WWF

INT

WWF GUIDE TO BUILDING REDD+ STRATEGIES:

A toolkit for REDD+ practitioners around the globe

October 2013

WWF FOREST AND CLIMATE PROGRAMME

CONTENTS

INTRODUCTION

BUILDING BLOCKS OF A REDD+ STRATEGY

THESE CHAPTERS AVAILABLE FOR DOWNLOAD AT bitly.com/REDDguide

ADDITIONAL RESOURCES

REDD+ GOVERNANCE

TRACKING REDD+

ACHIEVING REDD+

FOREWORD

In the last five years, the UN envisioned mechanism to reward nations for reducing carbon emissions from deforestation and forest degradation (REDD+) has transformed tropical forest conservation from a niche effort to a critical tool to fight climate change, conserve natural resources and improve the livelihoods of the rural poor. REDD+ is helping to transform these international efforts in three important ways.

Firstly, REDD+ has raised global awareness of the importance of tropical forests in addressing climate change. The Intergovernmental Panel on Climate Change (IPCC) estimated that carbon emissions from deforestation and forest degradation of tropical forests account for 17.4 per cent of annual, global carbon emissions—more than all the automobiles, trucks, trains, ships and airplanes in the world. As emissions from deforestation and degradation of tropical forests decrease, while emissions from other sources are growing, this number will probably be somewhat lower in the future, but this does not in any way change the importance of tropical forests in the fight against climate change. If we are to maintain global warming to just 2°C above pre-industrial levels, the global community's target to fight climate change, it is clear that we must find a solution to tropical forest loss.

Secondly, REDD+ has highlighted the key role of tropical forests in underpinning the livelihoods of local communities and indigenous peoples, who depend on tropical forests for their food, medicine, fibres and shelter. Finally, REDD+ has heightened our understanding of the vital role that tropical forests play in providing ecosystem services—from local to global scales—that maintain biodiversity, support food production and regulate our weather systems.

Yet, REDD+ is still only in its infancy. If REDD+ is to succeed, local and national government leaders in developing tropical forest countries need to develop effective national, and in some cases subnational, REDD+ strategies and the technical skills and expertise to implement these.

This enormous effort that is now asked of developing tropical forest countries has mobilized the financial and technical support of developed county governments, as well as non-governmental organizations, the private sector and academia. To date, the Government of Norway has committed approximately three billion US dollars in tropical forest finance to support REDD+ related activities. It is our aim that through this support, developing tropical countries including the Democratic Republic of Congo, Brazil, Indonesia, Peru and Guyana will be able to reduce their emissions from deforestation and forest degradation—and through this,

conserve their forests and improve the livelihoods of their rural communities.

For these reasons, the Government of Norway is pleased to support WWF's development of this publication, *WWF Guide to Building REDD+ Strategies: A toolkit for REDD+ practitioners around the globe*. The guide arrives at a critical time when many tropical forest countries are in the process of, or considering, developing their national or subnational REDD+ strategies.

The Government of Norway looks forward to continuing to support initiatives such as this and to seeing REDD+ realize real benefits for people and nature.

Bård Vegar Solhjell, 2012–2013 Minister of the Environment, Government of Norway

ACKNOWLEDGEMENTS

This publication is the collective output of dozens of REDD+ practitioners from around the globe, including both WWF experts and external partners.

It is produced by WWF's global Forest and Climate Programme, which works internationally to support REDD+ global policy and finance as well as to build local REDD+ capacities in such key tropical forest landscapes as the Democratic Republic of Congo, Indonesia, Peru, Cameroon, Guyana and Colombia. The guidance and best practices presented in this publication are based on the hands-on experiences of WWF and its partners.

This is a technical document, the sole purpose of which is to contribute to the ongoing discussion and capacity building among REDD+ practitioners. Hence, it does not purport to represent the official positions of WWF or its donors.

Please use the following reference for citation:

WWF, 2013: WWF Guide to Building REDD+ Strategies: A toolkit for REDD+ practitioners around the globe. WWF Forest and Climate Programme, Washington, DC, USA

ACRONYMS

3E: Effectiveness, efficiency and equity

ACR: American Carbon Registry

ADB: Asian Development Bank

AfDB: African Development Bank

AFOLU: Agriculture, forestry and other land use

BAU: Business-as-usual

BUR: Biennial update reports

CAN: Climate Action Network

CBD: United Nation's Convention on Biological Diversity

CCBA: Climate, Community and Biodiversity Alliance

CCBS: Climate, Community and Biodiversity Standards

CDC: Committees for development and conservation

CDM: Clean Development Mechanism

CFUG: Community forest user groups

CIF: Climate Investment Funds

COP: Conference of the Parties

CSO: Civil society organization

CTF: Conservation Trust Fund

DD: Deforestation and forest degradation

DIH: Dutch Sustainable Trade Initiative

DRC: Democratic Republic of Congo

ENAREDD+: Estrategia Nacional para REDD+, Mexico (REDD+ National Strategy)

ERPA: Emissions Reduction Payment Agreement

ER-PIN: Emissions Reduction—Programme Idea Note

ESMF: Environmental and Social Management Framework

FAO: Food and Agriculture Organization

FCPF: Forest Carbon Partnership Facility

FCTF: Forest Carbon Trust Fund

FIELD: Foundation for International Environmental Law and Development

FIP: Forest Investment Program

FLEGT: Forest Law Enforcement, Governance and Trade

FPIC: Free, prior and informed consent

FSC: Forest Stewardship Council

GCF: Green Climate Fund

GEF: Global Environment Facility

GFC: Guyana Forestry Commission

GHG: Greenhouse gas

GIS: Geographic Information Systems

GIZ: Gesellschaft für Internationale Zusammenarbeit

GOFC: Global Observation of Forest and Land Cover Dynamics

GPG: Good Practice Guidelines

GRIF: Guyana REDD+ Investment Fund

HCVF: High conservation value forest

HFLD: High forest, low deforestation

ICA International Consultation and Analysis

IDB: Inter-American Development Bank

ILO: International Labour Organization

IMAFLORA: Brazil's Institute for Agriculture and Forest Certification and Management

IPCC: Intergovernmental Panel on Climate Change

IPLCs: Indigenous peoples and local communities

IUCN: International Union for the Conservation of Nature

KfW: Kreditanstalt für Wiederaufbau, German government-owned development bank

LDCs: Least developed countries

LEDS: Low Emission Development Strategies

LiDAR: Light Detection and Ranging

LUCC: Land-Use and Land-Cover Change

LULUCF: Land use, land-use change and forestry

MDG: Millennium Development Goals

MEA: Multilateral environmental agreement

MFI: Multilateral financial institutions

MIGA: Multilateral Investment Guarantee Agency

MMRV: Monitoring, measuring, reporting and verification

MRV: Monitoring, reporting and verification

NAFIMS: Nepal's National Forest Management Information System

NAMA: Nationally Appropriate Mitigation Action

NFI: National Forest Inventory

NGO: Non-governmental organization

NGP: New Generation Plantations

NICFI: Norway's International Climate and Forest Initiative

Norad: Norwegian Agency for Development Cooperation

ODI: Overseas Development Institute

OP: Operational policies

OPIC: Overseas Private Investment Corporation

PES: Payments for Environmental Services, Payments for Ecosystem Services

PRI: Political risk insurance

RECOFTC: Center for People and Forests

REDD+: Reducing emissions from deforestation and forest degradation and enhancing forest carbon stocks

REL: Reference emission level

RL: Reference level

RSPO: Roundtable on Sustainable Palm Oil

SBSTA: Subsidiary Body for Scientific and Technical Advice

SEPC: Social and Environmental Principles and Criteria

SES: Social and Environmental Standards

SESA: Strategic Environmental and Social Assessment

SIS: Safeguard Information System

SISA: System of Incentives for Environmental Services

UNDRIP: United Nations Declaration on the Rights of Indigenous People

UNEP: United Nations Environment Programme

UNEP WCMC: United Nations Environment Programme World Conservation Monitoring Centre

UNFCCC: United Nations Framework Convention on Climate Change

UNFF: United Nations Forest Framework

UN-REDD: United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries

USAID: United States Agency for International Development

USGS: United States Geological Survey

VAT: Value added tax

VCS: Voluntary Carbon Standard

VER: Verified Emission Reduction, Voluntary Emissions Reduction

WB: World Bank

WRI: World Resources Institute

WWF: Worldwide Fund for Nature (formerly known as World Wildlife Fund)

ZNDD: Zero net deforestation and forest degradation

ZNEDD: Zero net emissions from deforestation and forest degradation

WWF GUIDE TO BUILDING REDD+ STRATEGIES

Introduction

HOW TO USE THIS GUIDE

This guide is designed to provide REDD+ practitioners and their local partners with the information necessary to develop national and subnational REDD+ strategies. It draws on the experiences of WWF's international REDD+ project teams, the latest literature on REDD+ practices and emerging REDD+ best practices around the world.

It is intended for practitioners working across various elements of REDD+ as well as those focused on a particular area of REDD+, as practitioners need to have a holistic understanding of a REDD+ national or subnational strategy in order to effectively work in any part of it.

It is anticipated that through interaction and inputs from initial users of the guide, the information it contains will be developed further and expanded to support a broader range of REDD+ practitioners, including government officials, civil society organizations, indigenous peoples and local communities, international implementing agencies and the private sector.

Guide format and content

The guide is presented in a dynamic format that gives users:

- **A "how-to" intermediate-level approach to REDD+ implementation:** Chapters are concise with an emphasis on practical steps rather than theoretical discussion. The information they contain is intended as a "roadmap" rather than an "atlas" of REDD+. Those users wanting to dig deeper into a subject can do so through the Further Resources section of each chapter.

- **A comprehensive vision of REDD+:** This guide offers REDD+ practitioners a holistic view of REDD+, presenting the key elements of REDD+ and making the link between them. It also encourages users to consider each element of REDD+ in order to develop a successful national or subnational REDD+ strategy.

- **A user-friendly format:** Each chapter of the guide is produced as a standalone resource, enabling practitioners to use the guide as a comprehensive tool or as a series of tools. This, together with the publication's size and binder format, gives users the flexibility to carry and use these tools in the field—both in part and as a whole—as their work requires. In addition, the guide is available as an e-publication for easy online access, a CD for cost-effective sharing and a hardcopy printed format.

- **Opportunities for collaborative and continued knowledge sharing:** Users are invited to collaborate in the periodic update of this guide by sharing experiences and case studies, offering updates to existing chapters and contributing to new chapters.

This initial version of the guide is composed of three sections. Section I, *Introduction*, provides an overview of this guide, introduces REDD+, and discusses why and when a REDD+ national or subnational strategy is needed and how this guide could help prepare one. Section II, *Building Blocks of a REDD+ Strategy*, is the "how-to" part of this guide and features nine chapters on topics key to REDD+. Section III includes both a list of additional WWF REDD+ resources and a glossary of REDD+ terms.

CONTENT OF SECTION II, BUILDING BLOCKS OF A REDD+ STRATEGY

THEMES	CHAPTERS
REDD+ governance	» Setting Goals, Targets and Principles » Institutional Arrangements » Legal and Regulatory Frameworks » Social and Environmental Safeguards » Stakeholder Engagement
Tracking REDD+	» Monitoring, Measurement, Reporting and Verification » Reference Levels » REDD+ Registries
Achieving REDD+	» Intervention Strategies to Address Drivers of Deforestation and Forest Degradation » Accessing Finance » Benefit-Sharing Mechanisms

To facilitate an easy flow and comparisons across chapters, the information presented in each is structured similarly to include:

- **Key messages:** Main points of the chapter highlighted in a bulleted list.

- **Introduction:** An overview of the issues presented in the chapter.

- **International policy context:** Outline of what has been agreed upon under the UNFCCC and other relevant international processes as relevant to each chapter.

- **National and subnational options:** The various ways in which the chapter's topic can be addressed in a national or subnational REDD+ strategy.

- **WWF viewpoint:** WWF's perspective and positions on the chapter's topic.

- **Further resources:** Additional information on each chapter's topic.

- **Bibliography:** A list of publications referenced in the chapter.

Furthermore, each Section II chapter includes one or more snapshot case study. These case studies inform users of real-life experiences related to each chapter topic in ways that will provide additional knowledge necessary to design and implement components of a national or subnational REDD+ strategy.

Each case study provides the following information on a specific REDD+ practice:

- Context
- Expected changes
- Achievements
- Challenges
- Lessons learned

In addition, throughout this guide, we have included links to video archives of relevant sessions from WWF's REDD+ learning webinar series.

Content development and knowledge sharing

This guidebook is a collaborative effort with contributions—to date—from more than 18 representatives from within the WWF network as well as external partners. The goal is to continually improve this publication through inputs from REDD+ practitioners around the globe and to facilitate the sharing of best practices in building REDD+ national and subnational strategies to help progress REDD+ for the benefit of people and nature. To facilitate this process, we:

- Created this guide as both an adaptable binder publication that allows for the addition of new content and for users to add their own content and notes, and as an e-publication, which allows users to download individual chapters and work with them in their own context.

- Plan to use this guide as a learning manual for WWF REDD+ practitioners and, through this process, gather feedback and new content to develop it further.

- Encourage users to contribute to the guide, including the submission of ideas for new topics and case studies that highlight key lessons in implementing REDD+ strategies.

Please send your content suggestions to *forestclimate@wwfus.org*.
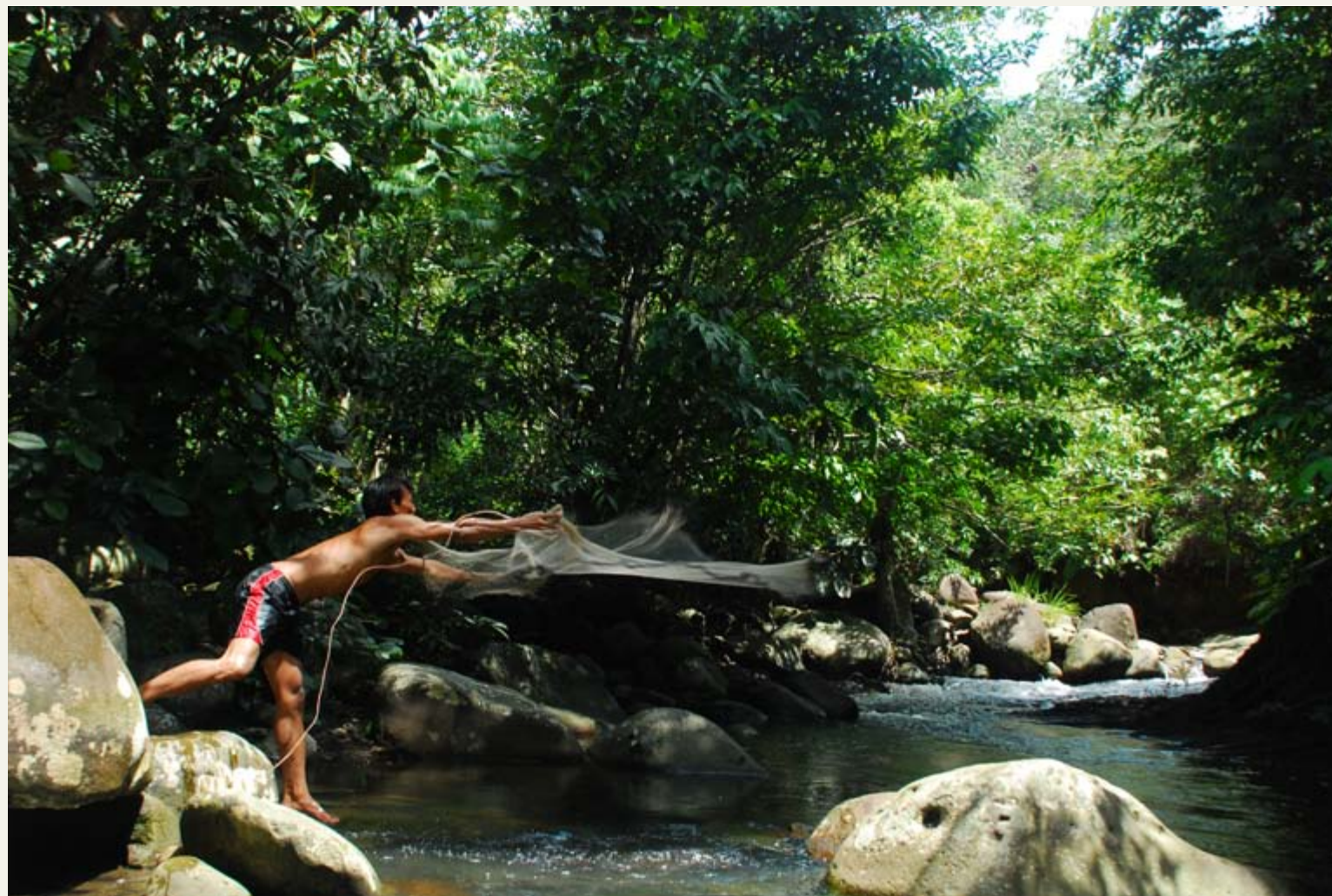
© KUTAI BARAT / WWF

WWF GUIDE TO BUILDING REDD+ STRATEGIES

Introduction

WHY AND WHEN IS A REDD+ STRATEGY NEEDED?

WHAT IS REDD+?

Tropical forests cover around 15 per cent of the world's land surface (FAO, 2006) and store about 25 per cent of the carbon in the terrestrial biosphere, thus playing a critical role in global climate regulation (Bonan, 2008). Tropical forests are also home to nearly 90 per cent of the world's terrestrial biodiversity and directly support the livelihoods of 90 per cent of the 1.2 billion people living in extreme poverty (World Bank, 2004).

Despite the multiple benefits that forests provide to humankind and nature, tropical forests are being degraded at an alarming rate. Every year, roughly 13 million hectares are converted to other land uses (FAO, 2006) to feed the growing world's demand for food, fuel and fiber. Deforestation and forest degradation now account for up to a one hundred-fold increase in global species loss (CBD, 2008) and up to 20% of total greenhouse gas emissions—more than the world's transport industry.

