass-through) of these to state/provincial governments and to private actors.

**Figure 2- Distribution of REDD+ Incentives**




Where the international REDD+ mechanism accepts direct project-level crediting, countries and states/provinces may restrict their role to endorsing projects for international approval and crediting. Direct of projects is generally seen by private entities and investors as the most attractive option as it requires less governmental intervention when compared to indirect forms of crediting.

When the international REDD+ mechanism allows indirect distribution of incentives, national and potentially subnational governments will have flexibility in allocating incentives within their jurisdictional boundaries. Governments have a series of choices in this regard:

- **Whether to incentivize project-level activities.** Determining the role of project activities involves a strategic decision regarding the relative weight of policies and programs as opposed to site-based project activities. Governments may choose to fully support project-level activity, to restrict REDD+ projects to certain geographic areas,[7] or to focus mechanisms solely on government policy and programs, excluding projects.
- **If project-level activities are to be incentivized, whether to allocate tradable credits or financial benefits/incentives to these projects.** While traditional carbon project models (e.g., CDM, JI, or the voluntary market) are based on allocation of tradable credits, other performance-based options exist,

[7] Some analysts have suggested *only* allowing credits to be generated from geographically defined activities in order to establish a causal link between the activity and the emissions reductions or removals achieved. See De Gryze and Durschinger 2010.

including ex-ante financial incentives (e.g., payment-for-ecosystem-services (PES) schemes such as those in Mexico, Costa Rica, and Ecuador) or ex-post results-based payments (functionally equivalent to feed-in tariffs in the energy sector). The decision as to whether to distribute credits or payments will depend on government evaluation of risks, transaction costs, and the most effective mechanisms to attract capital and promote change on the ground.

- **Decide on the criteria or basis for allocating credits or incentives.** Benefits can be distributed to projects:
  - Project-level accounting of achieved greenhouse gas (GHG) benefits (as is currently the modality for CDM and voluntary carbon projects and as explored further in section 4.8 [leakage]);
  - Other performance metrics (e.g., hectares of deforestation avoided as opposed to $tCO_2$);
  - Other benchmarks or criteria (e.g., estimated opportunity cost, adjustment factors for other social, equity and development objectives).

## 4.3 Regulatory Aspects

Regulatory aspects of REDD+ will have a considerable impact on the ability of REDD+ policies to attract private investment. In order to create a viable and workable framework for nested forms of REDD+, guidelines can be formulated in parallel at the international and at the national level. In this document, we focus on the regulatory considerations that are relevant at the national level. International regulatory elements and options are briefly outlined in Box 2.

**Box 2 – International Regulatory Aspects**

In order to incentivize nested projects an international REDD+ mechanism can explicitly deal with a number of issues, including:

- Establishing criteria for endorsing national REDD+ programs, including elements used for establishing the reference-level and MRV requirements.
- Defining whether in addition to determining national REDD+ criteria, distinct project activities within subnational REDD+ programs could be submitted for international approval.
- Defining types of crediting mechanisms that would be available for projects and program (e.g., direct and/or indirect crediting of activities).
- Defining criteria applicable to projects developed prior to the establishment of national reference levels to incentivize early action.
- Defining the criteria for issuance/acceptance of REDD+ credits, including whether successful performance at the subnational level would be a requirement for issuance/acceptance of credits at the project-level.

Under the UNFCCC, some of the eligibility criteria for REDD+ are already emerging. The UNFCCC decision in Cancun established some prerequisites for countries to qualify for REDD+, including an established national strategy, a national forest reference (emission) level, a robust monitoring mechanism, and a system for reporting on safeguards. Approval of national REDD+ activities, in turn, should be subject to the requirements listed in annex I of the UNFCCC decision, which includes being country-driven, consistent with the objective of environmental integrity and national development goals, and results-based.

## Government REDD+ Regulation

For those countries and states/provinces that wish to encourage and regulate project-level activities, the adoption of implementation guidance via national law is recommended. Such guidance could be adopted as freestanding act of law or in the context of more comprehensive REDD+ regulation that formulates the national REDD+ strategy, defines the scope of REDD+, prioritizes policies, formulate the principles guiding REDD+ activities at different levels, and decides on the basic institutional set-up. In addition, some issues are particularly important for attracting non-state actor engagement, such as: establishment of a registry system, definition of entitlement to emission reductions and benefits, and adoption of a domestic standard or protocol for project development.

The enactment of general REDD+ regulation at the national level is particularly useful in federal systems, where states and provinces also have power to regulate environmental issues. National REDD+ guidance ensures consistency by having states and provinces abiding by the same principles and general rules, while leaving flexibility for subnational governments to regulate REDD+ in accordance with regional and local circumstances and needs. From a private engagement perspective, the early establishment of a national REDD+ framework would be very positive, as it reduces uncertainties related to future conflicts of laws or the potential overriding of existing state/provincial laws.

Governments may, for instance, define eligible REDD+ activities. Countries or states/provinces may opt to follow the full scope of REDD+ as agreed at the UNFCCC level, may restrict its scope in accordance with current national/local capabilities (e.g., deforestation and sustainable forest management only), or may even expand the system's reach to include other activities (see section 4.5).[8] Ineligible activities such as reforestation with exotic species and conversion of natural forests may also be explicitly stated in the REDD+ regulation.

Countries and states/provinces need to consider the relevance and need for creating regulations and dedicated institutional arrangements for nested forms of REDD+ where little activity is being done on the ground. For instance, in countries where few voluntary projects and/or subnational initiatives have been developed so far the introduction of comprehensive regulation and new (or reformed) institutions may have little impact. In these circumstances, governmental procedures for issuing non-objection or endorsements letters to projects on a case-by-case basis might suffice as a low-cost first step to stimulate project development.

### *Institutional Arrangements*

A basic institutional set-up should include the designation of a regulatory entity responsible for overseeing and approving REDD+ projects and programs. This regulatory entity may be a new dedicated public agency, an autonomous entity, or an existing entity (e.g., the entity responsible for the forestry sector).

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[8] This may be the case with broader regulations created to protect and incentivize ecosystems services beyond REDD+ (e.g., water quality control, and social-biodiversity). Activities falling outside the scope of REDD+ as determined by an international REDD+ mechanism may not be creditable separately under that regime, but may still be considered as complementary to REDD+ and weigh-in positively in the approval of such activities.

The REDD+ regulatory entity's attributions and powers may also be identified in the REDD+ framework and could include:

- Establishing procedures for approval of subnational and project activities;
- Registering and listing REDD+ project activities;
- Overseeing the operation and functioning of a registry for activities and reference levels;
- Establishing procedures for monitoring of activities, including requirements for dealing with leakage, permanence, and double-counting;
- Issuing credits or defining allocation of credits or other incentives;
- Following obligations regarding consultation of/information dissemination to stakeholders;
- Hearing cases and resolving disputes that may arise as a result of REDD+ implementation and/or decisions of the national regulatory body; and
- Formulating provisions related to grandfathering of activities implemented before the establishment of the domestic system.

An autonomous entity may provide transparency to the domestic REDD+ system and, to some extent, reduce the risks of political interference where pure technical decisions are required. The recently enacted legislation on payment for environmental services in Brazil's Acre state creates an organization that is self-managed and administratively independent from government, although it is supervised by the state environmental department. The effectiveness of such entity depends on continual political commitment to REDD+ and the entity itself. It is therefore important that the entity be established at appropriate level of seniority and with cabinet-level support. A REDD+ law may designate sources of funding to support the operation of the responsible entity. The entity may also be supported in its tasks by independent committees comprised of technical experts and representatives of civil society, as defined under the general REDD+ guidance.

### *Definition and Transfer of Carbon Rights*

Clear rules around ownership and title to carbon rights give project developers additional regulatory certainty. Governments could, for instance, clarify the extent to which non-state actors can own and transact internationally recognized emission reductions and how these are related to laws that pertain to land and forest tenure and other environmental resources of the country or subnational government.

In addition, governments may define in REDD+ guidance the basic features of those emission reductions. Some countries may wish to restrict the sale of a portion of those units to foreign entities as offsets to meet national (voluntary) commitments. For example, some countries, like Brazil, are considering distinguishing between units which would only entitle holders to receive fund-based payments (non-tradable) from units which could be transacted as offsets.

Governments may also wish to establish guidance on benefit-sharing arrangements between local communities and project developers.