Preserving forests, therefore, plays a critical role in our efforts to combat climate change, halt biodiversity loss and support and maintain the livelihoods of local and indigenous communities. If we are to stay within a 2°C target for global warming, meet the 2020 Aichi Biodiversity Targets[1] and achieve the Millennium Development Goals,[2] it is essential that we slow, halt and reverse tropical forest loss. This, in the parlance of the United Nations Framework Convention on Climate Change (UNFCCC), is what is known as achieving REDD+: reduced emissions from deforestation and forest degradation.

REDD+ STATE OF PLAY

The issue of reducing emissions from deforestation and forest degradation in tropical forests first gained prominence in Bali in 2007 under the 13th Conference of the Parties (COP) to the UNFCCC. At the time, forest-related emissions were excluded from the Kyoto Protocol and forest conservation efforts were failing due to a lack of political will and international funding. In a ground-breaking decision spearheaded by Papua New Guinea and Costa Rica, REDD (which then stood for Reducing Emissions from Deforestation in Developing Countries) was officially gaveled into the climate change negotiations.[3] REDD was to be a new way of thinking about forest conservation that tied efforts to conserve tropical forests with the global fight against climate change. It was hoped that this would leverage unprecedented political attention to tropical forest loss along with new levels of funding for forest conservation efforts.

It was not until discussions at COP 15 (Copenhagen, 2009), though, that the term REDD Plus (or REDD+) first emerged.[4] This subtle yet important shift recognized the growing awareness and pressure from developing countries that forest loss could not adequately be addressed unless it included a set of activities broader than just deforestation. This shift was not formally codified until COP 16 (Cancun, 2010) when it was agreed that any developing country wishing to undertake REDD+ could engage in any of the following five activities:

- Reducing emissions from deforestation
- Reducing emissions from forest degradation
- Conservation of forest carbon stocks
- Sustainable management of forests
- Enhancement of forest carbon stocks

At COP 16 and COP 17 (Durban, 2011) major advances were made on several key methodological aspects of REDD+ including decisions on reference levels and safeguards and on tropical countries developing REDD+ national strategies.[5] In Cancun, recognizing that REDD+ countries are in different stages of development, it was also agreed that REDD+ should proceed in phases (see Box 1 below).

Though no decisions were made on REDD+ at COP 18 (Doha, 2012), advances were made through intercessional activities in advance of COP 19 (Warsaw, 2013). These advances lay out the blueprint for future guidance necessary to ensure that national REDD+ programs can eventually roll up into a coherent and credible international framework. In addition, REDD+ continues to be progressed through various bilateral and multilateral funding initiatives (see *Accessing Finance* chapter).

© J. FERGUSON-MITCHELL / WWF

All in all, since 2007, REDD+ has emerged as an important international proposal developed by the UNFCCC negotiations. The goal behind REDD+ is simple: Tropical countries that are willing and able to reduce their emissions from deforestation and forest degradation should be compensated for doing so (Scholz and Schmidt, 2008).

While the goal of REDD+ is simple, its implementation is not. As REDD+ moves slowly from theory to practice, policymakers, practitioners and other local, national and international stakeholders will need to overcome many difficult challenges and hurdles to achieve zero net emissions from deforestation and forest degradation (ZNEDD).

WWF has been working across the globe for more than 50 years addressing deforestation and forest degradation. More recently, we have seized the REDD+ opportunity to conserve forests, and to that end we have undertaken scientific research, developed proposals for the UNFCCC process, advocated for policy changes at national and international levels, provided capacity-building and technical expertise to national and local REDD+ stakeholders, and worked on the ground with local partners to deliver REDD+. This publication for REDD+ Practitioners, *WWF Guide to Building REDD+ Strategies: A toolkit for REDD+ practitioners around the globe,* is one more of our REDD+ related activities (see *WWF REDD+ Resources* chapter).

WHAT IS A REDD+ STRATEGY?

Using the classic definition of business strategy proposed by Chandler (1962), a national or subnational REDD+ strategy comprises the basic goals and objectives that we want to achieve with REDD+, the major programs of action chosen to reach these goals and objectives, and the major pattern of resource allocation necessary to achieve them.

One important characteristic of any strategy is that it is composed of several interlocking parts. You need all of them working together to deliver the goals and objectives. In our case, as depicted in the figure below, REDD+ governance, REDD+ tracking mechanisms, and effective programs to address the drivers of emissions from deforestation and forest degradation will all be needed to deliver REDD+ goals and objectives.

Note also that a REDD+ strategy is both a blueprint to guide actions—a REDD+ strategy document—and the implementation of those actions through time. These guidelines focus mostly on the former, on helping REDD+ country practitioners develop a REDD+ strategy blueprint; but it should be underlined that no strategy is better than its on-the-ground implementation.

WHY DOES A COUNTRY NEED A REDD+ STRATEGY?

As REDD+ is a large and complex undertaking, any tropical forest country that wants to achieve a significant reduction of its forest-related CO_2 emissions clearly needs a comprehensive REDD+ strategy, and the same may be true for large subnational landscapes.

This need has been identified by UNFCCC discussions in articles 71 and 72 of the Cancun Agreement (COP 16), which request that developing country parties aiming to undertake REDD+ activities develop "a national strategy or action plan... that addresses, inter alia, the drivers of deforestation and forest degradation, land tenure issues, forest governance issues, gender considerations, and safeguards..." (UNFCCC 2011).

As for when a REDD+ strategy should be developed, the Cancun Agreement puts it clearly at the beginning of planning, among the Phase One activities as described in Box 1 below.

A REQUISITE TO ACCESS ONGOING REDD+ FINANCING

As stated, developing a comprehensive REDD+ strategy is in the self-interest of any country that wants to significantly reduce its forest-related CO_2 emissions. It is also a request of the UNFCCC that interested tropical countries submit their national

FOCUS

THE THREE-PHASE APPROACH TO REDD+ INCLUDES THE DEVELOPMENT OF A COMPREHENSIVE STRATEGY AT THE ONSET OF ENGAGEMENT ON REDD+

At UNFCCC COP 16 in Cancun, parties to the convention agreed that:

"REDD+ activities should be implemented in phases, beginning with the development of national strategies or action plans, policies and measures, and capacity-building, followed by 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, and evolving into results-based actions that should be fully measured, reported and verified."

The three-phase approach to REDD+ embraced by the UNFCCC Cancun Agreement is more developed in this excerpt taken from Angelsen et al., (2009) in which developing a REDD+ strategy is also the key component of Phase One:

PHASE ONE is essentially national REDD+ strategy development, including national dialogue, institutional strengthening and demonstration activities. These activities should continue to be supported by voluntary contributions that are immediately available, such as those administered through the World Bank's Forest Carbon Partnership Facility (FCPF), UN-REDD, and other bilateral arrangements. Eligibility for access to funds should be based on a demonstrated national commitment to REDD+ strategy development.

PHASE TWO involves the implementation of policies and measures (PAMs) and should be supported by predictable funding from a global facility supported by an internationally binding finance instrument with enforceable commitments, such as assigned amount units (AAUs) auctioning revenue. Eligibility for access to those funds should be based on a demonstrated national commitment to REDD+ strategy implementation, with continued access based on performance, including proxy indicators of emission reductions and/or removal enhancements (e.g., reduction in area deforested). Once the financial instrument for Phase Two has been established, most Phase One activities could be incorporated into the Phase Two instrument.

PHASE THREE offers payment for performance on the basis of quantified forest emissions and removals against agreed-upon reference levels. This could be financed on a large scale by the sale of REDD+ units within global compliance markets or through a non-market compliance mechanism, with eligibility contingent upon compliance-grade monitoring, reporting and verification (MRV) and accounting of emissions and removals. No Phase Three REDD+ units should be earned for emission reductions or enhanced removals achieved during Phase Two, but Phase Three should allow crediting for the results of the continuation of policies and measures initiated in Phase Two.

REDD+ strategies to the international body. Moreover, national REDD+ strategy development is one of the initial REDD+ activities requested or supported by almost all existing multilateral and bilateral financing windows. For example:

- The Readiness Fund of the Forest Carbon Project Facility (FCPF) is focused on supporting "participating countries as they prepare for REDD+ by developing the necessary policies and systems, including adopting national REDD+ strategies; developing reference emission levels (RELs); designing measurement, reporting and verification (MRV) systems; and setting up REDD+ national management arrangements, including proper environmental and social safeguards." To transition from the Readiness Fund (Phase One of REDD+) to receiving funding from the FCPF's Carbon Fund, which pays for actual emission reductions (Phase Three) of REDD+), a Readiness Package Assessment is required, encompassing "all major readiness preparation activities from REDD+ organization, consultation, and strategy preparation."[6]

- The UN-REDD programme's two main activities are to assist developing countries in the preparation and implementation of national REDD+ strategies and mechanisms, and to support the development of methods and approaches based on sound science for a REDD+ instrument linked with the UNFCCC.[7]

- Bilateral REDD+ funders also request that tropical country partners develop credible national REDD+ strategies. Describing Norway's International Climate and Forest Initiative (NICFI), a recent review states,

"activities are only conducted through bilateral channels in countries where multilateral initiatives and/or multi-donor cooperation already exists. This ensures that recipient countries possess the necessary capacity for the uptake of projects. However, exceptions are made for:

› Countries that have already made such extensive progress at the national level that performance-based support for the implementation of an established strategy can be immediately provided.

› Countries with which Norway has long, broad-based experience of cooperation on natural resource management and which have already started internationally supported REDD+ programmes.
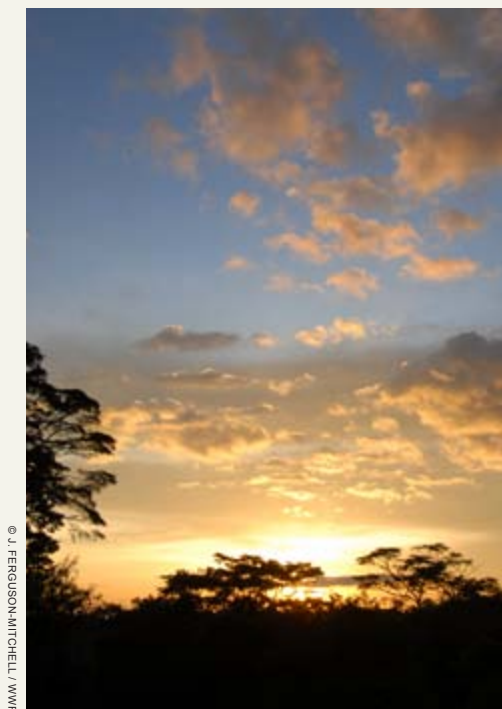
© J. FERGUSON-MITCHELL / WWF

BIBLIOGRAPHY

ANGELSEN, A., BROWN, S., LOISEL, C., PESKETT, L., STRECK, C. & ZARIN, D. 2009. *Reducing Emissions from Deforestation and Forest Degradation (REDD): An Options Assessment Report*. Meridian Institute, Washington, DC.

BONAN, G. B. 2008. Forests and Climate Change: Forcing, Feedbacks, and the Climate Benefits of Forests. *Science*, 320, 1444-1449.

CHANDLER, A.D. 1962. *Strategy and Structure*. MIT Press. Cambridge, Mass.

CBD 2008. Background document for the review of implementation of the expanded programme of work on forest biological diversity. *Subsidiary Body on Scientific, Technical and Technological Advice*. Rome, Italy.

FAO 2006. *Global Forest Resources Assessment*. Rome, Italy.

FCPF. 2013. *Readiness Package Assessment Framework*. FCPF, Washington, D.C.

IPCC 2007. *IPCC Fourth Assessment Report: Climate Change 2007*. IPCC.

SCHOLZ, I. & SCHMIDT, L. 2008. *Reducing Emissions from Deforestation and Forest Degradation in Developing Countries: Meeting the Main Challenges Ahead*. Bonn, Germany: Deutsches Institut für Entwicklungspolitik.

UNFCCC.2011. *The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention*. United Nations FCCC /CP /2010 /7 /Add.1 Bonn, Germany.

VAN DER WERF, G.R., MORTON, D. C., DEFRIES, R. S., OLIVIER, J. G. J., KASIBHATLA, P. S., JACKSON, R. B., Collatz, G.J. and J.T. Randerson. 2009. CO_2 Emissions from Forest Loss. *Nature Geoscience*, 2, 737-738.

WORLD BANK 2004. *Sustaining Forests: A Development Strategy*. World Bank, Washington, DC.

END NOTES

1. www.cbd.int/sp/targets
2. www.un.org/millenniumgoals
3. Decision 2/CP.13 was titled, Reducing emissions from deforestation in developing countries: approaches to stimulate action.
4. The term REDD+, versus REDD, first emerged under the UNFCCC in note by the Chair of the UNFCCC Ad Hoc Working Group on Long-term Cooperative entitled "Fulfilment of the Bali Action Plan and components of the agreed outcome" FCCC/AWGLCA/2009/4 as shorthand for paragraph 1 b iii) of the Bali Action Plan.
5. Decision 12/CP.17.
6. See www.forestcarbonpartnership.org and FCPF. 2013
7. From www.climatefundsupdate.org

REDD+ GOVERNANCE

WWF GUIDE TO BUILDING REDD+ STRATEGIES

REDD+ Governance

SETTING REDD+ GOALS, TARGETS AND PRINCIPLES

DOWNLOAD THIS CHAPTER

Key Messages

- One of the first steps in building a national or subnational strategy to reduce emissions from deforestation and forest degradation (REDD+) is to define clear and ambitious goals, targets and principles. These can help galvanize and guide internal efforts, motivate external support and assuage the concerns of REDD+ stakeholders.

- REDD+ principles are a key tool to avoid conflicts in REDD+ implementation and can help frame and guide responses and reactions in any unexpected situation.

INTRODUCTION

Goals, targets and principles are key components in the design and implementation of national and subnational REDD+ strategies. In this section we will refer to goals (or objectives) as the ultimate results (or impacts) that we want to achieve when undertaking REDD+ (e.g. to reduce greenhouse gas emissions or to achieve sustainable development). Targets are quantitative, or at times qualitative, milestones that help us assess progress toward these goals (e.g. to halve deforestation rates by 2015 or to reduce emissions from deforestation by 70 per cent by 2020). Finally, principles are a set of values or ideals that guide the implementation of actions to achieve goals (e.g. REDD+ should recognize and respect the rights of indigenous peoples and local communities).

Defining goals, setting targets and agreeing on the broad principle that will guide the implementation of REDD+ has been at the core of the international climate change discussions. This process should play an equally central role in the development of national and/or subnational REDD+ strategies. There are various arguments for when goals, targets and principles should be defined; setting REDD+ national goals, targets and principles early on will help inform the creation of policies and laws, address stakeholders' concerns and ratchet up support for the REDD+ implementation. This process will benefit, however, from ample consultations and may need periodic updating as more experience accumulates.

The benefits of defining goals, targets and

© ALEXANDER BELAKUROV / WWF

WEBINAR VIDEO: REDD+ AT BONN: OUTCOMES AND EXPECTATIONS FOR UNFCCC COP 19
LEARNING SESSION 12

▶

principles include:

- Compelling and overarching vision for REDD+ implementation;

- Ambitious targets to motivate stakeholders into action;

- Framework for concerted action, facilitating the integration of REDD+ with other sectoral and cross-sectoral strategies and planning processes such as climate change strategies, biodiversity strategies, forest policies, sustainable development strategies, natural resource management strategies, national development and poverty-reduction policies, etc.;

- Yardstick to assess and communicate status and trends of forest cover to policymakers and the public;

- Harmonization of subnational targets into a national goal;

- Clear indication of a long-term strategy, political will and desired outcome, which are important criteria for attracting national and international support and investments in REDD+;

- Identification of important synergies to complement national targets related to non-climate international processes such as the UN Convention on Biological Diversity (CBD), the UN Forum on Forest (UNFF) and the UN Millennium Development Goals (MDGs).

INTERNATIONAL POLICY CONTEXT

Goals, targets and principles for REDD+ and forest conservation more broadly are embedded within the United Nations Framework Convention on Climate Change (UNFCCC). The convention document itself states that the ultimate objective of the convention is the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."[1] More specific guidance on goals, targets and principles under the UNFCCC is provided below.

COP 16, Cancun
At the UNFCCC Conference of the Parties (COP) 16 in Cancun, under the discussions on REDD+, parties agreed to "collectively aim to slow, halt and reverse forest cover and carbon loss". While this target is qualitative and is not time-bound, it is still a strong statement from parties. In it, they call on tropical forest parties to reduce emissions from deforestation and forest degradation below business-as-usual levels (to slow), achieve zero net deforestation (to halt), and to ultimately expand forests (to reverse forest cover and carbon loss).

The UNFCCC COP 16 resolutions, known as the Cancun Agreements, also discussed principles under the rubric of guidance and safeguards. These principles include being "country-driven", "consistent with Parties' national sustainable development needs and goals", "results-based" and "[respectful] for the knowledge and rights of indigenous peoples and members of local communities."[2]

Other International Conventions, Forms and Agencies

Other international conventions, forums and agencies have also adopted and promoted forest conservation goals, targets and principles, including:

- Aichi Biodiversity targets of the UN Biodiversity convention (CBD), see *www.cbd.int*
- Forest objectives of the UN Forum on Forest (UNFF), see *www.un.org/esa/ forests*
- The Millennium Development Goals, in particular goal number 7 on environmental sustainability, see *www.un.org/ millenniumgoals*

Multilateral institutions that are out in front of the UNFCCC piloting REDD+ are guided by their own sets of principles. For instance, the UN-REDD Programme is guided by five interrelated principles of the UN Development Group (UNDG):[3]

- Human-rights-based approach to programming, with particular reference to the UNDG Guidelines on indigenous peoples' issues
- Gender equality
- Environmental sustainability
- Results-based management
- Capacity development

COURTESY OF UNFCCC

In its charter, the Forest Carbon Partnership Facility (FCPF) outlines five guiding principles:

- Respect for participating REDD+ countries' sovereign rights and responsibilities to manage their own natural resources, recognizing the pilot nature of the FCPF, following the "learning by doing" approach;
- Consistency with UNFCCC guidance;
- Compliance with the World Bank's operational policies and procedures, taking into account the need for effective participation of "forest-dependent indigenous peoples and forest dwellers in decisions that may affect them, respecting their rights under national law and applicable international obligations";
- Building private-public partnerships, particularly among indigenous peoples' organizations;
- Maximizing synergies with other multilateral and bilateral programmes focused on REDD+.[4]

NATIONAL AND SUBNATIONAL OPTIONS

This section provides an overview of what forest countries have accomplished to date regarding setting national and subnational goals, targets and principles.

Developing goals, targets and principles

The development process is important in establishing the quality of goals, targets and principles. Broad engagement with stakeholders will be essential to ensuring that the views and concerns of affected parties are included in this process. In the weakest cases, targets or principles are tabled without significant in-country consultations. Ideally, national REDD+ goals, targets and principles are developed in country through participatory processes building up to a national REDD+ strategy, as demonstrated in Mexico (see related *snapshot case study*).

Countries' REDD+ goals, targets and principles span a spectrum of ambition. On one extreme, some countries have put forward quantitative, time-bound targets to achieve absolute emission reductions below historical emissions figures from recent years (e.g. Brazil). Others have tabled quantitative, time-bound targets to reduce emissions below business-as-usual scenarios (e.g. Indonesia). Still other countries have settled for qualitative targets with no deadlines.

Goals, targets and principles are most effective when all or part of the country's REDD+ goals, targets and principles have been the result of broad, socially inclusive consultations, are supported by strong government will, and have been enshrined into laws. Such has been the case in Indonesia and Brazil.[5]

An intermediate option for countries is the incorporation of all or some of the REDD+ goals, targets and principles (which have been developed through socially inclusive consultations) into national development plans, as is the case for Mexico. In the weakest case, a country's goals, targets and principles are no more than the result of isolated administrative or political decisions that can be reversed with a change of authorities.

WEBINAR VIDEO: REDD+ AT UNFCCC-COP18, EXPECTATIONS AND ASKS
LEARNING SESSION 5

WEBINAR VIDEO: UNFCCC-COP18, OUTCOMES AND NEXT STEPS
LEARNING SESSION 6

FOCUS

THE MEXICO EXPERIENCE IN SETTING REDD+ GOALS, TARGETS AND PRINCIPLES

Mexico's goal for REDD+ goes beyond reducing greenhouse gas (GHG) emissions from forests and points to achieving sustainable rural development. Mexico's Vision for REDD+ states:

© ANTHONY B. RATH / WWF-CANON

- Inclusion and equity (territorial, cultural, social and gender);
- Plurality and grassroots participation;
- Transparency and legality;
- Equitable distribution of benefits;
- Certainty and respect for property rights of landholders and owners and sustainable use of natural resources;
- Free, prior and informed consent of communities;
- Promotion of the competitiveness of rural economies associated with forests, including that of communal forest businesses.

As important as the goals, targets and principles are, even more important is how Mexico arrived at them. This process was carried out over three years and included dozens of consultations with all major stakeholders and several rounds of writing and reviewing. The most recent version of the Mexico's Vision for REDD+ begins with an explanation of this process, underscoring its role as a platform from which to build the National REDD+ Strategy: "Because the involvement of different stakeholders nationwide is indispensable in the design process, this is a dynamic document that will remain in the consulting phase, with the depth and breadth that it demands." (CONAFOR, 2012)

Sustainable rural development represents the best means of implementing REDD+ in Mexico, considering that only a comprehensive approach will succeed in removing the pressures contributing to deforestation and forest degradation, promoting forest management and conservation, and raising the quality of life of the communities that inhabit the nation's forests.

Mexico's REDD+ strategy includes ambitious, time-bound targets. By 2020 Mexico will have:

- Advanced significantly toward zero net carbon emissions from natural forests through sustainable development and forest management in rural communities;
- Reduced significantly forest degradation from reference levels;

- Increased the areas of sustainable forest management, natural and induced forest regeneration, and forest conservation, leading to the increase of carbon stocks;
- Conserved biodiversity and preserved or increased ecosystem services;
- Strengthened social capital and the economic development of rural communities.

Mexico's Vision for REDD+, and its subsequent expression in ENAREDD+ (the REDD+ implementation strategy), is based on a framework of principles that will orient its lines of action and help maintain the safeguards the initiative proposes. These principles are cross-cutting, focusing on comprehensiveness, coordination and complementarities with other sectors and among branches of government, and include:

FOCUS

REDD+ TARGETS IN BRAZIL AND INDONESIA

In Brazil and Indonesia, REDD+ targets have been developed through extensive stakeholder engagement processes and promoted by strong government leadership.

Brazil, under former President Lula, declared that its REDD+ target was to achieve a reduction of 80 per cent of deforestation in the Amazon by 2020 compared with the average for 1996-2005 and a 40 per cent reduction in deforestation in the Cerrado region compared with the average for 1999-2008.

Indonesia President Susilo Bambang Yudhoyono declared his intention of achieving GHG emissions reductions of at least 26 per cent below a business-as-usual scenario by 2020 and 41 per cent emission reductions with adequate international support. If these overall mitigation targets are applied to projected forest emissions (not including peat forests) they would represent a reduction of 78 per cent to 87 per cent over 2005 forest-related emissions.

These targets are helping guide governments in the creation of their REDD+ strategies.

Figures from Brazil (2012) and Indonesia (2012) FIP/Forest Investment plans.

WWF VIEWPOINT

On goals

WWF endorses the goals of the UNFCCC convention and the Cancun Agreements, namely that REDD+ demonstrably contributes to greenhouse gas emission reductions with national goals working toward a global objective.

On targets: Zero net emission from deforestation and forest degradation (ZNEDD)

WWF advocates zero net emission deforestation and forest degradation (ZENDD) by 2020 to reflect the scale and urgency with which threats to the world's forests and climate need to be tackled. A clear, ambitious and measurable global target for reduced emissions from deforestation and forest degradation is a vital step toward limiting warming to well below 2°C.

To understand how ZNEDD (and the associated zero net deforestation and degradation) could be implemented in practice, WWF developed the Living Forests Model with the International Institute for Applied Systems Analysis (IIASA). The model presents various global land-use scenarios. It calculates the effect of agents such as population growth and consumer demand, and describes potential impacts in key areas such as food production, climate change, biodiversity, commodity prices and economic development. Based on this analysis, WWF concluded that ZNEDD/ZNDD is achievable, efficient and requires immediate action:

- It is possible to achieve ZNEDD/ZNDD by 2020, through better governance, a shift to sound forest stewardship and more

productive use of arable, non-forest land. By failing to make that shift, we squander valuable forests and the ecosystem services they provide.

- As populations and incomes grow, maintaining ZNEDD/ZNDD after 2030 will require forestry and farming practices that produce more with less land and water as well as new consumption patterns that meet the needs of the poor while eliminating waste and over-consumption. With such changes, ZNEDD/ZNDD can be maintained without creating shortfalls in food, timber, biomaterials or bioenergy.

- Delaying ZNEDD/ZNDD until 2030, or taking half measures, would lead to huge and irreversible losses in biodiversity and ecosystem services. To prevent runaway climate change, we need to address emissions from deforestation and forest degradation now; the longer we leave this, the harder it will become.

The analysis also identified five key issues that are crucial to achieving ZNEDD/ZNDD and avoiding negative consequences:

- **Biodiversity:** ZNEDD/ZNDD should never be achieved at the expense of biodiversity conservation (e.g. agricultural expansion in highly biodiverse grasslands to take pressure off forests). Strategies should immediately prioritize forests with the highest biodiversity so these are not lost during the time it takes to achieve ZNEDD/ZNDD.

- **Governance:** ZNEDD/ZNDD is only possible under good governance: forests with secure land tenure, effective laws and policies, and empowered, committed local communities whose rights are respected.

- **Market demand:** Much destructive forest use is encouraged by market demand, but markets can also drive better management. Incentives for high social and environmental standards in forestry and farming as well as bans on trade in illegally sourced timber can help achieve this.

- **Lifestyle and consumption:** Crop production and livestock production play a major role in forest loss. Strategies are needed to reduce food waste, meat and dairy intake, energy use, over-consumption among richer people and to ensure poor people have the food, energy and materials they need to lead healthy, productive lives.

- **Local livelihoods:** Global plans must recognize local people's needs. ZNEDD/ZNDD needs to be adapted nationally, regionally and locally to ensure that REDD+ doesn't harm people's welfare, but rather promotes and supports it.

On principles

WWF, together with other conservation organizations, has endorsed the REDD+ Five Guiding Principles:

- **Climate:** REDD+ demonstrably contributes to greenhouse gas emission reductions with national goals working toward a global objective. This principle reinforces WWF's overall REDD+ goal, namely that REDD+ demonstrably contributes to greenhouse gas emission reductions with national goals working toward a global objective.

- **Biodiversity:** REDD+ maintains and/or enhances forest biodiversity and ecosystem services. WWF's REDD+ principle on biodiversity underpins the chapter on *Social and Environmental Safeguards*.

- **Livelihoods:** REDD+ contributes to sustainable and equitable development by strengthening the livelihoods of forest-dependent communities. Livelihood is a major principle discussed in the chapter on *Benefit Sharing*.

- **Rights:** REDD+ recognizes and respects the rights of indigenous peoples and local communities, as discussed further in the chapter on *Social and Environmental Safeguards*.

- **Fair and effective funding:** REDD+ mobilizes immediate, adequate and predictable resources for action in priority forest areas in an equitable, transparent, participatory and coordinated manner. This principle is elaborated on in the chapter on *Accessing Finance*.

There is a strong convergence between WWF principles, UNFCCC guidance and the principles endorsed by several REDD+ countries.

FURTHER RESOURCES
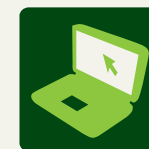
- *WWF 2011 Living Forest Report*, available at *www.panda.org/livingforests/download*

- *REDD+ Five Guiding Principles*, available at *bit.ly/REDDfive*

- UNFCCC, COP 10 Cancun Agreement, particularly Section C and Appendixes I and II, available at *www.unfccc.int*

BIBLIOGRAPHY

Brazil. 2012. FIP—Forest Investment Plan, available at www.climateinvestmentfunds.org

CBD. 2010. The Aichi Biodiversity targets of the UN Biodiversity convention (CBD), available at www.cbd.int

CONAFOR. 2012. Elementos para el diseño de la estrategia nacional REDD+ Conafor SEMARNAT, Mexico DF, available at www.conafor.gob.mx/portal

FCPF 2010, 2012 Charter Establishing The Forest Carbon Partnership Facility. FCPF Washington, available at www.forestcarbonpartnership.org/charter-and-rules-procedure

Indonesia. 2012. FIP—Forest Investment plans, available at www.climateinvestmentfunds.org

UNFCCC. 2011. The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention. United Nations FCCC /CP /2010 /7 /Add.1 Bonn, Germany.

UN Forum on Forest. 2010 Objectives on forest available at www.un.org/esa/forests

UN-REDD. 2008. Framework Document. UN Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries. FAO, UNDP, UNEP, Geneva, Switzerland. Available at www.un-redd.org

END NOTES

1. Article 2 of the Convention.
2. A full list of safeguards and principles can be found in Annex I to Decision 1/CP.16 (UNFCCC, 2010).
3. See UN-REDD, 2008.
4. See FCPF, 2012.
5. See Brazil and Indonesia 2012 FIP/ Forest Investment plans, available at www.climateinvestmentfunds.org.
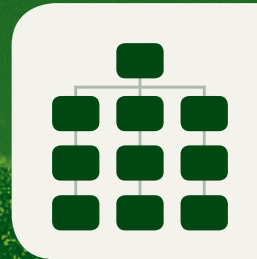
WWF GUIDE TO BUILDING REDD+ STRATEGIES

REDD+ Governance

INSTITUTIONAL ARRANGEMENTS

DOWNLOAD THIS CHAPTER

Key Messages

- To engage in the reduction of emissions from deforestation and forest degradation (REDD+), most countries will need either new institutional arrangements and/or reforms of existing institutions at all scales of REDD+ implementation, from subnational to national.

- Countries should define responsibilities and capacities to perform all major functions of a REDD+ system, namely management, financial, technical, implementation, registry and certification, and safeguards and accountability functions.

- These institutions should have a clear division of responsibilities and authorities between the national (federal) and subnational (state) levels and be able to coordinate these responsibilities both vertically and horizontally.

INTRODUCTION

Institutional arrangements for REDD+ refer to (a) the network of institutions or agencies that would be responsible for delivering REDD+; (b) their functions, namely "who does what"; and (c) the interaction between institutions.[1] This chapter has implications for other sections of this document. For example, institutions will need to draft and enforce laws and regulations; measure, report and verify forest changes; and enforce and monitor safeguards. While other chapters focus on what should be done in each of those areas, this section focuses on the vehicle to achieve these goals.

Most countries have decades if not centuries of experience managing their forests in both public and private lands. Decision-making is often split between production-oriented agencies (e.g. a ministry of forestry or agriculture) and conservation agencies (e.g. a ministry of the environment or a national parks agency). Furthermore, forest management decisions can be made (often concurrently) at the district (or county) level, at the province (or state) level and at the national level. In many cases decisions regarding land use are also made at the village or community level.

Developing and implementing a countrywide REDD+ strategy will increase the demands on existing government agencies and will likely result in the creation of new institutions to perform new or revamped functions. Building a country's REDD+ institutions will not be a onetime activity, but rather an extended process encompassing a large number of stakeholders. This chapter endeavours to provide REDD+ practitioners and their local partners with an understanding of the overall process and its many options so that they can determine at which stage in the process they will engage.

Institutional arrangements for REDD+ are being developed simultaneously at multiple levels, at times with little coordination among them. Although the current multiplicity of independent national and subnational experiences may be enriching, the challenge going forward is to create national and subnational REDD+ institutional arrangements that are coherent and coordinated and that can work together to deliver countrywide emission reductions.

INTERNATIONAL POLICY CONTEXT

This section summarizes the key issues in the international REDD+ arena that may shape the design of REDD+ institutional arrangements in developing countries. While the United Nations Framework Convention on Climate Change (UNFCCC) has given little direct guidance on the specific institutions that should be established in developing countries, it does provide guidance on the types of actions that are required of REDD+ countries, and this, in turn, influences the types of institutions that are needed.

COP16: Cancun, 2010
At the 16th UNFCCC Conference of the Parties (COP 16) in Cancun, parties agreed that developing countries wishing to participate in REDD+ activities should develop a:

- National strategy or action plan
- National or subnational forest reference emission level or reference level
- Robust and transparent national monitoring, reporting and verification (MRV) system
- System to provide information on how safeguards are implemented

WEBINAR VIDEO: IMPLEMENTING REDD+ AT A NATIONAL SCALE

LEARNING SESSION 13

▶

© EDUARDO RUIZ / WWF-CANON

Parties also recommended that national REDD+ strategies consider, among other things:

- Drivers of deforestation and forest degradation
- Land tenure
- Forest governance issues
- Gender considerations
- Safeguards
- Full and effective participation of relevant stakeholders.

While this broad framework provides some guidance for countries to develop their REDD+ institutions, little clarity is given on how to implement these institutional arrangements. In the absence of specific UNFCCC directives, multilateral funds—including the Forest Carbon Partnership Facility (FCPF), Forest Investment Program (FIP) and UN-REDD—are significantly influencing the design of national-level REDD+ institutions through the development of national REDD+ strategies.

Institutional arrangements for REDD+ at the international level

Developing countries need to build their national REDD+ institutions, but the same could be said of the international community, which is very behind in building international REDD+ institutions. After strong advances at UNFCCC-COP 16 in Cancun (2010), the REDD+ international discussion has stalled, due in part to some UNFCCC parties' tactic of keeping easier issues captive to force the advance of more difficult discussions, a position encapsulated in the phrase "nothing is agreed before everything is agreed".

Hence, as of mid-2012 there is no clarity regarding how the REDD+ international institutional system would look, and the options include:[2]

- **Dedicated REDD+ institutions and arrangements or REDD+ institutions as a component of nationally appropriate mitigation actions (NAMAs).** The international agreement can move in the direction of creating institutional arrangements specific for REDD+ or, alternatively, make REDD+ part of the broader NAMAs institutional arrangements. Thus far REDD+ agreements and arrangements have gone ahead on their own, but the discussion is very much open and could go either way.

- **A more centralized REDD+ international system or a more decentralized one.** The international REDD+ system may be more centralized, either in terms of who establishes the rule of the game or who manages international REDD+ finance. An example of a centralized system would be one where the UNFCCC establishes a worldwide set of rules on what REDD+ is and how MRV is carried out; manages a major international REDD+ fund, such as the Green Climate Fund; and oversees a worldwide REDD+ carbon market. Or we could go in an opposite direction with a decentralized system where there are many sets of rules, many funds and many markets operating in different institutional settings, with or without a global mechanism— a registry or a clearinghouse—to coordinate among them. Thus far the picture is mixed—

the UNFCCC commands a lot of authority on technical aspects, but international funding and the limited existing carbon markets have grown in a rather decentralized way.

- **Funds or markets to finance REDD+.** International institutional arrangements will vary significantly if the main source of funding for REDD+ comes from international public sources, either traditional or innovative, or if they come from carbon markets and private investors. The first case calls for institutional arrangements to manage and allocate the actual flow of funds, whereas the latter may require institutions to register, certify, track and audit market transactions.

Outside of the UNFCCC a lot is going on too through (a) multilateral REDD+ funds, particularly the FCPF and the Forest Investment Program (FIP) administered by the World Bank and UN-REDD administered by a consortium of UN agencies; (b) bilateral funds, particularly from Norway (the Norwegian International Forest and Climate Initiative), as well as Germany, Japan and the UK; (c) a bevy of small voluntary markets; and (d) a few subnational and international initiatives linking states (or provinces) of different countries. Although some of these initiatives, particularly the multilateral funds, profess to abide by UNFCCC agreements and even to close shop when a full climate agreement is in place, the fact is that through their conditions and guidelines they play a strong role in shaping how recipient countries build their REDD+ institutions.[3]

NATIONAL AND SUBNATIONAL OPTIONS

A horizontal approach to building REDD+ institutions
The first step in developing REDD+ institutions begins with agreeing on what functions these institutions should perform. Table 1 below describes seven major functions of a country's REDD+ institutional arrangements: management, financial, technical, implementation, registry and certification, safeguards and accountability, and capacity building.

Table 1 lays out the different functions that need to be performed within a country but doesn't tell us how many institutions are needed to perform these tasks or how these institutions should be coordinated. On one end of the spectrum, a country could create a single REDD+ agency that deals with all these functions. At the other end of the spectrum, individual government ministries could perform each of these functions with some degree of horizontal coordination. In between these two extremes, a coordinating body (e.g. a high-level presidential task force) could be created to bring together the expertise of several agencies.