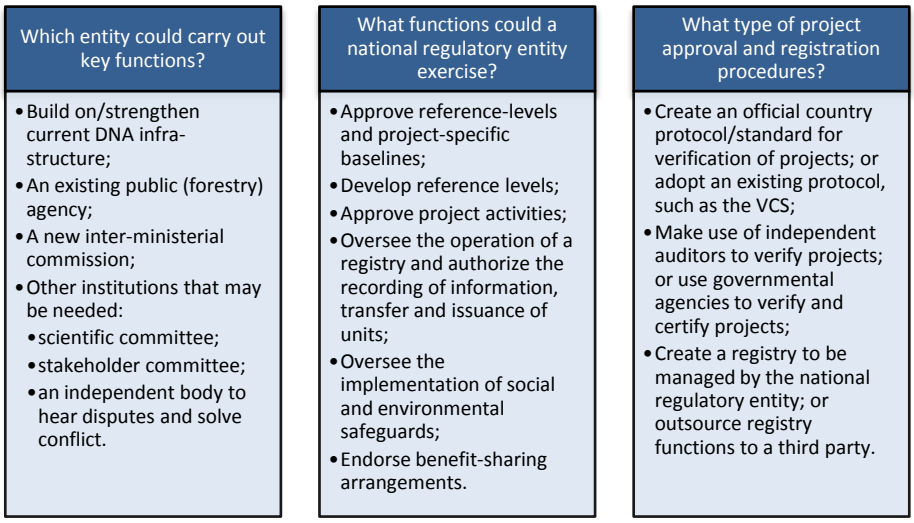
### *Approval of Projects*

There can be several layers of approval in a REDD+ system which must be reconciled and streamlined. At the international level, a REDD+ mechanism could set its dedicated system for approving projects and programs. In the absence of (or in parallel to) an international REDD+ mechanism, international regulation may result from bilateral agreements. This may lead to the creation of a plethora of guidelines and eligibility criteria for governments that participate in various multilateral and bilateral initiatives.

At the domestic level, governments have to decide what is required to approve or endorse projects; who proposes and registers subnational reference levels; what type of verification and certification procedures will be put in place; and what the relevant consultation procedures are. There are many policy options available to governments in relation to designing these approval procedures, including:

- Defining whether procedures for implementing projects should be created on a provisional basis to incentivize action prior to the full establishment of a national REDD+ system;
- Developing an official standard for forestry carbon quantification, or appointing one or more voluntary carbon standards to be used on a provisional basis, if appropriate;
- Appointing domestic public agencies to carry out validation and verification of projects, or making use of independent auditors (similarly to the CDM);
- Creating a REDD+ registry to be managed by a domestic regulatory body or outsourcing registry operations to a specialized third party; and
- Defining who should be consulted when putting in place procedures for approval of projects.

**Figure 3 – Design Options for Approval Procedures**



These decisions will be influenced by the rules and procedures established on the international level. As international regimes for REDD+ are still evolving under the UNFCCC as well as under other regional and state forums such as the Governor's Climate and Forest Task Force and in California (see Annex I), governments may wish to allow some flexibility for regulatory adjustments in their REDD+ legislation. These adjustments can be implemented and overseen, as needed, by the relevant national and/or subnational REDD+ regulatory body.

### *Promotion of Early Efforts*

Where countries wish to incentivize early action, they may give REDD+ project proponents additional guidance and assurances, such as:

- Requiring projects to follow basic technical, social, and environmental standards that allow projects to qualify for the future national REDD+ system (this includes, for instance, making use of conservative baselines based on (pre-agreed) parameters, so as to allow for a smoother transition to the national REDD+ system);
- Providing project developers the certainty that, if government-approved standards are followed, projects and emission reductions or removals will be taken into account and grandfathered into the national REDD+ system; and
- Ensuring projects and emissions can be accounted for and tracked properly during the early phase. Without an appropriate database to register and collect information about projects, their baselines and emission reductions, the task of reconciling pre-nesting activities with the national REDD+ system once established may be insurmountable.

Governments may establish their own official voluntary standards which would apply for projects seeking future recognition, or may refer to one or more of the existing voluntary carbon standards, such as the Verified Carbon Standard (VCS) (see Figure 3); They may also determine the period of validity for project baselines being grandfathered to a fully nested system or devise other rules to ensure smooth progression to broader accounting.

Governments may also outline basic procedures for adjusting existing voluntary projects so that they meet the requirements of the official standard. These may include, for instance, dedicated provisions that indicate what modifications or additional information is required for projects to qualify under the official standard.

**Box 3 – Early Efforts in Mexico**

The Climate Action reserve is currently developing a Forest Project Protocol for use in Mexico, stemming from a September 2009 Statement of Intent between CAR, the Secretariat of Environment and Natural Resources of the United Mexican States (SEMARNAT), the California EPA, and the ECOLIFE Foundation. This version of the protocol will be used to guide the development of the Mexican Protocol for forest management and reforestation in Sierra Madre Occidental States and Michoacán, including developing standards for nested projects within a REDD framework. Project types will include Reforestation, Avoided Deforestation (Avoided Conversion) and Sustainable Forest Management (Improved Forest Management). Separate protocol documents will be developed by CAR staff in Mexico for each project type, taking into account the specifics of Mexican forest carbon sequestration. Protocols for Reforestation will be developed first, as the other two rely on more complex data. Finalized protocols for all three project types are expected by the fall of 2011 (CAR 2010).

## 4.4 Use of a Registry for REDD+

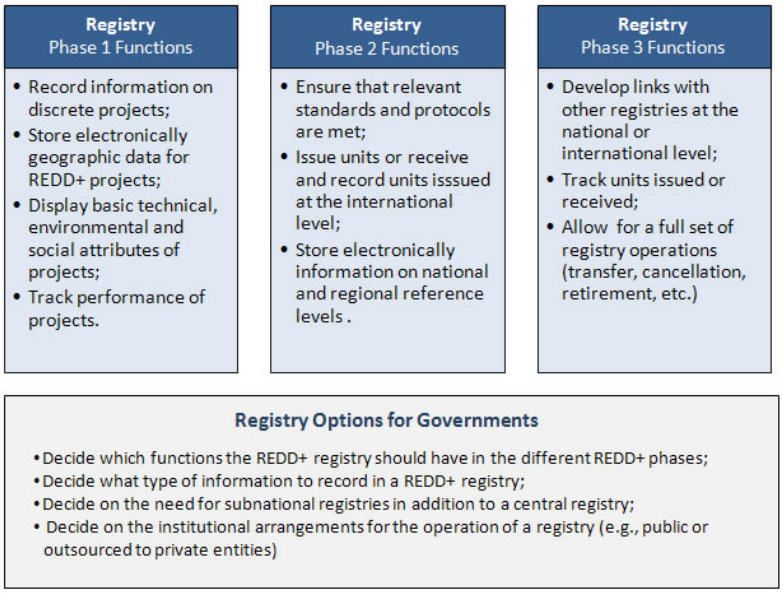
A registry functions as an electronic database that enhances transparency, efficiency, and environmental integrity of REDD+ actions domestically. A registry may have multiple functions and may also be designed to evolve over time and in accordance with a country's progress through different phases of REDD+ and nesting. For instance, in an initial stage, where only a limited number of project-level activities have been implemented and actions being carried out domestically are mainly readiness-related, a national or subnational registry may simply capture core information for discrete projects and track activities and performance. Early use of a registry would help in avoiding double-counting of emission reductions as the number of projects increases. As MRV capacities grow domestically and reference levels are being adopted, various reference levels (national and subnational) can be consolidated, and the outcomes of projects can be recorded. Issuing and tracking of REDD+ units could be a feature for countries and states/provinces that have already achieved the final phase of REDD+. Examples of supporting functions of a REDD+ registry include:

- Capturing basic information on discrete projects implemented prior to a national or subnational REDD+ accounting system;
- Displaying environmental, social, and technical criteria applicable to projects;
- Ensuring the requirements of the relevant standard or protocol have been met;
- Tracking performance of projects and storing information on credits issued or payments made to projects; and
- Issuing and tracking movement of units, where these can be traded.

Governments may decide to create only one central national registry to serve as main depository of all relevant information or may establish additional independent registries for each state/province. While the latter may require additional resources and institutional infrastructure, it may be a helpful approach to supporting a nested approach in states with federal systems.

The registry system can also be of great value for clarifying title and effecting transfer. A registry provides transparency and certainty to the process by publishing title to land and carbon. A registry can also be used to enforce policy decisions by making the transfer of title of credits dependent on the fulfilment of certain eligibility criteria.