Institutional arrangements for the functions highlighted above can be thought of in two ways. Given that REDD+ implementation will cut across many existing institutions and government ministries, strong **horizontal** coordination will be needed across these functions, including clear delineation of roles among different institutions. We can also divide up REDD+ functions **vertically**; how will agencies align from the local level up to

TABLE 1: FUNCTIONS THAT A COUNTRY'S REDD+ INSTITUTIONAL ARRANGEMENT MUST PERFORM TO DELIVER REDD+

Management: Provide overall management and oversight of the process	» Elaborate REDD+ strategies and policies that may or may not require the approval of higher levels of government (e.g. cabinet, parliament); » Oversee the implementation and review of REDD+ strategies and policies; » Review and approve REDD+ plans and programs of lower levels of government; » Manage REDD+ international relationships.
Financial: Manage REDD+ finance	» Collect and manage funding for REDD+ from international and national sources; » Allocate and disburse resources according to REDD+ national strategies and policies (possibly in coordination with the REDD+ implementation function; see implementation function below); » Ensure compliance with nationally and internationally agreed-upon financial, fiduciary and reporting procedures; » Manage countries' relationships with REDD+ carbon market.
Technical: Provide technical guidance and support for REDD+	» Put in place national standards for REDD+ (e.g. MRV and for social and environmental safeguards) » Perform regular forest assessments and MRV activities, or delegate them to other entities and review and approve results; » Manage relationships with international REDD+ technical bodies; » Provide technical assistance to REDD+ parties (e.g. provide technical standards and guidelines on how to implement and measure REDD+).
Implementation: Undertake REDD+ activities or supervise and coach REDD+ activities of other parties	» Implement REDD+ readiness and demonstration activities; » Prepare and/or review REDD+ programs and projects in accordance with REDD+ national strategy and policies; » Implement REDD+ strategies, policies, programs and projects or delegate implementation to other parties; » If required, review or participate in the review and approve REDD+ projects of lower levels of governments or particulars for financing (see financial function above).
Registry and certification: Track, register and certify REDD+ actions and/or outcomes	» Put in place a register of REDD+ activities and achievements; » Certify MRV REDD+ results; » When appropriate, use the REDD+ registry to facilitate payments and distribution of Certified Emission Reductions among REDD+ project participants; » Manage relationships with international registry and certification bodies.
Safeguards and accountability: Ensure transparency, governance and safeguards	» Put in place and oversee the operation of participatory and consultation mechanisms and of social and environmental safeguards; » Put in place and oversee operation of grievance procedures; » Manage relationships with international safeguards and accountability bodies; » Put in place an information system to track safeguards » Establish a recourse mechanism.
Capacity building: Ensure that all parties have the required knowledge	» Provide or facilitate the training and capacity building of staff of all REDD+ agencies so that they can properly deliver their functions; » Provide or facilitate the training and capacity building of all major REDD+ stakeholders so that they can actively participate in and benefit from the REDD+ system.

Source: Adapted from Streck et al. (2009).

the national (and international) level? What will be the division of responsibility and authority between these levels, and to what extent should we devolve these functions?

A vertical approach to building REDD+ institutions

Countries will also need to decide how to divide responsibilities vertically among national-, provincial-, district- and project-level authorities. There are three major ways in which a country can arrange institutions vertically:

- In a **fully centralized** model, all REDD+ functions would be managed by national-level institutions. Individual REDD+ activities would be coordinated centrally by the government, which would also be responsible for MRV, safeguards, nation-wide REDD+ accounting, etc. Guyana is a good example of a fully centralized REDD+ model in which REDD+ is managed from the highest national level, the Office of the President (see Table 2).

- In a **fully decentralized** model, activities would be managed at the project level, with independent projects producing and selling emission reductions. There may be third-party standards (e.g. Verified Carbon Standard (VCS); Climate, Community and Biodiversity Alliance (CCBA)) that provide quality control for emission reductions (see the chapter on MMRV) and safeguards (see the chapter on social and environmental safeguards), or governments may exert some regulatory power. This approach is valid only as an interim step under the UNFCCC, although a country theoretically could move ahead outside of the UNFCCC and develop only voluntary projects.

- In a **partially decentralized or partially centralized approach** (sometimes called a nested or jurisdictional approach), local-level actors can implement REDD+ functions with some degree of independence from a higher-level authority (such as a national or state government). Some rules will be imposed on all nested parties, but these can be constructed from the bottom up or from the top down. A nested approach can be implemented at any combination of scales; for example, the first level could be the country, the second level the provinces, the third level the district and the lower level the local projects.

All the REDD+ functions described in Table 1 can be distributed among the national- and subnational-level REDD+ agencies in a partially centralized (or partially decentralized) institutional arrangement. While all functions are equally important, the discussion on division of labour between the national and subnational levels is particularly important for the MRV and financial functions because these functions will play a larger role in the distribution of benefits among REDD+ participants. A possible example is presented in Table 2 below.

TABLE 2: A PARTIALLY DECENTRALIZED APPROACH WITH INSTITUTIONS AND FUNCTIONS AT NATIONAL AND SUBNATIONAL LEVELS

MANAGEMENT FUNCTIONS	
NATIONAL-LEVEL INSTITUTION(S)	**SUBNATIONAL-LEVEL INSTITUTION(S)**
» Elaborates national REDD+ strategies and policies; » Reviews and approves subnational REDD+ plans, programs and projects; » Oversees the implementation and review of the REDD+ strategy; » Manages REDD+ international relationships.	» Elaborates subnational REDD+ plans, programs and projects; » Oversees implementation and MRV of subnational REDD+ plans, programs and projects; » Manages relationships with national REDD+ agencies and other relevant national agencies; » Coordination/integration of strategies at village and district levels.

FINANCIAL FUNCTIONS	
NATIONAL-LEVEL INSTITUTION(S)	**SUBNATIONAL-LEVEL INSTITUTION(S)**
» Manages relationships with international funding window; » Allocates and disburses resources according to REDD+ national strategies and policies and MRV metrics; » Ensures compliance with nationally and internationally agreed-upon financial, fiduciary and reporting procedures.	» Manages relationships with national funding window (and if authorized, with international funding windows); » Disburses resources to approved REDD+ plans, programs and projects in accordance with national MRV metrics; » Ensures compliance with nationally and internationally agreed-upon financial, fiduciary and reporting procedures.

TECHNICAL FUNCTIONS	
NATIONAL-LEVEL INSTITUTION(S)	**SUBNATIONAL-LEVEL INSTITUTION(S)**
» Puts in place national standards for REDD+ metrics, MRV, and social and environmental safeguards; » Performs regular forest assessments and MRV activities, or delegates them to other entities and reviews and approves results; » Manages relationships with international REDD+ technical bodies; » Provides technical assistance to subnational programs.	» Applies national standards for REDD+ metrics, MRV, and social and environmental safeguards; » Performs regular forest assessments and MRV activities and forwards outcomes to national authorities; » Provides technical assistance to programs and projects.

REDD+ IMPLEMENTATION FUNCTIONS	
NATIONAL-LEVEL INSTITUTION(S)	**SUBNATIONAL-LEVEL INSTITUTION(S)**
» Implements national enabling and readiness activities; » Prepares or reviews REDD+ programs and projects in accordance with REDD+ national strategies and policies; » Implements REDD+ strategies, policies, programs and projects or delegates implementation to subnational parties.	» Prepares and implements REDD+ projects in accordance with REDD+ national strategies and policies, MRV standards, and social and environmental safeguards; » Submits results to national REDD+ oversight and certification agency.

CERTIFICATION AND REGISTRY FUNCTIONS	
NATIONAL-LEVEL INSTITUTION(S)	**SUBNATIONAL-LEVEL INSTITUTION(S)**
» Puts in place and oversees the national REDD+ MRV and certification standards and procedures; » Registers and certifies REDD+ MRV results; » When appropriate, uses the registry to facilitate payments for and distribution of Certified Emission Reductions among REDD+ project participants; » Manages relationships with international bodies.	» Ensures that subnational programs and projects comply with national REDD+ MRV and certification standards and procedures; » Submits results to national (or in some cases, international) authorities for approval, registry and certification.

SAFEGUARDS AND ACCOUNTABILITY FUNCTIONS	
NATIONAL-LEVEL INSTITUTION(S)	**SUBNATIONAL-LEVEL INSTITUTION(S)**
» Puts in place and oversees the operation of participatory and consultation mechanisms and of social and environmental safeguards (may be a bottom-up approach); » Puts in place and oversees operation of grievance procedures; » Manages relationships with international bodies. » Safeguard information systems	» Ensures that subnational programs and projects comply with national participatory and consultation procedures and national social and environmental safeguards; » May have in place and oversee operation of grievance procedures or may refer parties to the national level. » Safeguard information systems

CAPACITY BUILDING FUNCTION	
NATIONAL-LEVEL INSTITUTION(S)	**SUBNATIONAL-LEVEL INSTITUTION(S)**
» Provides training and capacity building to national REDD+ staff and, where appropriate, to subnational REDD+ staff; » Provides or facilitates the training and capacity building of major REDD+ stakeholders so that they can actively participate in and benefit from the REDD+ system.	» Provides training and capacity building to local REDD+ staff, sometimes in collaboration with national-level agencies; » Provides capacity building and facilitation to ensure that local populations are able to use these opportunities.

Source: Based on Table 1, adapted from Streck et al. (2009)

SNAPSHOT CASE STUDY

STRENGTHENING REDD+ GOVERNANCE IN MADRE DE DIOS, PERU

For more information about this case study, visit: bit.ly/10MktlI

© DIEGO PEREZ / WWF

Context

Peru's approach to REDD+ is led at the national level by the Ministry of Environment and implemented at the subnational, jurisdictional level by the regional governments. The Madre de Dios region is important to REDD+ implementation because it has one of the most intact low-lying rainforests in the Peruvian Amazon currently threatened by gold mining, unsustainable agriculture and illegal selective logging. Social inequity and poverty are common, as large segments of the population have limited access to basic social and economic services. The lack of effective environmental governance is manifested in weak institutional capacity, high political instability and little technical capacity to understand the complex world of REDD+. In 2009, the Regional Government of Madre de Dios (GOREMAD) created the Roundtable of Environmental Services and REDD+ (MSAR) for developing a regional REDD+ strategy and promoting policies and information and

training for stronger regional capacity. However, due to lack of technical capacity and resources, MSAR could not be implemented.

Expected changes

In 2010 WWF started a REDD+ program in Madre de Dios with the goal of increasing the institutional and technical capabilities of the region to engage in policy design and implementation of a subnational REDD+ programme.

Achievements

MSAR reactivated. WWF and other strategic partners provided human and financial resources to support the implementation of MSAR. WWF served for some time as the technical secretariat of MSAR and plays a key role by providing technical advice, fostering civil society participation and guaranteeing transparency in its processes.

WWF fostered local technical capacities by coordinating with the Regional University of Madre de Dios to develop a diploma programme Environmental Management and REDD+, which trains local government officials and other stakeholders in relevant REDD+ technical and policy issues.

As a result, MSAR is starting to position itself as an important REDD+ actor at the local, national and international levels. After two years of work and with the financial support of several international institutions and NGOs such as WWF, the MSAR is growing in strength and now operates regularly under the leadership of GOREMAD. Specific achievements are:

■ Building a REDD+ coordination in Madre de Dios by bringing together various distinct projects and institutions that had been working individually in the region;

■ Developing technical capacities, and building consensus on concepts, and technical criteria to implement environmental services and REDD+ projects that coordinate with national processes;

■ Promoting technical and participative processes in which civil society can actively participate in subcommittees by voting and validating the results. This has led to a sense of empowerment by those participating in the process.

At the national level, Madre de Dios is being considered by the Ministry of Environment as a model for other regions and as a priority region in the National REDD+ strategy. Beyond Peru, GOREMAD presented its experience in the Governors' Climate and Forests Task Force (GCF) in 2012, a subnational collaboration between 19 states and provinces of key tropical forest nations that seeks to advance jurisdictional REDD+ programs—and will host the organization's 2013 annual meeting.

Challenges

Regional management discontinuity and regional political instability prevent progress and negatively impact or delay planned activities.

Lessons learned

■ In order to guarantee the continuity of processes when there is a high rotation of local government officials, it is essential to create a critical mass of trained professionals and technicians at the subnational level who live and work locally.

■ Participatory processes take time. Although the strength of this initiative comes from the collaboration between civil society and the regional government in validating and recognizing resulting products, this takes time and should be considered in planning.

© DIEGO PEREZ / WWF

A critical institutional arrangement: who should manage REDD+ finance?

One of the most controversial issues regards which institution (or institutions) should manage the REDD+ financial function, which we described in Table 1 as encompassing:

- Collecting funding for REDD+ from international and national sources;
- Allocating and/or disbursing resources according to REDD+ national strategies and policies;
- Ensuring compliance with national and international financial, fiduciary and reporting procedures;
- Managing relations with international funding window;
- Managing relations with REDD+ carbon markets and other forms of decentralized funding.

The issue of who manages REDD+ funds is relevant only to centralized or partially decentralized institutional approaches. In a fully decentralized system there is no pot of money and there are only one-to-one market transactions.[4] But because all REDD+ countries are currently developing either a centralized or a partially decentralized approach, and because all of them are still navigating REDD+ phases one and two, where financing is (or should be) front-loaded, the issue of who should manage REDD+ funds is still being determined. Options proposed for the management of country REDD+ funds include management by:

International organizations located outside the country. This is the case of the Guyana REDD+ Investment Fund (GRIF), which has the World Bank as its trustee and the World Bank, the

Inter-American Development Bank and the UN Development Group Agencies as executing entities (called partners) (see *www.guyanareddfund.org*).

International organizations located inside the country. This is a model that the Democratic Republic of Congo (DRC) is leaning toward, as the country has asked the UNDP to organize and manage the DRC National REDD+ Fund.

National organization totally or partially independent of the government. To the best of our knowledge, there is no on-going experience of this type for REDD+, but many existing Conservation Trust Funds (CTFs) could provide a viable model. CTFs are legal entities created ad hoc to operate a special purpose fund. Their board may or may not include public representatives.[5]

Decentralized public entity. REDD+ funds could be managed by a public development bank that has a significant degree of independence from the government in terms of management and financial operation. This is the case of Brazil's Amazon Fund, which is managed by the Brazilian National Development Bank, an agency of the government of Brazil, but the fund has functional independence from the bank.

An official government agency whose budget is part of the government budget (national, state or district). FONAFIFO, the agency that manages the well-known Costa Rica forest payment for environmental services (PES) program, is such a case. FONAFIFO depends on the Costa Rica Ministry of Environment, which appoints FONAFIFO's board (two representatives from the private sector and three from the public sector), with FONAFIFO funds coming mostly from national budget allocations and international grants. Likewise, Mexico's National Forest Commission management of the country's PES-carbon program includes the management of its financial functions.

FOCUS

GUYANA AND BRAZIL: TWO DIFFERENT COUNTRIES, TWO DIFFERENT REDD+ INSTITUTIONAL ARRANGEMENTS

Guyana is a small, sparsely populated, tropical forest country with very low historical deforestation rates. An early REDD+ mover, Guyana's REDD+ institutional arrangements were developed directly by the Office of the President and have remained strongly centralized.

Because of its strong dependence on international bilateral funding, Guyana opted for financial institutional arrangements managed mostly by multilateral development agencies. The Guyana REDD+ Investment Fund (GRIF) Steering Committee is chaired by the Government of Guyana and includes representatives of donors, civil society and other stakeholders. The GRIF receives REDD+ payments and approves investment projects that contribute to the Guyana Low Carbon Development Plan. The World Bank, as trustee of the GRIF, manages the funds, and once a project is approved, money is transferred to the partner entities, including the Inter-American Development Bank and selected UN agencies that would implement the project. (See www.guyanareddfund.org for more information).

Brazil is a large, heavily populated, tropical forest country with high deforestation rates. Brazil is also a federal country with significant authority vested in its states. Its approach to REDD+ has therefore been more decentralized, with important REDD+ institutions being developed both at the federal and the state levels. It is still an open issue in Brazil as to how it will harmonize approaches at these different levels.

Brazil is the world's sixth-largest economy, and although it has received significant international financing for REDD+, it has also contributed significant domestic resources to REDD+ policies and measures. Consequently, its institutional arrangements for REDD+ financing are all domestically managed. The largest of these, Brazil's Amazon Fund, is managed by the Brazilian Development Bank (BNDS), a public bank with a lending portfolio larger than that of the World Bank. BNDS distributes grants and soft loans to private and public project proponents in line with the Amazon Fund's Guidelines and Criteria for the Allocation of Resources to support four main themes: public forests and protected areas, sustainable production, science and institutional development and control mechanisms. (See www.amazonfund.gov.br for more information).

The issue of where to locate and how to disburse REDD+ funds is closely related to (a) how much a REDD+ country depends on international financing as compared to national budgets and (b) the perception of the country as a good or a poor funds administrator. The more a country depends on external funds and the more widespread the perception that the government is a poor manager of public funds, the stronger the international and national pressure will be to assign the management of REDD+ funds to an independent institution.

Communities, private institutions and NGOs for REDD+

Institutional arrangements of local communities, the private sector and nongovernmental organizations (NGOs) are as important as public-sector institutions for the successful implementation of REDD+. Figure 1 below highlights the various roles and interactions that indigenous peoples, local communities, businesses and NGOs can play in REDD+. In addition to this chapter, information on institutional arrangements for non-governmental REDD+ actors are discussed in the chapters on social and environmental safeguards and benefit sharing.

Indigenous peoples and local communities often need their own platforms to facilitate inclusion and representation in REDD+ decision-making, including protecting their rights and tenure and ensuring fair and equitable benefit sharing.

Businesses can play a variety of roles in REDD+ processes and may participate in a range of institutions. Small businesses may need training and support to engage with REDD+, and both small and large businesses can create

FIGURE 1: BEYOND THE PUBLIC SECTOR: COMMUNITIES, BUSINESSES AND NGOS FOR REDD

KEY FUNCTIONS OF PUBLIC INSTITUTIONS

1. Management
2. Financial
3. Technical
4. Implementation
5. Registry and certification
6. Safeguards and accountability
7. Capacity building

KEY FUNCTIONS OF INDIGENOUS PEOPLE AND LOCAL COMMUNITIES INSTITUTIONS

1. **Defense of local interests:** e.g. rights to forests, social safeguards, benefit sharing
2. **Build capacity to participate in REDD+:** e.g. securing training, technical support

KEY FUNCTIONS OF BUSINESS INSTITUTIONS

1. **Facilitate business investment in REDD+:** e.g. pooling demand and supply, financing
2. **Facilitating dialogue with other stakeholders:** e.g. roundtables, trade associations

KEY FUNCTIONS OF NGOs

1. **Facilitating dialogue among stakeholders:** e.g. roundtables, committees, steering groups
2. **Capacity building and training** of country and local stakeholders
3. **Providing technical support to key stakeholders:** e.g. to national and local governments on MRV

private REDD+ institutions to faciliate engagement in REDD+. Businesses are active in many of the roundtables that have been established around forest conservation and certification and have independently established trade associations such as the Climate Markets & Investment Association (CMIA).

NGOs are already one of the major stakeholders of REDD+ with strong presence, commitment and expertise in many key components of successful national and local REDD+ strategies. Many NGOs, including the global conservation organization WWF, have successfully engineered several institutional arrangements for REDD+. Civil society organizations have established roundtables both at the national and the local levels on issues such as social and environmental safeguards, MRV and benefit sharing, as well as commodity roundtables that are now having an increasing influence on REDD+ (See *Addressing Drivers of Deforestation and Forest Degradation* chapter).

WWF VIEWPOINT

Countries differ considerably in their legal frameworks, their institutional traditions and their public agencies' capabilities. This affects their choices of institutional arrangements. For this reason, WWF does not have a position in favour of a specific type of institutional arrangement, stating for example which government agency should lead the REDD+ process, or what should be the precise division of labour between national and sub-national authorities. WWF's overall REDD+ position does, though, have

strong implications for a discussion of a country's REDD+ institutional arrangements.

A review of the *REDD+ Five Guiding Principles*, which WWF adheres to, and WWF's positions on REDD+ at UNFCCC COP 16 (Cancun), COP 17 (Durban) and COP 18 (Doha), renders the following list of guidelines for national and institutional arrangements:[6]

WWF favours national-level approaches to REDD+. This approach is consistent with UNFCCC's official position, and is chosen over a subnational-level approach as it is more suited to prevent leakages and ensure permanence.

Among national-level approaches, WWF favours centralized and partially decentralized jurisdictional approaches, over fully decentralized project-level approaches. The reason for this choice is that fully decentralized project-level REDD+ approaches are ill-suited to prevent leakages and ensure permanence. Moreover, project-level REDD+ approaches will not be able to address off-plot drivers of deforestation (e.g. enforcement, markets, infrastructure).

Complying with UNFCCC agreements. National REDD+ institutional arrangements should facilitate delivering on UNFCCC requests, as per the section *International Policy Context*.

REDD+ institutional arrangements may need a strong backing or even the direct participation of high-level agencies. Delivering REDD+ will require high-level commitments and REDD+ institutional arrangements, and, at least initially, may need to involve the participation of high

levels of government (e.g. the Office of the President and/or the Finance Minister).

Striking the right division of labour between national and subnational institutions. This is critical to ensure the coherence and cooperation between national and subnational REDD+ approaches.

Financial clarity is of paramount importance. It is important to define who would manage the funds and how they will flow through the REDD+ system.

Understanding what functions need to be performed to deliver REDD+. This is a good guide to define the institutional arrangements.

Caring for the 3Es. Any REDD+ institutional arrangement needs to deliver on the 3Es: efficacy, efficiency and equity.

Institutional building has different priorities and capacity requirements. So it may be right to undertake a phased building process, where different parts of the REDD+ institutional arrangements develop at different paces, as long as there is a road map to ensure that all the parts will fit together.

Strong institutional platforms for non-governmental REDD+ stakeholders are also needed. WWF is particularly interested and active in the creation of institutional spaces to facilitate the national- and local-level engagement in REDD+ of indigenous people, local communities, civil society organizations and NGOs.

FURTHER RESOURCES

Angelsen, A. (ed.). 2009. Realizing REDD+ National Strategy and Policy Options. CIFOR, Bogor, Indonesia.

Costenbader, J. 2009. Legal Frameworks for REDD. IUCN, Gland, Switzerland.

Haskett, J. and Gutman, P. 2010. Taking Stock of the Global Environment Facility Experience with Payments for Environmental Services Projects. In: Tacconi, L. (ed.), *Payments for Environmental Services, Forest Conservation and Climate Change. Livelihoods in the REDD?* Edward Elgar, UK.

Streck, C. et al. 2009. *REDD+ Institutional Options Assessments*. Meridian Institute, Washington, DC.

Visseren-Hamakers, I.J., Gupta, A., Herold, M., Peña-Claros, M., Vijge, M. 2012. Will REDD+ Work? The Need for Interdisciplinary Science to Address Key Challenges. *Current Opinion in Environmental Sustainability* 4, 590-596.

See *WWF REDD+ Resources* chapter.

END NOTES

1. The term "institution" is used here narrowly to define those actors and agencies undertaking REDD+ functions and does not include rules and laws. Legal issues are covered under other chapters of this publication.

2. See Streck et al. (2009).

3. Information on multinational REDD+ funds, their policies and their recommendations to REDD+ countries can be found at the following websites: www.un-redd.org, www.forestcarbonpartnership.org and www.climateinvestmentfunds.org. A good source of information on forest carbon markets is Forest Trends: www.forest-trends.org.

4. The same may be said for results-based, carbon-market-driven systems. There are no funds or fund managers in a CDM-like system, only one-to-one transactions.

5. See www.conservationfinance.org, the website of the Conservation Finance Alliance, for a good review of conservation funds.

6. See WWF REDD+ Resources chapter for a list of WWF REDD+ positions and publications.

WWF GUIDE TO BUILDING REDD+ STRATEGIES

REDD+ Governance

LEGAL AND REGULATORY FRAMEWORKS

DOWNLOAD THIS CHAPTER

Key Messages

■ The design and implementation of REDD+ brings new legal challenges for governments of developing tropical forest countries that may requie significant refores to national and subnational legal frameworks.

■ It will be essential during the design of legal frameworks to build public participation and consultation processes in the early stages of REDD+ strategy development to ensure that REDD+ systems are designed in a way that recognizes the needs and concerns of local populations.

■ Given the urgency in implementing REDD+, it will be important to begin work immediately on the legislative design, implementation and enforcement. In the interim, provisional measures may allow REDD+ activities at the national and subnational levels to commence while longer-term solutions are being found.

INTRODUCTION

The design and implementation of national and subnational REDD+ strategies will pose significant new legal challenges for tropical forest nations. In many counties this will mean an overhaul of existing national and subnational legislation, including the development of new legal systems, adaptation of existing laws to changing circumstances and abolishment of inappropriate policies and incentives. While some precedents exist, for example through payments for ecosystem services (PES) programmes and other markets for environmental services, rarely have these been implemented at the scale and pace envisioned for REDD+. This process will therefore require careful consideration, including the consultation and engagement of a broad range of national and international stakeholders to ensure the effective, efficient and equitable design of these policies and laws.

The design and implementation of legal frameworks for REDD+ will entail a range of subjective, and often controversial, decisions about rights, benefits and decision-making powers as well as a purely legal set of questions over how those decisions should be implemented. A coherent network of laws will be required, beyond just environmental and forest laws, including agricultural, infrastructure and development laws, that will ideally be capable of adapting to changes and developments in science, economics and policy.

Given the often poor levels of forest governance in developing countries, legal reform will also require vastly enhanced implementation and enforcement of forest laws. Furthermore, the large sums of finance expected to be delivered through REDD+ will require well-crafted fiduciary frameworks to ensure the sustained delivery of global objectives.

Finally, there will be implicit trade-offs in the complexities and urgency in implementing REDD+. While it will be important to begin work immediately on the design, implementation and enforcement of REDD+ legal frameworks to ensure that emissions reduction efforts begin promptly, these may require long-term and dedicated efforts to fully resolve. In the interim, provisional adaptive measures would allow REDD+ activities at the national and subnational levels to commence while longer-term solutions are being developed.

INTERNATIONAL POLICY CONTEXT

A variety of international laws are relevant to the implementation of REDD+ legal frameworks at the national and subnational levels. While the United Nations Framework Convention on Climate Change (UNFCCC) has been the primary standard-setting body for REDD+, other international conventions play a key role in setting the context within which other objectives of REDD+, e.g. the right to participation, are implemented.

COP 16: Cancun, 2010

At the 16th Conference of the Parties to UNFCCC (COP 16), in Cancun in 2010, the UNFCCC made specific reference, in its decisions, that REDD+ should be "consistent with the objectives of national forest programmes and relevant international conventions and agreements".[1] These decisions, collectively known as The Cancun Agreements, also placed a strong emphasis on stakeholder engagement, recognizing "the need to engage stakeholders at the global, regional, national and local levels, be they government, private business or civil society, including youth and persons with disability, and that gender equality and the effective participation of women and indigenous peoples are important for effective action on all aspects of climate change".[2] This position was further reinforced under the decision on REDD+, which stated that "developing country Parties, when developing and implementing their national strategies or action plans [should ensure] the full and effective participation of relevant stakeholders, inter alia indigenous peoples and local communities".[3] Parties in Cancun also agreed to certain safeguards relating to the "knowledge and rights of indigenous peoples and members of local communities"[4] as referred to in the *Social and Environmental Safeguards* chapter.

Multilateral REDD+ initiatives

The Forest Carbon Partnership Facility (FCPF), whose secretariat is the World Bank, and UN-REDD Programme have developed a range of guidance on the effective engagement of stakeholders in REDD+. Arguably the most important of these are the joint UN-REDD and FCPF Guidelines on Stakeholder Engagement (UN-REDD and FCPF, 2012) that were designed to

support effective stakeholder engagement of indigenous peoples and forest-dependent communities in REDD+. Other guidance includes the UN-REDD Social and Environmental Principles and Criteria (UN-REDD, 2012) and the UN-REDD FPIC Guidelines (UN-REDD, 2012).

Decisions relating to rights to participation

In addition to purely climate-related international laws, a further set of international legislation provides a framework for participation in REDD+. These are discussed under the Participation section below.

NATIONAL AND SUBNATIONAL OPTIONS

Three key issues are important in the development of national and subnational legislation in support of REDD+:

- **Legislation design, implementation and enforcement:** these issues represent the majority of legal work in REDD+ countries, and must work together to enable REDD+ to extend coherently from a unified policy vision to effective, efficient and equitable actions on the ground;
- **Rights:** encompassing tenure to land resources, timber and forests, as well as carbon rights;
- **Participation:** including mechanisms for ensuring stakeholders and, in particular, vulnerable forest dwellers have access to information, participation in decision-making, recourse to justice and freedom of expression.

The following sections outline how these three areas affect decision-making processes for countries implementing national and subnational REDD+ strategies. Legal reform work will also have broad implications across many other areas of REDD+ implementation; these issues are discussed further in other chapters in this publication, including *Assessing Finance*, *Benefit-Sharing Mechanisms*, *Social and Environmental Safeguards*, *Institutional Arrangements*, *Reference Levels*, and *Monitoring, Measurement Reporting and Verification*.

Legislative design, implementation and enforcement

The starting point for legal reform for most countries engaging in REDD+ will be the design, implementation and enforcement of REDD+ laws. These issues are often numerous and broadly dispersed across sectors, ministries and jurisdictions, but will need to be largely resolved for REDD+ to deliver on its long-term goals. In many countries, appropriate laws may be in place on paper, but they may either be contradicted by other laws or simply not implemented by poorly funded agencies in charge of legal administration.

For REDD+ legislation to be effective, it needs to (a) mainstream and harmonize REDD+ regulatory goals with other relevant legislation under a clear overall policy vision, avoiding "regulatory proliferation", and (b) be implemented via secondary decrees that are adequately enforced.

Legislative design

Legal frameworks for forest conservation and natural resource management are often at odds with national economic development planning, which is based on older models of economic productivity. Therefore, unless reformed, existing policies and incentives designed to maximize the conversion of forests into agricultural or other more "economically productive" uses can dwarf newer finance streams designed to incentivize sustainable activities such as REDD+.[5] Rather than address these conflicts, countries often find it easier to simply overlay newer sustainable development legislation on top of incompatible legislation, resulting in counterproductive "regulatory proliferation".

When designing REDD+ policies and laws, policymakers will be confronted with an often fragmented and overwhelming array of existing federal and state legislation. This includes binding primary legislation as well as secondary regulations at the national and subnational levels. These are often in addition to *non-binding* national climate change and REDD+ policies or strategies.

During the design of REDD+ legal frameworks, incoherent and conflicting policies can be addressed by either: (a) reframing existing forest, land-use planning, and other related laws and policies to maximize incentives for climate change mitigation, or (b) developing new, cross-cutting national and subnational REDD+ legislation while taking pains to avoid regulatory proliferation.

If a country fails to adequately coordinate its legal system, this can cause as much if not more confusion than a weak or underdeveloped legal framework might cause. In Indonesia, for example, numerous overlapping and at times contradictory policies exist on forestry, land tenure and spatial planning. In conjunction with a lack of regulatory hierarchy, this results in a competition between institutions over the direction of its REDD+ programme (Costenbader and Veney, 2011).

It will be important to resolve such conflicts early on in the REDD+ process, by harmonizing and mainstreaming REDD-related legislation with other sectors. Ideally, this would give environmental laws favourable to REDD+ priority over legislation promoting competing land uses, whether forestry sector related (e.g. commercial logging) or others (e.g. mining, petroleum or economic development).

Such harmonization, however simple in theory, may not be so easy to achieve in practice. Competing financial interests as well as competing political interests often still favour unsustainable forest and land management. In Uganda, for example, despite widespread legal reform since 1995 aimed at ensuring sustainable forest management, the government has degazetted large tracts of forest reserves in the past decade in order to encourage industrial and agricultural development. As a result, agencies and institutions initially established to sustainably manage forests have found themselves in the paralyzing situation of being required to enforce government policies both in support of and against forest conservation (Advocates Coalition for Development and Environment, 2005; Kakuru, 2011).

Implementation and enforcement

REDD+ legislation must be both well implemented and adequately enforced in order to realize forest carbon emissions reductions. This requires the following:

- Allocating adequate time and resources to proper drafting and enforcement of secondary legislation;
- Ambitious yet appropriate goals that consider the national context;
- Periodical review of of police, judicial systems, and land and forest records and data;
- Equivalent enforcement of forest sector rules on large-scale actors as on small-scale rural users;
- Local community empowerment and involvement in planning and ongoing management processes.

Law enforcement is a challenge for many developing countries. While most have well-drafted, sophisticated legislation in place, they lack either the domestic capacity to implement laws or secondary legislation in the form of implementing decrees and technical regulations to operationalize them. Also, such legislation often fails to account for national and subnational realities of corruption, and overly bureaucratic systems that can attempt to impose regulatory regimes that are not politically feasible. Regardless of the circumstances, for legislation to be implemented and enforced, it needs to be actually capable of being enforced and not overreaching, unfair or unrealistic.

For example, a 2011 review found that DRC, Mexico and Brazil all have generally solid legislative foundations for REDD+ but revealed major gaps in implementing decrees relevant to land tenure, forest management, public participation and benefit sharing (Costenbader and Veney, 2011). Similarly, Indonesia's Draft National REDD+ Strategy highlighted the need for technical regulations to improve law enforcement (e.g. to its Civil Code and Code of Criminal Justice) so as to minimize criminal activities and corruption in the forest sector (Government of Indonesia, 2010). In Vietnam, a sophisticated forest classification system exists with numerous categories and rules for land management, but poor coordination between forest-related ministries with closely overlapping functions has resulted in confusion and a lack of clarity (Climate Focus, 2012).

© WWF-CANON / MIKE GOLDWATER

Where forest law enforcement is strong, it has the potential to protect the elite and come down harshest on the rural poor lacking political connections. Government officials may overly focus on forest-related laws that favour commercial and strict conservation interests while overlooking human rights-based laws such as those protecting customary land tenure and participatory rights. Consequently, simply increasing enforcement of existing forest law can result in unreasonable penalties being inflicted on indigenous peoples and local communities. This can intensify in areas where government officials, law enforcement and possibly even the judiciary system are involved either directly or indirectly in illegal logging (Colchester, Boscolo et al., 2006).

Finally, law enforcement could further be improved by judicial system reviews to ensure transparent and just law enforcement as well as reviews of data relating to forest land title, access and use claims (Colchester, Boscolo et al., 2006).

Rights

Many developing countries wishing to establish national and subnational frameworks for REDD+ have forests that fall under state jurisdiction and are not assigned distinct property rights. In these cases, land rights will need to be clearly established to address the underlying drivers of deforestation, as well as to allocate resources derived from REDD+ activities. While some precedents exist through, for example, PES schemes, REDD+ poses new challenges that will need to be addressed within national legal frameworks.

As noted in the *Drivers of Deforestation* chapter, unclear tenure systems and other underlying factors such as the lack of adequate governance structures underpin tropical deforestation (de Sherbinin, 2002). Given that rights and land tenure are often overlapping and sometimes competing among entities,[6] most countries will need to assign or clarify rights to forest carbon or carbon sequestration. The determination of rights will also play a fundamental role in the overall establishment and function of REDD+ systems, as discussed in the *Benefit Sharing Mechanisms* chapter.

Land tenure

Land tenure encompasses a wide spectrum of issues including both formal and informal ownership along with access and use rights of land. Secure tenure rights will be funda-

mental for long-term success of REDD+, and countries will need to start immediately in clarifying such issues. In many developing countries, rights to forest land and resources have been historically governed by customary laws and institutions of indigenous peoples and have been recognized by a broad range of international human rights treaties and legal systems. The customary laws of indigenous peoples and local communities (IPLCs), however, are often highly complex and generally lack official recognition or documentation within national and subnational governments; a main area of land tenure conflict arises from the discrepancy between official and customary land rights. For more detailed information on forms of land tenure and rights, please see the *Social and Environmental Safeguards* chapter.