**Figure 4 – Potential Functions and Design Options for a REDD+ Registry**




## 4.5 Definition of Risk Mitigation Tools

Different views exist as to whether the receipt of REDD+ credits at the project-level should be tied to government performance. Some experts are of the view that, in order to maintain environmental integrity of subnational REDD+ systems, no credits should be issued to project-level entities unless the government reduces emissions beyond its reference level.[9] Systems would, in this case, be designed in a way that credits at the project level would be issued only **after** a positive assessment of the government's performance overall.[10] Others favor decoupling projects and government performance as the only realistic means to reduce risks and attract substantial private sector participation. De-linking government performance from project-level performance reduces the reliance of private investment on governmental action and could thus promote an early flow of private capital and help achieve emission reductions in the near to medium term.[11]

What seems clear, however, is that private sector engagement in REDD+ is conditional on the ability to assess and manage risks affecting project success. While the private sector is normally prepared to deal with risks associated with project performance, counter-party credit risks, and market and currency fluctuation, it is not normally willing to take on significant political and sovereign risks (such as failure of the government to perform, absence of clarity of carbon rights, and poor enforcement capacity).

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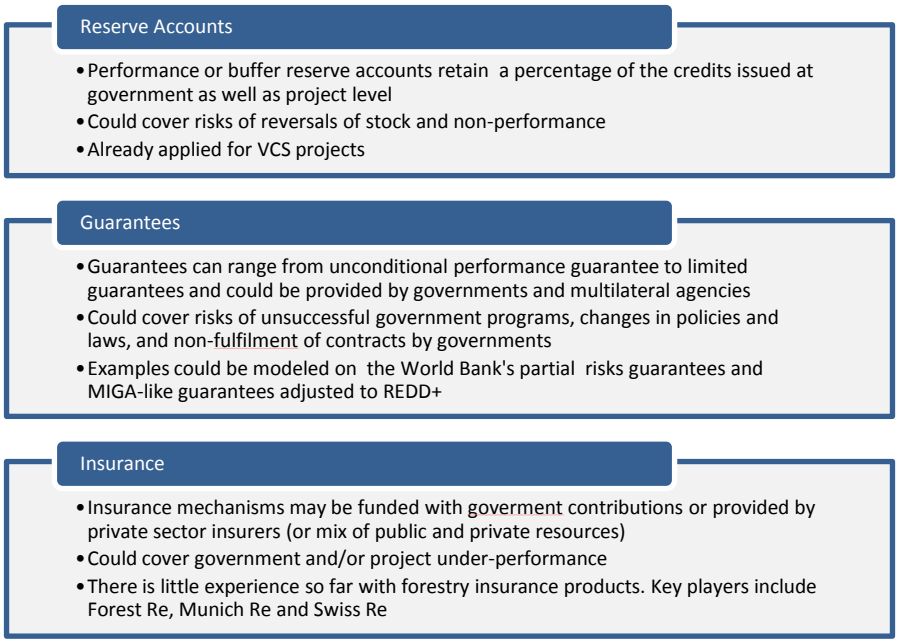
[9] See Cortez et al. 2010.

[10] See Electric Power Research Institute (EPRI) 2010.

[11] See Pedroni et al. 2010.

Governments can establish provisions that mitigate the risk of private project developers to lose carbon credits for the government's failure to reduce emissions (Figure 5). These mitigation tools may be used in many different combinations. One potential scenario is the use of a reserve account at the government level and an insurance policy (or a performance reserve account) at the project-level. The government reserve account would serve to cover for government non-performance in future verification periods and would ensure that successful project activities can still receive credits. The project-level insurance (or performance reserve account), on the other hand, would insure the government against non-performance at the project level.[12]

**Figure 5 – Potential Risk Mitigation Tools Available to Governments and the Private Sector**




## 4.6 Measurement and Monitoring

Emission reductions and removals reported as resulting from REDD+ action at the subnational level, whether by projects, states/provinces, need to be consistent and tally with emission reductions achieved and reported at the national level. To ensure environmental integrity of the system, national-level reductions should be the sum total of all reductions within the country's boundaries.

Determining the relative contributions of subnational activities to emission reductions and removals is essential to avoid government liabilities and double-counting. If nested systems have inconsistencies across scales then, at the very least, they will result in inefficient allocation of resources (granting more credits or payments to some entities than warranted). In a worst-case scenario, emission reductions attributed to projects may exceed

[12] This scenario is mentioned in Cortez et al. 2010. A similar scenario was also discussed during the high-level workshop in Miami.

or undermine reductions claimed at national scale (granting more credits or payments than the system actually has).

Measuring and monitoring emissions from forests and land-use is increasingly feasible, with clear guidance and rapidly growing technical and institutional capacity around the world. However, many specific parameters will need to be determined at the national level in order to ensure that forest cover, forest condition, and carbon stocks are measured consistently at different nested levels. At COP 15, parties agreed to use the most recent Intergovernmental Panel on Climate Change (IPCC) guidance and guidelines as the basis for estimating anthropogenic forest-related greenhouse gas emissions by sources and removals by sinks, forest carbon stocks, and forest area changes.[13] Following this principle in a multi-level nested accounting approach requires standardizing the use of certain elements and concepts, while other methodological decisions can be left to project proponents at the project and subnational level.

## Definition of Forest

Consistent forest carbon accounting requires a common understanding of what constitutes a "forest" and its boundaries. Countries wishing to engage in REDD+ will need to adopt a clear definition of forests that is applicable at multiples scales. A consistent national forest definition based on structural characteristics (correlated with carbon stocks) is a prerequisite for determining when and where deforestation is considered to occur, and for differentiating between deforestation and forest degradation. Many countries that have adopted definitions of forest in the context of the Clean Development Mechanism[14] may want to reevaluate the chosen definition in light of REDD+ implementation.

## Eligible Activities

Deforestation is, relatively speaking, the most straightforward activity of the ones covered by REDD+, both in terms of definitions, as well as measurement and monitoring considerations. UNFCCC parties have agreed on a deforestation definition under the Kyoto-Protocol, conceptualizing it as "the direct, human-induced conversion of forested land to non-forested land."[15] In contrast, a UNFCCC decision defining degradation is still pending. It is unclear how activities like degradation and sustainable management of forests, enhancement of carbon stocks, sustainable forest management and afforestation/reforestation can be conceptually distinguished. For example, minimizing collateral damage of timber harvesting practices in forest concessions could be considered as reducing degradation or as one of the means of sustainable management of forests. Thus, national authorities need to establish guidance for projects and subnational activities to account properly for different activities, avoiding inconsistencies with emerging national compliance frameworks. This guidance should include clear definitions of eligible activities and probably limitations on eligible activities in a phased approach, depending on what can effectively be captured in national MRV (e.g., beginning solely with reductions in emissions from deforestation).

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[13] See FCCC/CP/2009/11/Add.1.

[14] The rules of the Kyoto Protocol require countries to adopt parameters within a forest definition that includes a minimum area (0.05-1.0 hectare), tree crown cover threshold (>10-30 %), and minimum potential tree height (2-5 meters). See 16/CMP.1, Annex, paragraph 1(a).

[15] See FCCC/KP/CMP/2005/8/Add.3.

National, subnational, and project-based activities will also have to address questions of scale and significance in order to be clear about which types of land-use changes have to be accounted for at which level. While large-scale changes from forest to cropland can be easily tracked as deforestation with remote sensing means at all levels, dispersed, small-scale slash-and-burn practices could be far more difficult to monitor at the national level. In this case, subnational schemes might provide for the necessary means to track local land-use change dynamics. However, to avoid asymmetries in accounting, a common conceptual framework on how to integrate these different monitoring efforts needs to be established upfront. This framework should be based in IPCC's key categories analysis, which leads to an identification of land-use change to be considered significant in terms of their absolute emission and removal level, related uncertainties, and trend.[16] Each country will determine those key categories which encompass all significant emission sources at the national level.

## Stratification

To determine emissions factors consistently for different forest types, the IPCC 2006 Inventory Guidelines require stratification of land-use data considering climate, soils, ecological zones, and management practices.[17] An agreed national stratification scheme, established up-front, can avoid the problem of entities applying different emission factors to equivalent forest ecosystems. This scheme might stratify the country at a higher level and leave room for sub-stratification at the subnational and project level. This would be in line with the IPCC 2006 distinction of different complexity levels ("tiers") and spatiotemporal boundaries ("approaches"). To begin with, national accounting might aim first at tier 2-compliant accounting (use of IPCC default assumptions and methods, applied to national data), accounting for land-use change between two points in time based on key categories (approach 2[18]). Project-based and other subnational activities could start applying site-specific methods or assumptions to site-specific data (tier 3), spatiotemporally tracking emissions and removals across all key categories (approach 3). While projects or other subnational activities might have the resources to measure relevant carbon pools at tier 3 level based on an agreed stratification, countries will require several (possibly many) years to fully cover the national forest domain within a GHG inventory.

Applying a national sampling scheme and standard measurement protocols could facilitate sharing emission factors amongst different levels, reducing implementation costs substantially. Measuring above-ground biomass within one stratum requires a certain sampling density to be determined upfront. If projects or states/provinces sharing the same forest stratum agree to divide their efforts to achieve the required sampling density jointly, they could establish tier 3 emission factors at lower costs.

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[16] See IPCC 2006 Vol. 1, Chap. 4.1.1.

[17] See IPCC 2006 Vol. 4, Chap. 3.3.2.1.

[18] In the context of IPCC 2006, approaches describe different ways of representing so-called activity data, i.e., data on the magnitude of human activity resulting in emissions or removals taking place during a given period of time (IPCC GPG 2003). While approach 1 provides only data on the area of each land-use category and not on the change between them, approach 2 tracks conversions for key categories (land-use changes significant in terms of their absolute level, uncertainties, and trend) between two points in time. Approach 3 goes one step further in spatiotemporally tracking changes between all key categories across several periods. In general, approach 3 is considered the most appropriate approach for REDD+ (see GOFC-GOLD 2010). However, only very few Annex I countries are currently using it due to its complexity.

### Accounting Periods

REDD+ activities are being implemented at different pace. Some have already begun, while others are scheduled to be implemented in the near future. Achieving temporal consistency in emission accounting across different scales will become a challenge the more stand-alone activities become operational in a national domain. One way to overcome this challenge is to standardize future accounting periods at the national level. Projects and other subnational schemes can be encouraged to anticipate these periods by providing corresponding data sets or remote-sensing products as a common basis for emission accounting at different levels.

## 4.7 Baselines or Reference Levels

The baseline or reference level establishes the benchmark for creditable emission reductions. The term reference level is more frequently used in the context of national or subnational accounting, while baseline is the most common usage for project-level accounting. The concept generally refers to a business-as-usual (BAU) projection of emissions.[19] Under the UNFCCC, the additional application of adjustment factors is being discussed to take into account particular national circumstances. For the purpose of this paper, reference levels are understood as BAU baselines. Due to their counterfactual nature, reference levels can never be verified or measured. It is widely agreed that setting business-as-usual reference levels is technically and politically challenging because it essentially means predicting and agreeing on an unknowable future. Challenges are further compounded in nested frameworks because reference levels at different scales must be consistent and coherent.

Reference levels can usefully be separated into two elements: future *rate* and future *location* of deforestation and its associated emissions, as they are under the approved VCS methodologies for avoided deforestation. Each element is discussed in turn, including specific recommendations on each.

### Baseline Deforestation *Rates*

The projected rate of deforestation will depend on many factors including governance decisions, population growth, markets for land, agricultural and forest products, infrastructure development, amongst others. Methodologies at the project level under the VCS, for example, allow for the projection of deforestation rates based on historical averages, linear projections, non-linear projections and/or modeling.

### Baseline Deforestation *Location*

The challenge in a nested system is that an overall country- or state/province-wide deforestation rate is not evenly distributed across the forest landscape. Even countries with high rates of deforestation will contain areas with a high probability of being cleared as well as areas at low risk; protecting and managing the former will

[19] Although "crediting baselines" may refer to a level of emissions lower than BAU, with crediting for emissions reductions only below this level, with the aim of increasing environmental stringency and reflecting the shared nature of responsibility for emissions reductions between host governments and other jurisdictions demanding offsets.

reduce emissions, while protecting and managing the latter will not.[20] For this reason, determining where and when deforestation is likely to take place is critically important.[21] Within a nested framework, there are two broad pathways to develop and integrate baselines from projects and states/provinces[22] – i) disaggregate or bottom-up; or ii) consolidated or top-down.

### *Disaggregate or Bottom-Up Baseline Development*

Currently, project-based accounting approaches, such as those under VCS methodologies, establish project-level baselines, predicting rates, location, and timing of expected deforestation with a baseline that must be periodically updated. This baseline is based on an analysis of deforestation agents and drivers in a broader reference region that mirrors conditions at the project location. One approach to baseline determination in a nested structure is for government regulators (or authorized third-party auditors) to review, approve, and register project-originated baselines, gradually building up a patchwork or mosaic of baselines within their jurisdiction. Consistency of these nested baselines can be further enhanced by establishing methodological guidance on how to establish consistent projective reference emission levels at the subnational level. Those preconditions could encompass a systematic listing of agents and drivers to be considered, a certain type of modeling approach, validation techniques, or policy scenarios, amongst others.

The disaggregate approach has the advantage of being deployable in the short-term, harnessing the interest of project-level entities to invest in the design and modeling work required, gaining time while more complex processes are consolidated at state/national level. If these baselines are rigorously and conservatively constructed *and* if the scale of the sum of project activities is likely to be a limited proportion of overall country or state/province reductions, this approach may be an appropriate interim step to catalyze REDD+ activities. Under these conditions, it would be expected that project-level reductions would be consistent with the national baseline and not represent severe distortions.

The disaggregate approach has the disadvantages of nearly certainly leading to inconsistencies between project baselines, especially if and when projects have overlapping reference regions. Even the best modeling exercises will produce varying outcomes, especially as project-level entities have strong incentives to maximize predictions of baseline emissions. Integrating different baselines might become nearly impossible in cases where the reference region or leakage belt of one project includes the project area of a subsequent project. Overlaps will, in turn, cause shortages of suitable reference areas for additional baseline development and updating and will also dramatically increase transactions costs of project development, with each project having to replicate investments in data collection, model design, and validation.

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[20] E.g., a country with a high 2% p.a. rate of forest loss would still be expected to have 80% of today's forests standing in 2020, meaning that some areas of forest are near certain to be cleared, while others, for reasons of suitability or access, will almost certainly not be deforested.

[21] Inefficient targeting has been pointed to as a weakness of forest conservation incentives or payment for ecosystem services programs, with compensation largely flowing to areas that were not significantly at risk of deforestation (se Pattanayak et al. 2010, Wunder et al. 2008). Poor spatial allocation of baseline deforestation rates could lead to similar distortions, potentially putting a country's overall REDD+ outcomes at risk.

[22] Depending on the scale of the jurisdiction there may be advantages to an intermediate step, disaggregating reference emissions levels to smaller subnational or regional scales, to reflect differences in circumstances as well as inter-regional equity issues, as has been proposed for the Brazilian States (see EPRI 2010 and Cortez et al. 2010).

### *Consolidated or Top-Down Approach*

To ensure consistency and streamline project development, a country or state/province may choose to develop spatially explicit regional baselines as the basis for calculating emission reductions. In essence, this may simply be a scaling-up of the sorts of baseline approaches developed for the project level under VCS methodologies. This type of approach is currently being developed, for example, in two regions of Peru[23] (see Box 4) and in Colombia.[24] Under a top-down approach, a regional baseline zones or stratifies the forest landscape to predict the rate, location, and timing of future deforestation and calculate emission reductions from specific project areas against the model, allowing projects to extract relevant project-baselines out of a broader baseline map.

The consolidated approach has the advantage of creating a clear, internally consistent framework for determining emission reductions from project-level activities, ensuring that these add up consistently with region-wide emissions levels. Having regional baselines in place also achieves significant economies of scale for project development, allowing a greater share of investment to flow to communities and landowners for emission reductions activities, rather than complex technical exercises. Consolidated approaches, however, are likely to require significant investments and longer lead times due to the scale of the efforts involved.

Adopting regional baselines may also prove contentious and politically charged. Government endorsement of spatially explicit regional baseline models is based on the presumption that they accurately reflect the location and timing of future deforestation. As high-stakes financial and commodity markets consistently demonstrate, the accuracy of predictions made by models of complex systems is frequently doubtful.[25] Risks and controversy can be compounded if a fairly opaque technical exercise aims to determine apportionment of rights to potentially valuable carbon assets across the landscape and rights holders. Even if validated by technical experts, the use of regional baseline maps is likely to be challenged if these serve as the simple basis for allocating credits, allowing some landowners to claim benefits for emission reductions while excluding others.

The VCS Association is currently carrying out a process to establish new guidance for regional baselines to be used to support both project- and national-/subnational-level accounting.

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[23] San Martin and Madre de Dios. Regions are decentralized entities under the Peruvian system, analogous to states or provinces.

[24] Cortez et al. 2010.

[25] Taleb 2007. Or, as the physicist Niels Bohr noted, "It is exceedingly difficult to make predictions, particularly about the future."