Over 80 per cent of tropical forests are legally held by states, though government ownership rates vary widely from country to country.[7] A 2009 survey found that IPLCs own only 18 per cent of tropical forest land despite significant and longstanding access and use rights to the vast majority of tropical forest areas. Such contradictions create conflicts when, for example, national governments are allocating land to investment opportunities for "unprotected" forest lands that might otherwise be allocated to IPLCs (Rights and Resources Initiative, 2009). This discrepancy between official and customary land tenure has led to a suggestion for a more pragmatic regime of "resource tenure", in which the bundle of rights to various resources within a given piece of land could be allocated to different user groups (Lyster, 2011).[8]

In addition to conflict between customary and statutory land tenure rights, other common tenure-related challenges include (Christy, Di Leva et al., 2007; Sunderlin, Hatcher et al., 2008):

- Separate tenure over land and the trees on it (and possibly other non-timber resources);
- Allocation to multiple persons or entities;
- Competing claims of ownership;
- Conflicting, incomplete or obsolete records;
- Conflict or confusion between categories of ownership;
- Inadequate enforcement and implementation of reforms;
- Lack of progress on rights that complement forest tenure reform;
- Government preference for industrial concessions and conservation over people;
- Competition within and among forest communities;
- Weak performance of government in advancing reforms.

Carbon rights

In addition to land tenure, REDD+ countries will also need to define rights relating to the storage and sequestration of forest carbon. Carbon rights are a new and challenging type of property with numerous potential legal definitions (Takacs, 2009). In this chapter, the term carbon rights is used to refer to the ownership of a right to the benefits and liabilities arising from the activities that are necessary before a carbon credit may be generated. Generally, carbon rights may be defined through three methods (Vhugen, Aguilar et al., 2012):

- Explicit new legislation
- Interpretation of existing legislation
- Contractual agreement

Clarification of carbon rights will be particularly relevant for countries or states that are interested in attracting private-sector investment, as secure carbon rights will help guarantee investments and theoretically allow ownership of carbon to be separated from the trees and land. Carbon rights will also be important for distributing any benefits that may arise from REDD+ activities to other actors, including IPLCs. The clarification of carbon rights is closely linked with land tenure and will require careful planning and consideration of potential outcomes.

Carbon rights legislation is currently in place in only two developed countries worldwide (Australia and New Zealand), a small handful of developing countries (e.g. Vanuatu) and several states (e.g. Alberta, Canada and Amazonas, Brazil). Several other states have legislation that allows carbon rights to be delineated according to pre-existing legal theories such as usufruct, or the right to use and enjoy the profits and advantages of something belonging to another as long as the property is not damaged or altered in any way (e.g. Madagascar), or other more complicated real estate regulations (e.g. Costa Rica). No developed country to date has established a nationwide carbon rights system that links to a national baseline and includes avoiding deforestation and forest degradation, as envisioned under REDD+ (Takacs, 2009; Vhugen, Aguilar et al., 2012).

As discussed under the section on legislative design, the clarification of carbon rights can either be implemented through new legislation or an interpretation and adaptation of existing legislation. In addition, carbon rights can be clarified through contractual agreement.

These three approaches are discussed in more detail here:

New legislation directly addressing the issue of carbon rights has the advantage of allowing carbon agreements (i.e. contracts) to be registered and enforceable by the government, thus greatly increasing security to parties (Takacs, 2009). Australia and New Zealand pioneered carbon rights legislation in conjunction with emissions trading systems in compliance with their Kyoto Protocol commitments at subnational and national levels, respectively, and provide important lessons for REDD+ (albeit with appropriate modifications dependent on a jurisdiction's legal system, capacity and enforcement capabilities) (Cox and Peskett, 2010).

Governments face important decisions when recognizing carbon rights, particularly with regard to their relation to land tenure and the incentives that these allocations can create. There are several options for the allocation of carbon rights: the state may either claim all carbon rights or delegate all or some proportion of carbon rights to those owning or managing forests. Where the state retains all carbon rights, it can still allocate revenue from carbon credits to landowners and forest dwellers accordingly.

The interpretation of existing legislation can provide an indication of how carbon rights will be governed and who is authorized to develop such rights where no regulation addresses carbon rights explicitly. In Guyana for example, because the government owns all state forests, which make up almost all forest in the country, it is the assumed owner of almost all domestic forest carbon. The extent, however, to which forest concession

owners may be charged royalties on forest carbon will depend on whether the Guyana Forestry Commission (GFC) regulates carbon as a "forest product" or transfers carbon rights to other persons or entities (Janki, 2009).

Interpreting existing laws has risks, however, because many REDD+ countries still have unclear tenure regimes for forest land. Moreover, because the state may later decide to reinterpret carbon rights or may issue new laws directly addressing the issue of carbon rights, such an approach could present too high risks for investors. Where a government has only ambiguously specified rights to carbon by law, it will need to provide a clear guarantee that its legal system will honour and enforce contracts regarding forest carbon and preferably that it will also compensate property owners should it legislatively override such rights in the future. Alternatively, political risk insurance (PRI) offered by organizations such as the Multilateral Investment Guarantee Agency (MIGA) for the World Bank or the Overseas Private Investment Corporation (OPIC) in the US can mitigate the risk posed by a change in host country legislation (Cranford and Parker, 2012).

Contractual agreements over forest carbon are a third means of defining carbon rights that may work in conjunction with either of the above options. Depending on the nature of the agreement, contracts may be set up in the form of property agreements (covering land) or personal property (other than land and thus lacking recourse to state-registered and enforceable rights) (Takacs, 2009).

SNAPSHOT CASE STUDY

SECURING LAND TENURE FOR COMMUNITY-BASED REDD+

Context

In the Democratic Republic of Congo (DRC), land use and access to resources are complicated by a dual system of statutory and customary laws regarding land tenure. Under current statutory law, most land belongs to the state, and rural people can only get right of use through attribution of "concessions". On the other hand, and especially in rural and suburban areas, the customary approach to land tenure and natural resources use remains the de facto system, with traditional chiefs managing access to land and natural resources. While several legal texts recognize communities' rights, to varying degrees, they are often in conflict.

WWF is actively working in the Lac Tumba region of the DRC to address land tenure. Through community-based land use and management plans and the establishment of local committees for development and conservation (CDCs), participatory decision-making processes are encouraged to help secure land tenure.

Expected changes

- Increase the communities' ability to participate in decision-making processes on land use by building capacity on the political, legal and contractual issues that may affect land use and local rights.
- Support the development of community-based land use and management plans as a basis for defining land tenure, fostering sustainable management of territories and benefit sharing mechanisms.

Achievements

At least 350 CDCs now exist at the village level, and these committees have been organized according to the traditional structures of the participating ethnic groups. CDCs are spaces where decision-making regarding land and natural resources management traditionally occur and they are considered a platform for dialogue and action for the development of the village. CDCs also function as intermediary communication channels between communities and other institutions at local, state and provincial levels.

Mapping was carried out of 135 *terroirs* (land areas, including relevant geographic, geological and ecological characteristics). The geographic information and other relevant data gathered through the mapping exercises have been shared with institutions including the Institut Géographique du Congo and the Institut National de la Statistique at the national and provincial levels. Printed maps have been distributed to the communities and administrations.

Community empowerment grew through reinforcing customary knowledge and community land use. The mapping exercise encouraged traditional knowledge and practices and promoted more effective management of community forests. This process also empowered communities by ensuring that customary power and land uses by communities, including by women, were reinforced and integrated into land-use planning.

Challenges

The costs for the mapping exercise were high and operations were logistically challenging. The costs associated with the community mapping exercise ranged between US$2,000 and US$3,000 per *terroir*, depending on the logistics and accessibility of the areas. Mapping teams also found that they needed between three and seven days per *terroir* in order to thoroughly study and survey each area.

Lessons learned

Support and buy-in from communities take time. During the mapping exercise, some community members were reluctant to participate at first. However, attitudes changed as community members began to trust the process and recognized the potential benefits.

Local administration should be involved at every stage of the process. WWF systematically included representatives of the Administration du Territoire in the mapping exercise. These local representatives also participated in the inception and final validation workshops for this process and helped build trust between WWF offices and communities.

Understanding customary power and administration is critical for the legitimacy and sustainability of REDD+ projects. In a country such as DRC where customary laws play a defining role in land-use management, it is important to work with local chiefs from the onset and obtain their approval to engage with the local communities on REDD+ related issues.

* This snapshot case study was produced in 2012.

Despite the sudden attention focused on carbon rights in recent years, it may not be advisable for every developing forest country considering a REDD+ programme to define carbon rights, especially where significant challenges exist to resolving land tenure. Moreover, clear carbon rights will be more important for countries seeking investment from private carbon finance rather than for publicly funded REDD+ programmes. Nonetheless, clarity over carbon rights will be essential in the long run to address the underlying drivers of deforestation and to equitably and efficiently distribute benefits arising from REDD+ programmes.

Participation

The final issue that countries need to address in the design of their national and subnational legal frameworks in support of REDD+ is the role of public participation in decision-making. Participation is central to sound decision-making, allocation of resources, sharing of information and benefit distribution (Cohen and Uphoff, 1980). Participatory processes are also essential in promoting social acceptance of legal frameworks. In turn, these processes can greatly reduce future enforcement burdens and better inform both decision-making and the design of REDD+ mechanisms. Building participatory procedures will be fundamental to regulatory success over the long term, as even perfectly designed and implemented REDD+ systems need to adapt to changing circumstances and will require ongoing inputs from key stakeholders to inform such changes.

While participation in REDD+ programmes is often framed in the context of marginalized communities and groups (e.g. indigenous peoples and women), this section focuses on a wider range of stakeholders as defined by the following groups (Daviet, 2011):

- **Government or public sector:** central/ federal, state/regional, or provincial/ district and municipal-level institutions and dependencies;
- **Domestic civil society:** local, national and international NGOs, religious denominations, universities, research institutes, farmer organizations, indigenous peoples' organizations, worker/trade unions, community organizations, and organizations that represent women, youth and other vulnerable groups;
- **Private sector:** firms, associations, organizations, cooperatives, and individual proprietors such as banking, transport, industry, marketing, professional and media services;
- **Rights holders:** property owners, indigenous peoples and tribal groups, communities or individuals who hold traditional or formally recognized usufruct (and/or other) rights to land or resources that will be impacted by the decisions being made;
- **Impacted communities:** individuals and communities who are not rights owners but who may be directly impacted by REDD+ land-use decisions due to their proximity to the activities undertaken. Physical and economic displacement stand out among possible impacts on communities;

- **External community:** international financial institutions, international or regional cooperation agencies, bilateral donors, international charity, NGO and volunteer organizations.

Participatory rights can be grouped into four main categories: **right of access to information**, **right to participate in decision-making**, **right of access to justice** and **right of freedom of expression**. All four rights have been developed across a wide variety of international environmental laws, of which most REDD+ host countries are already parties. Table 1 provides a list of the main international treaties requiring public participation in environmental matters such as REDD+.

See chapter on *Stakeholder Engagement* for more information.

TABLE 1: LIST OF KEY INTERNATIONAL ENVIRONMENTAL TREATIES AFFIRMING PARTICIPATORY RIGHTS

Right of Access to Information	» Int'l Covenant on Civil and Political Rights—Art. 19 » Aarhus Conv. (Europe, Caucasus, Central Asia)—Arts. 5, 6, Art. 4(1) (passive duty) » Universal Declaration of Human Rights—Art. 19 » UNFCCC—Arts. 4 (passive duty), 6 (active duty), see also 12 (national communications) » Kyoto Protocol—Art. 7 (national communications)	» Espoo Conv. on Environmental Impact Assessment in a Transboundary Context—Art. 2 » Conv. on the Protection and Promotion of the Diversity of Cultural Expressions—2(1) » Rio Declaration—Principle 10
Right to Participate in Decision-Making	» Int'l Covenant on Civil and Political Rights—Art. 25 » Universal Declaration of Human Rights—Art. 21 » Aarhus Conv.—Arts. 3, 6 » UN Declaration on the Rights of Indigenous People—Arts. 5, 18, 27 » Int'l Conv. on the Elimination of Racial Discrimination—Art. 5(c)	» Conv. on the Elimination of Discrimination against Women—Arts. 7(b), 14(2) » UNFCCC—Arts. 4(1)(i), 6(a)(iii) » Int'l Labour Organization 169—Arts. 6(a) (b), 7, 15 » Espoo Conv.—Arts. 2(2), 2(6) » Rio Declaration—Principles 10, 22
Right of Access to Justice	» Int'l Covenant on Civil and Political Rights—Arts. 2(3)(a-c), 9, 14, 15 » Aarhus Conv.—Art. 9 » Universal Declaration of Human Rights—Art. 8	» UN Declaration on the Rights of Indigenous People—Arts. 20(2), 28, 40 » Int'l Convention on the Elimination of Racial Discrimination—Arts. 5(a), 6 » Rio Declaration—Principle 10
Right of Freedom of Expression	» Int'l Covenant on Civil and Political Rights—Art. 19 » Universal Declaration of Human Rights—Art. 19	» Conv. on the Protection and Promotion of the Diversity of Cultural Expressions—Arts. 2(1), 7 » Int'l Conv. on the Elimination of Racial Discrimination—Art. 5 (viii)

The **right of access to information** includes a responsibility of states to both respond to public requests for information and publicly disseminate accurate environmental information.[9] Within the context of REDD+, members of the general population should be allowed to provide solicited feedback directly into decision-making processes, as well as indirectly under the right of free expression (e.g. stakeholders or concerned parties providing watchdog functions). In addition, all elements of a national or subnational REDD+ strategy should be made easily accessible to the public, and this information should be made available in relevant languages to account for the needs of IPLCs in remote forest lands (Lyster, 2011). Indonesia recognized this right in 2010 by passing a freedom of information law with extensive input from information advocacy groups. Although several broad categories of information are exempt from the text and the new mechanisms have yet to be implemented, the new law represents an important first step for Indonesia (Simpson, 2010; Anon., 2011).

The **right to participate in decision-making** can be implemented at several levels as follows (from strongest to weakest):

- **Control:** those who possess rights to carbon sequestration benefits and those with original carbon rights who need to be compensated in case of relocation;
- **Consent:** those whose consent is required (i.e. veto power) before changes can be made to forest lands (e.g. those with rights of access or use such as via leasehold or lien);
- **Consultation:** those lacking ownership, control, access or use rights over land (and thus without any veto power) but living nearby or downstream from an activity

such that they need to be consulted for views on proposed activities.

Many forest-dwelling communities whose livelihoods depend on access and use of forests lack official rights to forestland or carbon benefits. For this group, it will be important that REDD+ activities obtain their **free, prior and informed consent** in decisions or when conducting activities that significantly affect the use of their lands in accordance with the principle of FPIC.[10] Originally enshrined in the International Labour Organization (ILO) Convention 169 (ILO, 1989) and the UN Declaration on the Rights of Indigenous Peoples (UNDRIP),[11] FPIC has been codified in several countries' national law in recent years. In Colombia, Afro-Colombian and indigenous communities have the exclusive right to use forest resources within their territories, and FPIC must be undertaken with communities before the state or outside actors may use those resources (Colombia, 2006).

It is also worth noting, however, that to date, FPIC has not been agreed to as a core principle of REDD+ by parties to the UNFCCC, and the precise parameters of when and how it should be required likely will require further refinement in order to make it practical. The process of FPIC is discussed in more detail in the *Social and Environmental Safeguards* chapter.

The **right of access to justice** is essential to uphold stakeholder rights and includes the right to bring a formal case to court and as appropriate to use alternative methods of dispute prevention or resolution.[12] The right of access to justice will be important to those affected by REDD+ activities that wish to bring a formal case or seek to use alternative

dispute resolution mechanisms. A general framework for building an effective grievance mechanism is presented in the *Social and Environmental Safeguards* chapter.

Finally, the right of freedom of expression, although arguably the least direct of the rights outlined here, allows both stakeholders and outsiders not directly engaged as stakeholders the means to express their views and better inform public debate surrounding REDD-related decision-making.

© ALAIN COMPOST / WWF-CANON

WWF VIEWPOINT

Regarding the establishment of rights and tenure, WWF adheres to the REDD+ Five Guiding Principles, which state that "REDD+ should recognize and respect the rights of indigenous peoples and local communities" (Principle 4) and that "REDD+ should provide benefits to local and indigenous communities, such as remuneration for their forest stewardship and empowering them to assert their rights to forest resources" (Principle 3). In the recent WWF report *Community Tenure and REDD+*[13] WWF argues that community land tenure and community rights should be central to the design and implementation of REDD+ (WWF Community Rights and Tenure, 2012), as:

- Tenure security safeguards against risks of involuntary resettlement.
- Tenure status may affect communities' eligibility to participate in REDD+ activities.
- Tenure security supports more effective forest stewardship (and therefore REDD+).

- Tenure supports the exercise of traditional knowledge and practices contributing to REDD+.
- Tenure will substantially influence the distribution of potential benefits from REDD+.
- Carbon rights will also be shaped by underlying forest tenure.
- Formal recognition of rights is often viewed by communities as an important benefit in itself.

Regarding the design and implementation of REDD+ legal frameworks, WWF believes that REDD+ frameworks should be established via a transparent and documented participatory process that reflects prior informed consent of affected forest-dependent peoples.[14]

WWF has many positions regarding the substance of legal reform. These positions can be found in the following chapters of this publication: *Accessing Finance*, *Benefit-Sharing Mechanisms* and *Social and Environmental Safeguards*.

FURTHER RESOURCES

Recommended further reading
Springer, J. and Larson, P.B. 2012. *Community Tenure and REDD+*. WWF, Washington, DC.

Background Analysis of REDD: Regulatory Frameworks. Report prepared for the Terrestrial Carbon Group and UN-REDD Programme. Sydney, Australia.

Legal Frameworks for REDD: Design and Implementation at the National Level. IUCN, Gland, Switzerland. xiii + 194 pp.

Rights and REDD+: Legal and Regulatory Considerations. In: Angelsen, A., (ed.) 2009. Realizing REDD+. *bit.ly/10ILBt9*

BIBLIOGRAPHY

Advocates Coalition for Development and Environment. 2005. *Government's Plan to Degazette Pian Upe Game Reserve and its Implications*. Advocates Coalition for Development and Environment, Kampala, Uganda.