**Box 4 – The Examples of San Martín and Madre de Dios**

Of Peru's 25 regions, San Martín and Madre de Dios are two of four that have been given decentralized authority for forest management by the Ministry of Agriculture. These two regions are already organizing participatory technical processes and formulating spatially and temporally explicit deforestation forecasts. These processes are backed by Regional REDD Roundtables, which are composed of organized civil society and are authorized as consultative and technical implementation agencies by the regional governments of San Martín and Madre de Dios. These Regional REDD Roundtables both guide institutional coordination among the different levels of REDD+ implementation (i.e., local, regional, national) and build capacity for the development of reference scenarios and MRV. Thus, in both San Martín and Madre de Dios, technical working groups have been formed, financed by project promoters and international NGOs, to analyze satellite images, opportunity costs, carbon stock inventories, and regional emission forecasts.

In Madre de Dios (where there are at least 11 projects), the development of reference emission scenarios is well advanced, with three working groups analyzing historical deforestation, studies of biomass and carbon, and modeling of deforestation respectively. Brazil's Institute for Environmental Research on the Amazon Region (IPAM) is also developing a deforestation model that will cover the region (and the State of Acre). The individual REDD+ projects, financed through grants from the Norwegian Government or contracts with private investors are also carrying out baseline studies. In San Martin, a regional baseline model in support of the Regional Government´s REDD Strategy is being developed under the technical guidance of CarbonDecisions and with broad stakeholder input. Peru's R-PP (Readiness Preparation Proposal) states that "local early initiatives have merged in order to collaborate on the development of a regional reference scenario that may be used as a common, consistent baseline."

## 4.8 Leakage

Leakage describes the "unanticipated decrease or increase in GHG benefits outside of the project's accounting boundary… as a result of the project activities."[26] Reducing the risk of leakage is frequently cited as an important reason for moving to national or state/provincial accounting.[27] Project-level activities intrinsically have the potential to displace emissions through activity-shifting, market or other effects, to areas outside their project boundaries. Increasing the scope of the accounting boundaries is therefore one way to reduce leakage, by ensuring that these effects are captured within the bounds of the broader accounting system.[28]

In national and state/provincial accounting frameworks, allowing a project to claim credits for reductions on-site, without adequately accounting for increased emissions it may have produced off-site, can undermine the outcomes of the entire jurisdiction and create an externality, or liability, for the government and other stakeholders. Accurate accounting should allow for attribution not just of emission reductions achieved at the project scale, but also consequences of leakage beyond project boundaries.

[26] IPCC 2000: 246.

[27] See e.g., Murray et al. 2009.

[28] See Schwarze et al. 2002.

Current approaches to dealing with leakage under project-level accounting standards (e.g., CDM, VCS) include:

- Improving the design of project activities to minimize leakage risks (reducing displacement of farming and grazing activities, generating employment alternatives, maintaining or replacing baseline supplies of good and commodities);
- Accounting for leakage within a monitored "leakage belt" that covers the range of displaced agents and their activities;
- Establishing discount factors for certain kinds of leakage that are intrinsically difficult to measure and monitor (e.g., market leakage tables).

National and state/province governments may deal with leakage in a number of additional ways:[29]

- Require leakage assessment, as per the project-level approaches described above. This option has the advantage of encouraging improved project design to reduce leakage risk and increase sustainability and, in principle, allows for a more accurate attribution and allocation of reductions. On the other hand, it increases complexity and transactions costs for projects.
- Establish a flat discount rate for projects that recognizes uncertainties and minimizes risks of over-crediting projects at the expense of overall national or state/province performance.
- Establish a "leakage tax," with a volume of verified credits or portion of proceeds used to finance leakage mitigation measures (e.g., investments in rural development alternatives, land titling, improved forest governance) at the national or state/province level.
- Ignore leakage from projects. The government could assume responsibility for leakage and may choose to adopt this approach in order to incentivize project investment within certain caps or restrictions on the overall volume of project crediting.

Cross-boundary leakage may occur, but is beyond the control of individual project proponents or governments. Governments may choose to require leakage assessments to include cross-boundary effects, especially if they occur in neighboring states/provinces without comparable accounting frameworks. However, the international climate negotiations have, in principle, excluded accounting and liability for international leakage (e.g., between developed and developing countries).

[29] See also Jenkins et al. 2009, and Schwarze et al. 2002.

# Conclusion

It is essential to create incentives for early REDD+ action while an international legal framework is still being developed and, promisingly, REDD+ implementation is already happening at the national and the subnational level. With the support of the World Bank's Forest Carbon Partnership Facility (FCPF) and/or UN-REDD, governments have started engaging in REDD+ readiness. Non-state actors (local governments, NGOs, businesses) have begun investing in local REDD+ projects and programs. In the context of the Cancun Agreements, such early REDD+ actions correspond to the first phases in the implementation of REDD+ activities. The development of national strategies and capacities as well as the implementation of demonstration activities prepare for participation in a national, full-scale, results-based REDD+ program.

Subnational projects and programs represent the beginnings of entrepreneurial activity, both from the private sector and forward-looking provincial and state governments, for addressing deforestation and forest degradation. As such, it will be important to effectively harness and leverage these initiatives and continue to support similar participation in initiatives that address the challenges presented by deforestation and forest degradation. In order to do this, such site-level activities must be brought under broader-scale accounting frameworks, both to ensure that any carbon credits issued are recognized under emerging compliance markets and that such efforts add-up properly. Knitting bottom-up activities together is critical to maintaining environmental integrity and to incentivizing early action and catalyzing REDD+ initiatives at a much larger scale.

By summarizing the main issues and options that need to be considered in developing crediting frameworks for harmonizing emission reductions at the jurisdictional and project scales, this briefing paper aims to contribute to the considerations of policy makers and project developers that are engaged in on-the-ground decisions about how to address REDD+. In addition to providing the private sector and non-profit organizations investing in REDD+ projects with an understanding of issues that may affect their investments in the future, the present analysis is expected to be useful to state and provincial governments that structure their programs according to local needs. In sum, we hope to have contributed to our goal to strengthen current REDD+ activities by providing needed learning that will inform emerging regulatory frameworks.

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# Annex – Current Status on Nesting Implementation

This annex briefly describes some important initiatives that are dealing with a range of issues associated with nested approaches to REDD+ and presents an overview of their current status. It is divided into the following categories: (i) compliance frameworks; (ii) voluntary initiatives; and (iii) domestic readiness processes.

## 1. Compliance frameworks

Under compliance frameworks we highlight the work being carried out by the Governors' Climate and Forest Task Force (GCF) and by the California Air Resources Board (ARB) within the context of the Assembly Bill 32 (AB 32). It is important to note that, while the GCF is not a compliance regime per se, it seeks to promote standards and criteria that can result in compliance-grade REDD+ credits and is already having an impact on the domestic regulatory framework of its members.

### The Governors' Climate and Forest Task Force (GCF)

The GCF is a coalition of 15 states from Brazil (Acre, Amapa, Amazonas, Mato Grosso, Para), Indonesia (Aceh, Central Kalimantan, East Kalimantan, Papua, West Kalimantan), Mexico (Campeche, Chiapas), the US (California, Illinois), and Nigeria (Cross River State). The GCF has been working since early 2009 on design recommendations for subnational frameworks presented in a discussion draft released in September 2010.[30] The GCF seeks to develop standards and criteria for the generation of compliance-grade REDD credits and accounting frameworks that ensure coordination between state/provincial and federal initiatives.

The report on subnational issues is organized around "Key Issues" and "Design Recommendations." The former presents the major issues to be dealt with (e.g., sub-national accounting, MRV, risk management), while the latter lays out recommended requirements, criteria, tools, and procedural options for the GCF. Key issues discussed in the draft report include:

- REDD+ scope;
- crediting possibilities;
- accounting and MRV; and
- phased approach;

With respect to scope, the report states that the general sentiment among members was for regulators and early-mover states/provinces to begin with Reduced Emissions from Deforestation (RED) and then incorporate Forest Degradation (REDD) as better methodologies are developed, although it also calls for further explanation of the various approaches (i.e., RED vs. REDD vs. REDD+).

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[30] The draft paper does not yet reflect the official position of the GCF. The draft paper can be accessed at http://www.gcftaskforce.org/

The draft also discusses sectoral crediting pathways, i.e., how REDD credits could be issued. Three options were addressed, and the GCF recommended preserving multiple pathways in order to provide flexibility for compliance and offset generation. This means that both sector-based and direct crediting should be permitted, with different states choosing among the different pathways, while having the ability to move from one to another over time. Under sector-based crediting, credits would undergo conversion to the appropriate offset currency and result in the largest amount of reductions. Under direct crediting, credits could either be issued directly to states or provinces for specific program/policy activities, or directly to projects nested within a state/province REDD program.

With respect to accounting and MRV, it is noted that state-/province-level accounting would be necessary for all crediting pathways discussed and would ultimately "synch up" with national-level accounting. The discussion around this issue includes i) reference-level baselines and crediting baselines; ii) state/province RED plans and programs; iii) GHG inventory requirements; iv) registry requirements; and v) project nesting and reconciliation architectures. Recommendations for these aspects include i) criteria for establishing reference-level baselines and two options for establishing crediting baselines; ii) the development of state/province REDD plans/strategies/programs that include the listed elements/criteria; iii) general criteria for state- and province-wide tracking and registry systems that would respond to signals from compliance markets. Recommendations for project nesting and reconciliation architectures have yet to be developed.

MRV could occur at the state/province level or the project level, in the case of a nested approach. Additional requirements for MRV under a nested project pathway are also discussed (including, additionality, and leakage). The GCF recommends general criteria for MRV of state/province performance that retains the flexibility to incorporate future technological developments. The GCF draft report notes that more coherent and possibly less detailed MRV criteria should be developed. Recommendations for MRV of nested project performance includes that any credits issued to nested projects be based on project-level performance as determined by an approved "quantification methodology," along with additional potential requirements for leakage, additionality, and reversals.

The GCF draft report also discussed a phased-approach pathway which would allow and incentivize those states not yet ready to enter into a full sectoral accounting and crediting system the opportunity to gain credits for immediate GHG reductions in initial compliance periods and outlines two potential options. The first presents prerequisites for participation in a phased approach pathway, while the second discusses the establishment of a limited window into the first compliance period for early pilot/demonstration nested pathways and/or state-/province-level programs.

The GCF is currently in the process of reviewing and incorporating additional feedback received on the draft report.

### California's Global Warming Solutions Act of 2006 (AB 32)

As part of AB 32, the California Air Resources Board (ARB) developed a scoping plan which utilizes a combination of regulatory, voluntary, and market-based mechanisms that seek to reduce GHG emissions in California to 1990 levels by 2020 (a 30% reduction from BAU) and achieve an 80% reduction by 2050.

The Proposed Regulation Order, which incorporated comments to an earlier preliminary draft regulation, explicitly mentions that the board should consider a nested approach. If adopted, this would include:

- Offset requirements that formulate accounting rules for all project-level activities;
- A system for reconciling offset project-based GHG reductions in sector-level accounting.

Under the Proposed Regulation Order, REDD would only be eligible under the sector-based approach (and currently it is the only set of activities named under sector-based offset crediting). Under this arrangement, compliance instruments issued from sector-based offset crediting programs must originate from developing countries or from states and provinces within those countries. Emission reductions at the project level could be credited if the program established a clear accounting system. [Two possible crediting pathways have been proposed: in the first, the ARB would directly approve sector-based credits, and in the second, sector-based credits would be issued by an ARB-approved external program.]

The Proposed Regulation Order also lays out general requirements for sector-based crediting programs for the Board to consider. In addition to calling for a nested approach, these include:

- The host jurisdiction establishing a plan for REDD;
- The program including a transparent MRV system, including enforcement capability;
- Requirements to ensure that offset credits are real, additional, quantifiable, permanent, verifiable, and enforceable;
- A transparent system for determining and reporting when the program meets or exceeds its crediting baseline(s); and
- Public participation.

Under these requirements, the "crediting baseline" refers to the "reduction of absolute GHG emissions below the business-as-usual scenario or reference level across a jurisdiction's entire sector" after accounting for the imposition of emission reduction requirements or incentives.

Recently, progress on the approval and implementation of the Proposed Regulation Order has been halted however. In March 2011, a San Francisco Superior Court judge finalized a decision to suspend AB 32 (The Association of Irritated Residents, et al. Vs. California Air Resources Board), on the grounds that CARB violated the California Environmental Quality Act by failing to complete sufficient analysis of the environmental impacts of alternatives to a cap-and-trade system. CARB is currently expected to both appeal the order and to submit additional analysis demonstrating why cap-and-trade is better than the alternatives. Because of this set-back, the expected implementation date of January 1, 2012 is unlikely.

## 2. Voluntary Initiatives

Below, the two main voluntary initiatives dealing with REDD+ nesting issues and the status of their current work on nesting are briefly described.

## Verified Carbon Standard (VCS)

The Verified Carbon Standard (VCS) (formerly the Voluntary Carbon Standard) is a standard and program for the approval of credible voluntary offsets. Currently, five categories of Agriculture, Forestry & other Land-Use project activities are eligible under the VCS, including Reducing Emissions from Deforestation and Forest Degradation (REDD). In December 2010, the VCS launched its VCS Jurisdictional and Nested REDD Initiative, which was made possible through a grant from the Climate and Land Use Alliance. As accounting and crediting scales for REDD move from the project level to state/province and national levels, project-level activities will need to be brought under broader scales, helping to ensure that emission reductions "add-up" properly. The initiative will develop new VCS guidelines that allow for i) the development of jurisdiction-wide baselines; and ii) the integrated accounting and crediting of REDD+ activities (projects, policies, and programs) at the jurisdiction level. Because the initiative is still in its infancy, the exact nature of the final guidelines (i.e., new VCS rules, requirements and/or Good-Practice-Guidance (GPG)) is still to be determined.

In developing the initiative, the Verified Carbon Standard Association (VCSA), which oversees the VCS, is collaborating with a broad range of stakeholders and experts. A secretariat, composed of the VCSA, the chair of the VCS AFOLU Steering Committee, and Climate Focus, is responsible for implementing the project, including day-to-day coordination. Conceptual development and strategic input are being provided by a 22-member Advisory Committee, composed of developing-country government representatives from the Americas, Africa, and Asia, balanced with civil society and private sector representatives, sharing a broad range of skill-sets (e.g., business, law, government, technical, etc.). Technical experts and a peer review team will be retained to provide expert advice on specific issues identified by the Advisory Committee. The technical experts will draft relevant background papers and both technical experts and the peer review team will peer-review the final VCS text. Following ISEAL Alliance Codes of Good Practice, a public consultation on the final draft of the new VCS text will also be held.

To date, the scope of initial discussions has focused on potential crediting pathways, including: i) project-level crediting using project baselines (the current scope of the VCS); ii) project-level crediting using jurisdictional baselines; iii) project-level crediting using jurisdictional baselines and accounting; iv) project and jurisdictional crediting using jurisdictional baselines and accounting; and v) subnational jurisdictional crediting schemes as part of a national scheme. Variations on several of these scales have also been proposed. Additional discussions have focused on technical issues, such as the scope of activities included in accounting, baselines, additionality, MRV, leakage, underperformance and reversals, etc. A scoping paper is currently being drafted that will highlight issues for the technical experts to address and outline the current thinking of the Secretariat and Advisory Committee on relevant issues. The Initiative will take place over a 12-month period, with final VCS guidance and requirements expected in the first quarter of 2012.

## Climate Action Reserve (CAR)

The Climate Action Reserve is an offset program working to ensure integrity, transparency, and financial value in the US carbon market. It does this by establishing regulatory-quality standards for the development, quantification, and verification of greenhouse gas (GHG) emission reduction projects in North America. It issues carbon offset credits known as Climate Reserve Tonnes (CRT) generated from such projects and tracks the transaction of credits over time in a transparent, publicly-accessible system.

The CAR established the California Climate Action Registry (CCAR) as one of its programs. The CCAR is a voluntary initiative formed in 2001 and currently has over 300 members ranging from corporations, to cities, and non-governmental organizations.

In August 2010, CAR released the Forest Project Protocol which seeks to provide complete, consistent, accurate, and conservative standards to account for forest carbon storage. In September 2011, the equivalent Mexico Forest Protocol is expected to be released. In December 2010, the CAR held a side event in Cancun to present its independent initiative to develop standards for nested project accounting for possible REDD programs in Mexico – most likely implemented at the state level. Reserve staff will work with a Mexico forest work group to refine the Forest Project Protocol for use in Mexico by developing guidance and standards for nested projects within a REDD framework, environmental integrity, land tenure issues, and permanence of forest carbon sequestration specific to projects in Mexico. The Reserve's effort in Mexico is seen as collaborative and informative to the work conducted by the GCF.

The "Jurisdiction Subcommittee" of the Mexico forest work group set the following goals for itself in November 2010:[31] building justification for the nested project approach in Mexico, and demonstrating carbon accounting mechanisms of nested projects to jurisdictions. They will do this via defining options for: i) methods for calculating sharing of benefits between projects and jurisdictions based on merits of accounting, ii) methods for accounting for leakage at jurisdiction level and how the jurisdiction level estimated can inform project-level accounting; iii) accounting and enforcement mechanisms for ensuring permanence and sharing of risks and liabilities between projects and jurisdictions and iv) measurement, monitoring, and verification that can be deployed at varying spatial scales that allow for truing up between project- and jurisdiction-level quantification.