Anon. 2011. *Implementation of FOI Law Found Lacking in Indonesia*. Available at: www.freedominfo.org/2011/02/implementation-of-foi-law-found-lacking-in-indonesia.

Christy, L.C., DiLeva, C.E., et al. 2007. Forest Law and Sustainable Development. *Addressing Contemporary Challenges Through Legal Reform*. The World Bank, Washington, DC, USA, pp 29-31.

Climate Focus. 2012. *Vietnam: Rapid Assessment of the Political, Legal, and Institutional Setting*, Submitted to USAID under the Lowering Emissions in Asia's Forests Project: 31. Climate Focus, Amsterdam, The Netherlands.

Cohen, J.M. and Uphoff, N. 1980. Participation's Place in Rural Development: Seeking Clarity through Specificity. *World Development*, pp 213-235.

Colchester, M., Boscolo, M., et al. 2006. *Justice in the Forest. Rural Livelihoods and Forest Law Enforcement. Forest Perspectives 3*. Center for International Forestry Research, Bogor, Indonesia.

Colombia. 2006. Forest Law. Art. 19.

Costenbader, J. and Veney, M. 2011. *Comparative Analysis of REDD+ Legal Frameworks in Brazil, Democratic Republic of Congo, Mexico, and Indonesia*. GLOBE International Working Paper. GLOBE, Washington, DC, USA.

Cox, G. and Peskett, L. 2010. *Commodifying Carbon to Reduce Deforestation: Lessons from New Zealand*. REDD-Net Background Note. Overseas Development Institute, London, UK.

Cranford, M. and Parker, C. 2012. *Advanced REDD+ Finance*. REDD+ Partnership. Santa Marta, Colombia.

Daviet, F. 2011. *A Draft Framework for Sharing Approaches for Better Multi-Stakeholder Participation Practices*. World Bank FCPF & UN-REDD. Washington, DC, USA.

de Sherbinin, A. 2002. *A CIESIN Thematic Guide to Land-Use and Land-Cover Change (LUCC)*. Columbia University, NY, USA.

Government of Indonesia. 2010. *Draft National REDD+ Strategy*.

ILO. 1989. Convention concerning Indigenous and Tribal Peoples in Independent Countries. 169. ILO, Geneva, Switzerland.

Janki, M. 2009. Case Study: Guyana. *Legal Frameworks for REDD: Design and Implementation at the National Level*. Costenbader, J. IUCN, Gland, Switzerland, pp 151-168.

Kakuru, K. 2011. *Natural Resource Laws undermined in Uganda*. Arbor Vitae, IUCN Forest Conservation Programme. 44: 9. IUCN, Gland, Switzerland

Lyster, R. 2011. *REDD+, Transparency, Participation and Resource Rights: The Role of Law*. Sydney Law School Research Paper. 10(56): 7-8. Sydney Law School, Syndney, Australia.

Rights and Resources Initiative. 2009. *Who Owns the Forests of Africa? An introduction to the forest tenure transition in Africa, 2002-2008*. Rights and Resources Initiative, Washington, DC, USA.

Simpson, B. 2010. *Freedom of Information: Overview—Indonesia's Freedom of Information Law*. Available at: www.freedominfo.org/regions/east-asia/indonesia.

Sunderlin, W., Hatcher, J., et al. 2008. *From Exclusion To Ownership? Challenges and Opportunities in Advancing Forest Tenure Reform*. Rights and Resources Initiative, Washington, DC, USA.

Takacs, D. 2009. *Forest Carbon—Law and Property Rights*. Conservation International, Arlington, VA, USA.

UN-REDD 2012. *Free Prior Informed Consent Guildelines*. UN-REDD, Geneva, Switzerland.

UN-REDD 2012. *UN-REDD Social and Environmental Principles and Criteria*. UN-REDD, Geneva, Switzerland.

UN-REDD and FCPF. 2012. *Guidelines on Stakeholder Engagement in REDD+ Readiness With a Focus on the Participation of Indigenous Peoples and Other Forest-Dependent Communities*. UN-REDD, Geneva, Switzerland.

Vhugen, D., Aguilar, S., et al. 2012. REDD+ and Carbon Rights: Lessons from the Field. USAID, Washington, DC, USA. http://bit.ly/175GJ18

END NOTES

1. Decision 1/CP.16 Appendix I
2. Decision 1/CP.16 paragraph 7
3. Decision 1/CP.16 paragraph 72
4. Decision 1/CP.16 Appendix 1
5. It is also worth noting that forest laws rarely refer to conservation of land as "economically productive" activity.
6. It is not uncommon to find countries where different private, communal or state entities have the right to live in forests, to sell the land and to harvest timber, while others have the right to harvest non-timber forest resources.
7. Noting government ownership claims of 33 per cent in Latin America, 66 per cent in Asia and 98 per cent in Africa
8. In civil law, the concept of usufruct would apply roughly to resource tenure, allowing a right to the fruits of things belonging to others without title to the underlying forest or land. Under common law, the legal theory of profit a prendre provides a similar scheme, whereby various areas or resources within a given piece of land may be allocated to different owners.
9. *See* Rio Declaration, Art 10. See also Aarhus Convention, Arts. 4 and 5 for comprehensive resources on the legal right to information and initiatives under way.
10. FPIC implies that consent must be free of coercion, obtained prior to the commencement of project activities and informed through access to all the information necessary to make the decision, including knowledge of legal rights and the implications of the project.
11. UNDRIP Art. 19 "States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them."
12. Article 8 of the Universal Declaration of Human Rights states that "everyone has the right to an effective remedy by the competent national tribunals for acts violating the fundamental rights granted him by the constitution or by law".
13. awsassets.panda.org/downloads/report___tenur_final.pdf
14. awsassets.panda.org/downloads/wwf_redd2_paper_web.pdf

WWF GUIDE TO BUILDING REDD+ STRATEGIES

REDD+ Governance

SOCIAL AND ENVIRONMENTAL SAFEGUARDS

DOWNLOAD THIS CHAPTER

Key Messages

- Environmental and social safeguards policies and procedures are designed to avoid, mitigate or minimize adverse environmental and social impacts of projects and strategies and to implement those that produce positive outcomes for people and the environment. Safeguards are a cornerstone of technical and financial support for REDD+.

- REDD+ safeguards provide a foundation for delivering non-carbon benefits related to sustainable development. These include strengthening forest governance and management of natural resources, encouraging socially-inclusive participation in policy-making, increasing information transparency, and promoting recognition of the rights of indigenous peoples and local communities (IPLCs) for their territories, lands, natural resources and traditional livelihoods and cultures. These multiple benefits may contribute to improved social, environmental and economic performance and produce more enduring results.

- Discussions about REDD+ social and environmental safeguards must be carried out in a multistakeholder process at the national or subnational level conducted in a transparent, participatory, socially-inclusive manner with respect for gender considerations.

- As the risks associated with REDD+ activities are directly related to the local conditions of each country and each region, the effective involvement of groups that can be directly affected by REDD+ activities—especially indigenous peoples, local communities and smallholders—is critical to defining which safeguards are appropriate.

INTRODUCTION

There is no universally accepted definition of safeguards. Originally the term was coined to label the measures that non-government organizations (NGOs) and other stakeholders demanded from multilateral financial institutions (MFIs) to protect local communities and environments from the potentially negative side effects of development projects. Years later the term was adopted by several multilateral environmental agreements (MEAs).

In general terms, safeguards provide a set of principles and criteria to ensure that a programme, project or activity does not harm local communities and the environment, apply specific rules of engagement for affected parties, and engage in a transparent consultation and participation process in the project planning and implementation process. When safeguard policies were introduced at MFIs and MEAs they also served to push for improvements at the national level in cases where national safeguards were absent or lacking.

If well-designed, REDD+ initiatives could strengthen community land and resource rights, empower community institutions and increase local income through benefit sharing—and also provide incentives to protect biodiversity and ecosystem services. Yet, REDD+ has also sparked concerns about possible adverse impacts on indigenous and community rights and livelihoods, such as restrictions on land and resource rights, increased centralization of forest management and inequitable benefit sharing. Concerns also exist that in absence of environmental safeguards, REDD+ implementation could favour plantations over natural forests and monoculture crops over biologically diverse ecosystems.

Safeguards are intended to protect against social and environmental damage or harm. They help prevent negative environmental and social outcomes as a result of a particular project or policy while also enhancing the multiple benefits in maintaining biodiversity and ecosystem services, strengthening community land and resource rights, empowering community institutions, and enabling sustainable development through benefit-sharing mechanisms. Safeguards cover a broad range of issues in addition to social and environmental impacts, including issues of good governance (e.g. accountability, effectiveness, efficiency, fairness/equity, participation and transparency), respect for rights (e.g. property rights, procedural rights and other human rights, such as the rights of women and indigenous peoples), and sustainability and emissions integrity. Throughout all phases of REDD+ project design and implementation, safeguards allow for risks to be better evaluated, assessed and reduced—and provide a mechanism for consultation and disclosure of information.

INTERNATIONAL POLICY CONTEXT

The UNFCCC is the main standard-setting body for safeguards that countries will have to follow in their implementation of REDD+. Beyond that there are a plethora of initiatives, tools and mechanisms that are or can be used to guide REDD+ implementation, including the World Bank's Strategic Environmental and Social Assessment (SESA) and Environmental and Social Management Framework (ESMF), the CCBA and CARE REDD+ Social & Environmental Standards (REDD+ SES) initiative, and the UN-REDD Programme Social and Environmental Principles and Criteria (SEPC). This section will outline the main decisions and standards emerging under the UNFCCC and provide a short description of other bodies and their role in REDD+ safeguards.

COP 16: Cancun, 2010

At the UNFCCC Conference of parties (COP) 16 in Cancun, developing country Parties wishing to engage in REDD+ activities were asked to develop a "system for providing information on how [safeguards] are being addressed and respected throughout the implementation of [REDD+], while respecting sovereignty".[1] The UN Subsidiary Body for Scientific and Technical Advice (SBSTA) was further asked to develop guidance on safeguard information systems. At COP 16, parties also adopted the following set of social and environmental safeguards for REDD+:[2]

a. That actions complement or are consistent with the objectives of national forest programmes and relevant international conventions and agreements;

b. Transparent and effective national forest governance structures, taking into account national legislation and sovereignty;

c. Respect for the knowledge and rights of indigenous peoples and members of local communities by taking into account relevant international obligations, national circumstances and laws, and noting that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples;

© JENNIFER FERGUSON-MITCHELL/WWF

d. The full and effective participation of relevant stakeholders, in particular indigenous peoples and local communities;

e. That actions are consistent with the conservation of natural forests and biological diversity, ensuring that [REDD+ activities] are not used for the conversion of natural forests but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services and to enhance other social and environmental benefits;

f. Actions to address the risks of reversals;

g. Actions to reduce displacement of emissions.

Safeguard (a) of the Cancun Agreement also specifically states that REDD+ actions "complement or [be] consistent with… relevant international conventions and agreements." In order to adhere to this safeguard, actors must first understand which international conventions and agreements are relevant and what these conventions require. In addition, the remaining six safeguards speak to rights and responsibilities outlined in international instruments. Safeguard (c), for instance, emphasizes "respect for the… rights of indigenous peoples and… local communities", which are outlined in human rights instruments such as the United Nations Declaration on Indigenous Peoples (UNDRIP) and the United Nations Declaration on Human Rights.

COP 17: Durban, 2011

At COP 17 in Durban, parties reached a decision on safeguard information systems.[3] The guidance stated that safeguard information systems should be country-driven and implemented at the national level, be transparent and accessible to all stakeholders, and build on existing systems. Additionally, it was agreed that developing country parties undertaking mitigation activities (referred to in decision 1/CP.16, paragraph 7) should provide a summary of information on how all of the safeguards are being addressed and respected throughout the implementation of the activities.

While civil society called on the parties to develop more specific guidance—including guidance on types of information that SIS should include (Daviet, 2012)—no further discussion on safeguards took place at the 2012 Doha meeting.

UNDRIP

The landmark United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) embraces a comprehensive approach of the duty of states to consult with indigenous peoples on decisions affecting them. Consultation is indeed found throughout the declaration regarding specific concerns and rights of indigenous peoples.[4] It is also affirmed as an overarching principle in Article 19, which asserts: "States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them." Free, prior and informed consent (FPIC) is also based on the right to self-determination.[5]

FPIC refers to the principle that indigenous peoples have a right to give or withhold consent to actions that will affect them, especially actions affecting their lands, territories and natural resources. While FPIC remains a right recognized only by international law to indigenous peoples, it is increasingly recognized that the basic principles underlying FPIC are also relevant to non-indigenous communities (*WWF 2011b*).

CBD

The Convention on Biological Diversity (CBD) has periodically provided guidance to the UNFCCC on ways to maximize biodiversity conservation and the provision of ecosystem services within the implementation of REDD+.[6] In 2010, parties agreed upon a new Strategic Plan for Biodiversity 2011–2020 that includes several targets highly linked to REDD+ activities in order to serve CBD's strategic goal to stop biodiversity loss by 2020[7] (see Table 1).

TABLE 1: CBD AICHI TARGETS 2011-2020 THAT ARE RELEVANT TO THE IMPLEMENTATION OF REDD+ ENVIRONMENTAL SAFEGUARDS

Target 5	Stop deforestation, fragmentation and degradation of forests	*By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced*
Target 7	Achieve sustainable use management of forests	*By 2020 areas under forestry are managed sustainably, ensuring conservation of biodiversity*
Target 11	Protect forests of high biodiversity value and for ecosystem services	*By 2020, at least 17 per cent of terrestrial areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved*
Target 14	Restore and safeguard forest ecosystem services	*By 2020, ecosystems that provide essential services, including services related to water, and that contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities and the poor and vulnerable*
Target 15	Restore forests and contribute to carbon stocks	*By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification*

WEBINAR VIDEO: RELEVANCE OF CONSULTATION AND FPIC TO REDD+

LEARNING SESSION 4

▶

Additionally, a mandate was given at CBD COP 11 in Hyderabad to continue developing advice on indicators for safeguards by CBD COP13 and to deliver a progress report on the enhanced collaboration between the UNFCCC Secretariat and other initiatives in order to support parties in capacity building and compiling information on biodiversity safeguards.

Multilateral finance institutions and voluntary standards

Three safeguard initiatives are most frequently discussed in the international discourse on REDD+ activities: the World Bank's Forest Carbon Partnership Facility (FCPF), UN-REDD Programme's Social and Environmental Principles and Criteria (SEPC),[8] and REDD+ Social and Environmental Standards (REDD+ SES). The remainder of this section will discuss each of these safeguards in more detail. For more information on multilateral finance institutions see the *Accessing Finance* chapter.

Forest Carbon Partnership Facility (FCPF)

The FCPF applies the World Bank's social and environmental safeguards to its REDD+ programmes[9] (although in the future these safeguards may be changed or supplemented by other FCPF procedures). The World Bank's safeguards objective is "to prevent and mitigate undue harm to people and their environment in the development process."[10]

A "Common Approach" to Social and Environmental Safeguards for Multiple Delivery Partners was mandated by the Participants Committee for the FCPF REDD+ Readiness programmes. The Common Approach is designed to provide the World Bank and other FCPF Delivery Partners with a common platform for risk management and quality assurance in the REDD+ readiness preparation process, using the safeguard policies of the World Bank as a minimum acceptable standard. The Common Approach is based on the World Bank's Operational Policies (OP).

These World Bank safeguards were developed for project-based lending and may not be well suited to national (or subnational) REDD+ processes (Moss and Nussbaum, 2011). The potential gaps between the World Bank's Operation Policies and the Cancun Accord include: FPIC, conversion of natural forests, the rights of local communities and respect for traditional knowledge. Where the environmental and social safeguard policies and procedures of a Delivery Partner differ from those of the World Bank and apply to activities undertaken under the FCPF Readiness Fund, Delivery Partners

are required to demonstrate "substantial equivalence" to the "material elements" of the World Bank's existing social and environmental safeguards policies (FCPF, 2011).

The FCPF adopted the use of a Strategic Environmental and Social Assessment (SESA) and the preparation of an Environmental and Social Management Framework (ESMF) to ensure compliance with the World Bank's safeguard policies at the earliest stage of decision-making. A SESA also creates a platform for the participation of key stakeholders, including IPLCs that depend on forest resources. The ESMF is a key output of the SESA and is intended to form the foundation of the overall safeguards approach for the implementation of a country's REDD+ strategy.

In addition to complying with the operation policies cited above, application of the Common Approach involves adherence to four sets of guidelines:

- Guidelines and Generic Terms of Reference for Strategic Environmental and Social (SESAs) and Environmental and Social Management Frameworks (ESMFs);
- FCPF/UN-REDD Guidelines on Stakeholder Engagement in REDD+ Readiness;
- FCPF Guidance on the Disclosure of Information;
- FCPF Guidelines for Establishing Grievance and Redress Mechanisms at the Country Level.

NATIONAL AND SUBNATIONAL OPTIONS

A country-level or subnational REDD+ safeguard system can be thought of as comprising three major elements (REDD+SES, 2012):

- **Policies, laws and regulations** that state the objectives and the instruments to safeguard communities and environments from possible negative impacts of REDD+ and improve their opportunities to benefit from it;
- **Grievance and redress mechanisms** that enable stakeholders affected by REDD+ to receive feedback and appropriate responses related to the implementation of safeguards;
- **Safeguard information systems (SIS)** that collect and provide information on how safeguards are being addressed and respected.

These core components are supported by institutions and processes and procedures that are essential to operationalize them.

FOCUS

UN-REDD PROGRAMME

UN-REDD's interpretation of environmental safeguards[11] is "the adoption and integration of precautionary environmental and social principles and considerations into decision making processes. The objective of such safeguards is to prevent and mitigate undue harm to the environment and people at the earliest possible planning stage. Safeguards can appear as a combination of minimum standards and best practice guidelines" (Moss and Nussbaum, 2011). The UN-REDD programme has established Social and Environmental Principles and Criteria (SEPC) as a guiding framework to (1) address social and environmental issues in UN-REDD National programmes and other UN-REDD Programme-funded activities and (2) to support countries in developing national approaches to REDD+ safeguards in line with UNFCCC.