# 3. REDD+ Strategy Development in Key Countries

Below we provide an overview of how REDD+ nesting issues and subnational activities are being dealt with in the REDD+ readiness process of the following countries: Ecuador, Ethiopia, Colombia, Ghana, Indonesia, Mexico and Peru.[32]

## Ecuador

Ecuador is not part of the FCPF, and as such, has not submitted an R-PIN or R-PP. The country did, however, recently join the UN-REDD Programme, and the validation meeting occurred in February 2011. In March 2011, they presented their National Programme Document at the UN-REDD Programme Sixth Policy Board Meeting, which proposes that by 2013, Ecuador will have completed the readiness stage for the implementation of the REDD+ mechanism at the national level.

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[31] http://www.climateactionreserve.org/wp-content/uploads/2011/01/Goals_of_Jurisdiction_Subcommittee_111110.pdf.

[32] This analysis was conducted through a review of the main the issues related nesting and subnational activities as they appear to be dealt with under the countries' Readiness Preparation Proposals (R-PP) (where available). This information is complemented with information provided during the workshop held in Miami on 16-17 March, 2011.

While Ecuador is proposing a nested framework, little detail below the national-level is included in the National Programme document. The National Joint Program (NJP), which supports the country in the preparation phase of REDD+ implementation, sets out six expected outcomes: i) the design and implementation of a National Forest Monitoring System (with a single system of national MRV); ii) national implementation of a REDD+ consultation process that involves civil society, indigenous communities, peoples and nationalities, Afro-Ecuadorian and Montubio peoples and communes; iii) development of policies and instruments for the implementation of REDD+; iv) development of the operational framework for the implementation of REDD+; v) ensuring multiple environmental and social benefits; and vi) design and implementation of a benefit-sharing system.

In addition, Ecuador is promoting activities that combine government-level action with private projects at the subnational level. Under the *Socio Bosque Program*, an incentive-based policy that provides an economic incentive to private land owners and communities who protect forested land, Ecuador plans to conserve 4 million hectares of forest over the next seven years. Current challenges identified by Ecuador in promoting subnational action include designing and establishing a unified MRV system; harmonizing national and subnational methodologies for baseline definition and carbon estimates; and defining the role of the private sector and local governments in REDD+ project development.[33]

## Ethiopia

The latest version of Ethiopia's R-PP was submitted on March 7th, 2011. The FCPF Participants Committee subsequently assessed it on March 24th, and funding has already started to be disbursed.

While Ethiopia does not explicitly mention a nesting approach to REDD+, some issues with a direct bearing on subnational activities are mentioned in the country's R-PP. For instance, Ethiopia is planning to follow a piloting approach to strategy development by supporting existing or developing REDD+ pilot activities that address the drivers of deforestation and degradation. The country also aims at developing a learning strategy to harness lessons learnt from these pilots. There are already a number of REDD+ pilot projects in the country that are found at various preparatory stages. In particular, in the Oromia State (which accounts for more than 70% of the country's forest cover), advanced REDD+ pilot projects will be used as "building-block" to develop a state-level program.[34]

In addition, Ethiopia's R-PP states that a decision will be made on whether REDD+ baselines/reference levels could be established either at the national accounting level and/or the subnational (including projects) accounting level. The decision will consider implications on carbon leakage. Also, when discussing a future MRV

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[33] See "Ecuador: Towards REDD+ National Implementation: Technical & Policy Issues on Allocating Incentives and Credits", presentation delivered at International Workshop on Nested Approaches to REDD+, 16 March 2011. Available from: http://www.forest-trends.org/~foresttr/documents/files/doc_2704.pdf.

[34] See "Subnational REDD initiatives as building blocks for National REDD Programs", presentation delivered at International Workshop on Nested Approaches to REDD+, 16 March 2011. Available from: http://www.forest-trends.org/~foresttr/documents/files/doc_2704.pdf.

system the R-PP again mentions that a forest carbon MRV program may operate at the national and/or subnational level.

With respect to institutional arrangements, a specific organizational structure at different levels has been established: the Federal-Level REDD Steering Committee (RSC), the Federal-Level REDD Working Group (RTWG), the Topic Specific Focus Groups (TSFG), the regional-level RSC and RTWG and the REDD Secretariat. The REDD readiness process is a cross-ministerial process currently chaired by the Environmental Protection Authority (EPA).

## Colombia

Colombia's last formal submission to the FCPF was an R-PIN, selected in October of 2008. Currently, extensive consultations with key stakeholders in REDD+ priority areas are close to consolidation, and an R-PP submission is expected in June 2011.

Colombia clearly favors a subnational approach to REDD+. The country's stated goal is "is to achieve a subnational REDD approach where the Government will support the communities or organizations that want to implement REDD activities in their territories." Transactions would occur directly between the buyer and projects proponents, and no fee or levy on credits are envisaged.

The R-PIN calls for the further enhancement of the National Forestry Development Plan (NFDP) of 1989, and further stratification of forest ecosystems at the municipal, regional, and national scales. Specific activities mentioned include i) the development of pilot projects with communities for natural forest management and regeneration and ii) implementation of the National Strategies for Payment for Environmental Services. For the purposes of REDD+ readiness, the country would seek capacity for project design and monitoring of carbon in forests at a national and regional level. At a national level, this would be done through the Hydrology, Meteorology and Environmental Studies Institute (IDEAM), and regionally through the Regional Autonomous Corporations (CARs – regional environmental authorities, which are responsible for natural resource management and regional monitoring).

The R-PIN calls for each project in the country to have specific "spatial, biological, and socioeconomic information" to enable the country to develop an analysis on the local and regional context. Each community or landowner should establish the causes of deforestation in their area of influence and develop sustainable forest management plans (or alternative productive projects) to address them. The central and/or local government may support the technical aspects of these proposals (e.g., remote imagery analysis, reference scenario setting, MRV, etc). It also calls for the creation of a "national reference framework for deforestation" and a national REDD strategy that allows for the creation of a MRV system. It is unclear whether MRV will only occur at the national level, or also at the project level.

## Ghana

The first draft of Ghana's R-PP was submitted to the FCPF in December, 2009. After assessment by the FCPF, a revised version of the R-PP was re-submitted in December 2010. Implementation of the R-PP is anticipated to continue through until early 2012/2013. In addition to its participation in the FCPF Ghana is also a pilot country of the Forest Investment Program (FIP).

Many elements relevant to nesting and subnational activities can be distilled from Ghana's R-PP. Ghana's R-PP stresses the importance of strengthening local decentralized management of natural resources through the support of, inter alia, training in forest and resource management for district-level administrators as well as pilot projects in decentralized environmental management and resource planning through national agencies.

The R-PP states that policies and institutional frameworks should be tested through targeted REDD+ demonstration and pilot activities. Private entities, communities, and other actors may be invited to submit proposals for demonstration projects to the government. Demonstration actions will cover a wide range of project and program designs to test targeted REDD+ policies. Learning from project approaches that fit into the voluntary market can also be an important part of testing how policy and legal changes influence the ability to create carbon reduction credits.

The Government of Ghana is also working with stakeholders in the country to formulate rules and procedures applicable to projects that may yield carbon credits, including (potentially) government endorsement of activities, carbon rights allocation, and project participation requirements.[35] In that respect, the country's R-PP calls for national expert consultation on carbon rights to examine the potential allocation of carbon rights under a future REDD+ mechanism and to define procedures for the transfer of REDD+ payment for forest managers. Under a future REDD+ Implementation and Management System, a specific institution will need to authorize project proponents to own and sell carbon credits. Entities that approve forest uses at the local level could play a role in the permitting process for REDD+-related activities.

Currently, the National Climate Change Committee (NCCC), a multi-stakeholder committee under the auspices of the Ministry of Environment, Science, and Technology, is developing national strategies on Climate Change Mitigation and Adaptation for forestry, agriculture, and energy as part of the national climate change policy development. At the ministerial level, a national REDD+ steering committee, a multi-stakeholder body, has been established to advise the Ministry of Land and Natural Resources on REDD+ issues.

To ensure transparency, accountability, and equity in the implementation of mechanisms for REDD+, there are plans to develop an information clearinghouse with the ability to track, publicly share, and hold accountable the various actors involved in REDD+ implementation. A central management information depository and a central carbon accounting registry will be designed and established for tracking carbon emissions and credit monitoring.

With respect to technical aspects, Ghana considers developing different reference scenarios for the following zones: the high forest zone, the transitional zone, and the savannah zone. It is still, however, possible that one reference scenario is established for all three forest zones, especially if monitoring costs prove to be significantly lower with one reference scenario. A national working group or department within an existing national institution will be set up with staff dedicated to the design and implementation of the MRV system. This body will develop a monitoring framework for Ghana, and the monitoring system will be tested in several pilot

[35] See "Challenges and proposals for government approval of REDD+ projects – A conceptual view in the context of Ghana", presentation delivered at International Workshop on Nested Approaches to REDD+, 16 March 2011. Available from: http://www.forest-trends.org/~foresttr/documents/files/doc_2704.pdf.

regions. The monitoring system will ultimately allow for national-scale, reportable at regional-scales, annual to bi-annual reporting of GHG reductions achieved.

## Indonesia

Indonesia's R-PP was prepared by the Ministry of Forestry and submitted in May 2009. It was assessed by the FCPF Participants Committee at PC4 in June 2009, and a Synthesis Review was issued by the FCPF Technical Advisory Panel (TAP).

Indonesia's R-PP refers explicitly to subnational implementation of a national approach, and the country is currently considering financial transfer mechanisms operating at different scales. Two options are considered: In option 1, transactions are carried out with the central government. In option 2, transactions would be carried out with subnational governments or directly with project developers. Under option 2, redistribution of funds could take place in three ways:

- Following the government administration hierarchy (e.g., National > Provincial > District > Village);
- Based on management of forest function (conservation, protection, production, or conversion forest) (e.g., national forest authority > local forest management units);
- Domestic, project-based with the nation as re-seller on the international market (e.g., national authority > Project entities > local actors)

In deciding between the two options and sub-options, existing revenue-sharing legal frameworks will likely inform ultimate decisions, and the advantages and disadvantages of these combinations are currently being discussed. The form payments will take is also being discussed and a Climate Change Trust Fund is being established, although the details on its management and distribution still need to be developed.

A significant number of demonstration and pilot projects have already been initiated by private and public entities in Indonesia. As result, Indonesia's R-PP calls for a comprehensive system of approval criteria and MRV to be developed, in addition to a national registry (as per P.30/Menhut-II/2009).

Indonesia's REDD+ strategy will cover multiple scales, including the national, provincial, and district. At the national level, drivers of deforestation will be identified in addition to the establishment of a national reference level and MRV system. At the provincial and district levels, reference levels and MRV systems will also be developed, with demonstration activities planned at each level. Activities and payments will be tracked in a national carbon registry, although it still needs to be decided how this would be linked to sub-national actions and definitions of who would be entitled to sell emission reductions or receive payments, including ownership and transfer of carbon rights.

With regard to technical issues, the sections of the R-PP dealing with reference scenarios and MRV both make specific reference to subnational implementation. Under the regulation on REDD (30/Menhut-2/2009), reference levels need to be established at the national and subnational (provincial and district) levels that are consistent with each other. The establishment of a national reference level will serve as guidance for the establishment of provincial and district reference level. Indonesia will consider a historical emissions approach, a modelling approach, and a hybrid approach in choosing how to develop RELs.

For MRV, the National Carbon Accounting System (NCAS) was established and provides tools to monitor all GHG emissions from land-use/forest cover changes. It was designed to accommodate monitoring at both the national and sub-national levels, using both remotely sensed and ground-based inventory approaches.

## Mexico

Mexico's most recent R-PP was submitted in February 2010 and was assessed by the participants committee in March 2010. Mexico was asked to revise and resubmit the R-PP, and these revisions are currently in progress.

Mexico's R-PP calls for the development of national carbon accounting system that allows for both national and project-type REDD activities. It also calls for the development of a series of pilot demonstration projects in different socio-ecological conditions and the creation of a national registry of project activities. It does not however address crediting pathways or whether such projects will be credited directly.

The objective of the REDD strategy is described as a system that incorporates national accounting with local implementation. The R-PP calls for Mexico to develop the necessary institutional, legal, and political frameworks necessary to achieve this. The REDD strategy will be developed at three scales, i) national; ii) state; and iii) project level (i.e., community, ejido, or private land owner). At the national-level, the R-PP calls for the establishment of i) a national accounting system and bureau; ii) a REDD payment distribution system similar to the Pro-Arbol model (an umbrella for 45 support programs administered by CONAFOR for conservation and restoration of vegetation in arid and semi-arid regions of Mexico); iii) national reference emissions/removals scenario; iv) a national MRV system; and v) a market at both community and national levels for forest products and ecosystem services. At the state-level, regional RES and MRV will also be established, in addition to working groups and pilot projects. At the project level, landowner-level land-use planning instruments will be developed.

Despite mentioning a "nested national, state, and local monitoring system with coordinated national, state, and locally-based carbon inventories," it is unclear what this will look like in practice. The R-PP calls for the development of a projected national reference emission scenario based on spatial analysis of historic land-use trends and impact analysis of land-use-related government programs. A set of criteria and indicators will be developed in close consultation with the stakeholder groups, and a deforestation risk map will be generated, based on an analysis of underlying and proximate drivers. A multi-scaled monitoring system will also be established, based on remote sensing and ground-based permanent and temporary monitoring plots. The system will follow the methodologies proposed in the GOFC-GOLD Sourcebook of methods and procedures for monitoring and reporting GHG emissions and removals caused by deforestation, gains, and losses of carbon stocks in forests, remaining forests, and forestation (GOFC-GOLD, 2009). This will include i) assessing changes in land use over time (deforestation and forest degradation); ii) estimation of above-ground biomass stocks; and iii) estimation of $CO_2$ emissions from deforestation and forest degradation.

## Peru

The current version of Peru's R-PP, prepared by the Ministry of the Environment with input from the Ministry of Agriculture, and the private and public sectors, was submitted on March 7, 2011. The most recent assessment by the Participants Committee was scheduled to occur on March 24, 2011.

The R-PP explicitly calls for a three-tiered phased and nested approach. Initially, emission reductions would only be reported for local-level initiatives, of which there are about 20 currently being carried out by private firms, international NGOs, and the Peruvian government, utilizing methodologies approved under voluntary carbon market standards, such as the VCS. As the system evolves, monitoring and reporting would encompass local- and regional-level initiatives and would finally include the national-level. In this way, subnational initiatives may be in phase 3 (performance-based incentives), while the national level efforts remain in either phase 1 (readiness) or phase 2 (implementation of policies and programs). Subnational (local and regional) initiatives, including projects and programs, would be proposed and registered at the national level and undergo a process of review and approval. Once subnational initiatives are registered in the REDD+ National Registry, project developers would have the right to market the verified emission reductions that have been generated in their respective areas. Also according to the R-PP, in the event that the UNFCCC process recognizes national emission reductions only, "the State would provide priority access to international incentives for those initiatives that have been registered." In San Martin and Madre de Dios, "Regional REDD Roundtables" have been authorized as consultative and technical agencies, and the model is being considered for replication in other regions in Peru.

The stance adopted by Peru has been referred to as a "level's approach to REDD+", i.e., building up from the local level to the national level. This approach allows Peru to appropriately reflect its national circumstances, which is characterized by a process of decentralization and devolution of public powers from the national to regional governments.[36]

In order to support REDD+, the national institutional arrangements for REDD+ are being re-organized. This includes a (proposed) new Forestry and Wildlife Law and the creation of the National Forest Conservation Program for the Mitigation of Climate Change. In addition, a forestry and REDD+ coordinating entity will be created to ensure overall coordination among different government bodies.

With respect to technical issues, the R-PP states that "reference scenarios will first be established in regions with greater technical capacity and data availability and will then be added until the national reference scenario is completed." Reference scenarios will initially only consider deforestation, while other components (especially degradation) will be gradually included. Baselines will be "spatially and temporally specific forecasts . . . and will be conducted using strict, internationally validated methodologies." Forecasts will be reviewed at least every ten years and will also serve as reference scenarios for early initiatives and future REDD+ programs in the regions, so as to "ensure consistency between the local and regional levels." Peru estimates that it will take at least five years for it to define a national reference scenario, assuming that the relevant technical, analytical, and financial capacities are developed in the regions.

In addition, Peru is proposing several initiatives that will contribute to MRV, including the establishment of the National Data Generation System for the National Greenhouse Gas Inventory. Another initiative, titled "Strengthening of Technical Capacities for the Implementation of a REDD Program in Peru" seeks to i) establish an inter-institutional coordination and cooperation mechanism; ii) develop standardized methodological

[36] See Ministerio del Ambiente, "Designing and implementing REDD+ in Peru – Peru in the forestry context", presentation delivered at International Workshop on Nested Approaches to REDD+, 16 March 2011. Available from: http://www.forest-trends.org/~foresttr/documents/files/doc_2704.pdf.

frameworks; and iii) establish a national MRV system. The R-PP stresses that a major challenge will be "to ensure that the MRV generated at the national level is adequate for the different regional strategies," since the actions that each region implements for REDD+ will be different from one another and a strategy with unique elements may require its own MRV.

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