The SEPC includes all the Cancun safeguards and provides significant further detail to the conditions for meeting them in addition to elements not specified in the Cancun safeguards, including: transparency and accountability of fiduciary and fund management systems; gender equality; free, prior and informed consent of indigenous peoples; no involuntary resettlement; equitable benefit sharing; and avoidance or minimization of natural forest degradation. These additional provisions in the SEPC aim to help countries meet their commitments to relevant UN conventions, treaties and declarations, beyond the UNFCCC.

The UN-REDD Programme and FCPF have collaborated to produce the joint Guidelines on Stakeholder Engagement in REDD+ Readiness with a Focus on Indigenous Peoples and Other Forest-Dependent Communities. The joint guidelines provide background and context on the inclusion of indigenous peoples and other forest-dependent communities in REDD+ and were developed to guide countries in their work on stakeholder engagement in REDD+ in activities supported by both or either initiative.

UN-REDD+ has further engaged in a consultative process to produce UN-REDD Programme Guidelines on Free, Prior and Informed Consent (FPIC), in support of the right to FPIC in partner countries. The main objective of the guidelines is to provide a normative, policy and operational framework for UN-REDD Programme partner countries to seek FPIC, as and when appropriate, as determined by the Programme partner country in consultation with relevant rights-holders.

UN-REDD also recognizes that neutral and fair mechanisms for grievance, conflict resolution and redress must be established and accessible during the design and implementation of REDD+ policies and activities. Along with FCPF, UN-REDD has the most developed publicly available policy about grievance mechanisms.

FOCUS

REDD+ SOCIAL AND ENVIRONMENTAL STANDARDS

© JULIE PUDLOWSKI / WWF

The REDD+ Social and Environmental Standards (REDD+ SES) were developed through a multi-stakeholder process, facilitated by the Climate, Community and Biodiversity Alliance (CCBA) and CARE International.[12] The standards aim to build support for government-led REDD+ programmes implemented at the national or subnational level (Moss and Nussbaum, 2011).

The current REDD+ SES version consists of *principles, criteria and indicators* (REDD+ SES, 2012).

- Principles provide the key objectives that guide high social and environmental performance of REDD+ programmes.

- Criteria define the conditions that must be met related to processes, impacts and policies in order to deliver the principles.

- Indicators define quantitative or qualitative information needed to show progress toward achieving a criterion. Each of the framework indicators aims to assess one aspect that is important to address in order to achieve the criterion. The indicators fall into three main categories:

 › Policy indicators assess policies, strategies, legal frameworks and institutions related to the REDD+ programme that should be in place.

 › Process indicators assess whether and how a particular process related to the REDD+ programme has been planned, established and implemented.

 › Outcome indicators assess the impacts of the REDD+ programme.

Goal setting

In order to establish safeguard systems, countries will need to go through a process of goal setting and an assessment of existing safeguards for REDD+ (REDD+SES, 2012). This must be carried out with government leadership and through a multi-stakeholder process that defines the safeguard priorities by identifying the relevant stakeholders, including related risks, costs, burdens and benefits incurred by these groups, and establishing why the safeguards are needed, for example, in response to international commitments such as the UNFCCC safeguards and those required by donors as well as development priorities and stakeholder concerns within the country.

Tools that are useful in defining the goals of a country's safeguards approach are the Social and Environmental Principles and Criteria (SEPC) and UN-REDD's guidelines (the UN-REDD/FCPF Stakeholder Engagement Guidelines and UN-REDD FPIC Guidelines). The SEPC provides more detailed criteria that can be used to unpack the Cancun safeguards. The UN-REDD and FCPF provide guidance

on how to ensure the participation of indigenous peoples and other forest-dependent communities in REDD+ schemes, including how to apply the principle of FPIC.

Once the country-specific goals for safeguards are defined, the next steps for development of the safeguards system are to conduct a review and gap analysis of existing policies, laws, regulations, institutions and procedures leading to development of new ones as needed and a similar process for establishment of the grievance redress mechanism and the SIS. The elements of the safeguards system are developed by building from and strengthening any relevant existing elements already established in the country and developing new elements as needed. All of these elements require a transparent and participatory process.

Participation in the development of safeguards

The development of REDD+ social and environmental safeguards should be based on a multi-stakeholder process conducted at the national or subnational level in a transparent, participatory and socially-inclusive manner with respect for gender considerations.

In Brazil, this process was led by civil society and was overseen by a multi-stakeholder committee made up of representatives of the private sector, environmental organizations, indigenous peoples, local communities and smallholders, large agricultural producers and research institutions with projects in the Amazon Region. Notably, a decision was made not to include any government representative in the committee; however, government agencies involved in the subject were kept informed about the progress of the safeguard development process (*Bonfante,*

Voivodic and Filho—Piracicaba, 2010). The Brazilian social and environmental safeguards for REDD+ are considered minimum requirements for any REDD+ initiative in the Brazilian Amazon that is developed, financed and implemented by any combination of governments, private entities (including carbon market-based mechanisms) and civil society organizations. These safeguards can be applied to national and subnational government-led programmes as well as projects (Gomes et al., 2010). The Brazilian experience provides a best-practice methodology for a participatory development of social and environmental criteria. This process has been documented in Developing Social and Environmental Safeguards for REDD+: A guide for a bottom-up approach (*Bonfante, Voivodic and Filho—Piracicaba, 2010*).

In Indonesia, the process of developing and implementing safeguards is government-led. A draft of social and environmental safeguards and a safeguards system was developed by the National REDD+ Task Force and was complemented by input from academia, NGOs and government agencies. The task force then identified several pilots for testing the system.

Capacity building for effective participation

As demonstrated in the experience in Brazil, the engagement of indigenous peoples, local communities, small-landholders and social movements is crucial to ensuring the effectiveness of safeguards by incorporating the main concerns of the people who live in and depend on the forest.

Capacity building of indigenous and local communities and their organizations is widely recognized as a key foundation for securing the opportunities that REDD+ may provide and addressing its risks, contributing to more equitable and sustainable REDD+ initiatives.

Capacity building helps support a number of priorities of indigenous peoples and local communities with regard to REDD+. These include:

- **Understanding** climate change, its impacts, what REDD+ is, and the potential benefits and risks of REDD+ initiatives;
- **Participating** fully and effectively in development of REDD+ programmes/ strategies at multiple levels (village, subnational, national, international);
- **Deciding** whether or not to participate in REDD+ activities, in keeping with rights to free, prior and informed consent;
- **Managing** activities that will generate reduced emissions from deforestation and degradation;
- **Monitoring** results of REDD+ activities, as part of monitoring, reporting and verification (MRV) of REDD+ climate, social and biodiversity impacts.

WEBINAR VIDEO: ENSURING SOCIAL SAFEGUARDS IN REDD+
LEARNING SESSION 8

Recognition of the importance of community capacity building for successful REDD+ has prompted development of a range of training materials for indigenous and local communities. These community-oriented materials aim to present complex issues concerning global climate change and developments in international climate policy and financing in ways that will (a) be accessible to rural communities; (b) inform indigenous communities in particular of the opportunities and protections afforded to indigenous peoples in their engagements with REDD+ initiatives; (c) provide information on both potential opportunities and risks associated with REDD+; and (d) promote best practices for the information-sharing element of free, prior and informed consent. For more information, see the WWF resource guide *Capacity Building Materials on REDD+ for Indigenous Peoples and Local Communities*.

FPIC is increasingly recognized as a best practice in conservation and development for avoiding conflicts and grounding activities in equitable agreements with indigenous as well as non-indigenous communities. Accordingly, several soft-law instruments call for forest-dependent communities to be consulted if a REDD+ programme or project is going to be implemented on land that they inhabit, use or access for subsistence or livelihood activities. These instruments include: the World Bank Operational Guidelines on Involuntary Resettlement, UN-REDD draft Social and Environmental Principles and Criteria, UN-REDD draft Guidelines for Seeking the Free, Prior and Informed Consent of Indigenous Peoples and Other Forest-Dependent Communities, and the Climate Community and Biodiversity Alliance

(CCBA)-CARE Voluntary REDD+ Social and Environmental Standards.

Practical methodologies for FPIC are still evolving and need to be specific to local cultures and contexts. However, a number of recent publications have outlined general procedures for FPIC, including as a resource for ensuring that rights to FPIC are respected and supported, including guidance from RECOFTC/GIZ, Oxfam and the Forest Peoples Programme and WWF's Resource Guide on "Free, Prior, Informed Consent and REDD+: Guidelines and Resources", which outlines a general set of procedures for use by WWF programmes working on REDD+ (WWF, 2011b). For further guidance, the UN-REDD Programme's "Guidelines on Free, Prior and Informed Consent (FPIC)" outlines

© JULIE PUDLOWSKI / WWF

a normative policy and operational framework for seeking and obtaining FPIC in the context of REDD+.

Policies, laws and regulations

When developing national and subnational safeguards, countries should consider their national legal and institutional frameworks in defining safeguard goals that align with national development priorities along with their commitments to international treaties and the requirements of multiple delivery partners and REDD+ funding sources. This involves translating to the local context the unspecific decisions and guidance from UNFCCC on safeguards. Several countries (including Brazil, Ecuador, Indonesia, DRC and Mexico) are making progress in developing such safeguard policy frameworks. This process engages representatives of government and civil society to determine which safeguard goals will be important for REDD+ in their national context and how to implement them.

There are several approaches to building policies, laws and regulations for safeguards (Swan and McNally, 2011). A national starting point begins with an assessment of existing REDD+ relevant safeguard policies and measures, such as national forestry and agricultural sector strategies, land tenure legislation, protected area strategies and indigenous people's policies, adapted by the country and comparing these with international safeguard requirements to understand the gaps and weaknesses. Alternatively, countries may wish to begin by adopting or adapting an existing multilateral or voluntary international safeguards (e.g. CCB) framework. This framework would be expanded according to national priorities and existing

in-country policies and procedures. Selection of the base international framework would require comparative analysis of the various options against criteria determined by national stakeholders based on their different values and perspectives. Moreover, selection may depend on the country's participation in international initiatives (e.g. FCPF or UN-REDD).

These options are not mutually exclusive and can be combined. A hybrid approach would begin with identifying key elements of existing international safeguard frameworks relevant for the country in terms of content (what are the main environmental and social risks posed by REDD+) and commitment (what is the level of environmental and social performance to aim for).

A crucial step in all of these options is the in-country analysis of major risks and envisaged benefits specific to that country context. A risk-benefit assessment would inform development of the identified key elements into a national set of safeguards, which would cover the major risks and envisaged benefits as identified by in-country stakeholders and ensure minimum safeguard compliance.

Several tools are available to help countries assess and plan to avoid or mitigate risks. Environmental and social management frameworks (ESMFs), for instance, can aid in the process of creating national risk management plans. Countries receiving funding from the FCPF are required to create ESMFs as part of their SESA processes. At the more local level, most funding institutions require some form of social and environmental plan in association with investments in

SNAPSHOT CASE STUDY

A MULTI-STAKEHOLDER INITIATIVE TO DEVELOP REDD+ SAFEGUARDS IN BRAZIL

To view more Inspiring Practice case studies, visit bit.ly/REDDlearn

© NIGEL DICKINSON / WWF-CANON

Context
Following the emergence of REDD+ as a promising financing alternative at the 2007 UNFCCC conference in Bali, development of numerous REDD+ projects and state-level policies began independently in the Brazilian Amazon, without a guiding policy framework at the national level (a situation that has continued into 2013). Regionally based social groups started claiming a voice in REDD+ discussions at various levels. Their primary concern was the potential social and environmental risks associated with REDD+.

In late 2009, representatives from 15 organizations—including grassroots organizations, social and environmental NGOs, research institutions and the private sector—decided to develop guidelines for REDD+ social and environmental safeguards.

These guidelines would:

- Involve multiple stakeholders;
- Influence state and federal regulations under discussion;
- Develop minimum social and environmental criteria (safeguards) to serve as a reference for REDD+ projects and programmes in Brazil;
- Not be a new certification standard.

Expected changes

- Strengthen forest governance and management of natural resources by indigenous peoples and local communities;
- Encourage public participation in the policy-making process;
- Coordinate action among all stakeholders involved;
- Increase information transparency;
- Generate respect for and awareness and recognition of the rights of indigenous peoples and local communities for their territories, lands, natural resources, and traditional livelihoods and cultures.

Achievements
The participants began this work by electing a smaller oversight committee representing diverse sectors and a facilitator from a single organization (IMAFLORA, Institute for Agriculture and Forest Certification and Management). Based on a review of the pertinent literature, the facilitator developed a first draft that was reviewed by the oversight committee and then subjected to a process of public consultation. This process took place over a period of 150 days, during which the draft was placed on the Internet for public comments. In addition, the oversight committee organized four meetings with over 150 participants representing social groups in the Amazon and one meeting with representatives from over 40 companies in São Paulo. Each 3-day meeting in the Amazon included two days of capacity building and a final day focused on discussing safeguards. To assure transparency and traceability, all comments about the guidelines made during these meetings were registered, identified by source and posted on the Internet.

- The oversight committee reviewed and provided answers to all the comments (which were also posted together with the comments on the Internet) and, based on the input provided, prepared a final draft of the guidelines, which consist of seven general principles and 29 associated criteria.
- These guidelines have been presented to the federal and state governments for the purpose of incorporating safeguards in new regulations. They have also been presented to designers of and participants in REDD+ projects, to obtain public commitments to adhere to safeguards.

Challenges
The challenge still remains to empower indigenous peoples and local communities to a position from which they can make critical decisions on any carbon project within their forested territories in order to prevent companies or state interests from taking advantage of them, buying credits through unjust purchase contracts and disrespecting their rights.

Lessons learned
If the bottom-up public consultation approach is adopted for the development of safeguards for REDD+ in different realities and at different levels in the world, REDD+ policies will be developed with greater governance and social and environmental justice.

* To facilitate application and adaptation to other contexts, details about this consultation process have been published in English, Spanish, Portuguese and French and are available at: www.observatoriodoredd.org.br

project-level activities. These usually include environmental management plans, indigenous peoples plans, and/or resettlement plans. In addition, pre-existing domestic rules, such as EIA laws and poverty alleviation strategies, may be useful for supporting REDD+ safeguard planning processes. After plans to avoid harm and produce benefits are identified and included in strategy documents, work plans, and other relevant country processes, these plans must be implemented. Such implementation can entail various types of activities, including distribution of information, hosting of consultations, passage of new regulation, creation of new institutions, and ensuring that the interest of local communities is respected.

An analysis of policies, laws and procedures should also include an assessment of tenure, including challenges and opportunities to address tenure issues in REDD+ contexts and consideration of how tenure issues are treated in emerging REDD+ frameworks. Tenure can be defined as a "bundle of rights" that may include various combinations of access rights, withdrawal rights, management rights, exclusion rights and alienation rights (*Schlager and Ostrom, 1992*). Both customary and statutory tenure systems are often composed of complex combinations of these rights, which may also vary across the specific geographical area or natural resource to which they refer. In the context of REDD+, carbon has become another resource for which rights need to be clarified. Customary tenure refers to systems derived from traditional or ancestral occupancy and use of lands and resources while statutory tenure refers to rights formally enshrined in the laws of a state. Historically, many customary and statutory systems have been overlapping.

Recognizing and respecting customary rights to lands, territories and resources promotes effective stewardship of forests and safeguards against potential displacement risks. Furthermore, rights to lands and resources will also determine who is eligible to benefit from REDD+. Securing community forest tenure is fundamental to ensuring REDD+ benefits reach communities. Community tenure broadly refers to the diversity of tenure systems found in a given community (including both communal and individual property) while tenure security refers to certainty that rights to land are recognized, respected and protected (Springer and Larsen, 2012). WWF's report "Community Tenure and REDD+" discusses key elements of equitable and effective tenure systems that can provide a foundation for community-based REDD+ and how community tenure can be promoted and supported in the context of REDD+ processes (Springer and Larsen, 2012).

Grievance and redress mechanisms

Grievance, conflict and redress mechanisms are designed to receive, assess and resolve complaints of directly affected stakeholders, in this case related to REDD+ implementation with a view to taking corrective action. Typically, these mechanisms focus on flexible approaches to resolving disputes through options such as fact-finding, dialogue, facilitation or mediation. A well-designed grievance mechanism should offer:

- Improved responsiveness to concerns;
- Early identification of problems;
- Increased trust, accountability and credibility among stakeholders;
- Easy and reliable access;

- Clear communication of process and service standards to users;
- Quick resolution of complaints;
- Expeditious communication of results to complainants;
- Availability of options related to mediation and conciliation;
- The possibility of accessing judicial mechanisms if users are not satisfied with the outcomes of the mediation offered by the grievance and redressing mechanism.

There are five basic building blocks to design an effective grievance mechanism (World Bank, 2011):

- **Organizational commitment:** The implementing institution recognizes and values the grievance process as a means of strengthening public administration, improving public relations, and enhancing accountability and transparency.

- **Principles:** An effective grievance and redressing mechanism usually embodies six core principles: fairness, objectiveness and independence, simplicity and accessibility, responsiveness and efficiency, speed and proportionality, and participatory and social inclusion.

- **People:** The project provides training to the staff working on grievance redress so they can effectively carry out their roles.

- **Processes:** Grievance redress processes play an important role in project activities.

- **Analysis:** Project management regularly analyses reports and other monitoring and evaluation data on grievances.

Grievance mechanisms can be built at multiple levels.

© JULIE PUDLOWSKI / WWF

Safeguard information systems

Countries undertaking REDD+ activities need to develop country-level SIS that enable them to respond to requirements under the UNFCCC to ensure social and environmental risks are minimized and benefits enhanced. As outlined above, REDD+ countries may also need to respond to the requirements of organizations providing support for REDD+ activities. SIS provide a systematic approach for collecting and reporting information on how REDD+ safeguards are being addressed and respected throughout the implementation of REDD+. While the specific design of SIS will vary between countries, all SIS are likely to include the following components (Peskett and Todd, 2012):

- Criteria and indicators to determine whether a particular policy, law or regulation is being effectively implemented. The indicators provide the parameters for determining what information needs to be collected;

- Methodologies for collection of information for each indicator, by whom, how and how often the information collection should be carried out (e.g. sample size, frequency, etc.);

- Framework for provision of information and how information is shared and made public and what consequences arise.

A REDD+ SIS could be built on existing country systems, such as those to monitor and report on biodiversity conservation under the CBD; or countries may develop other appropriate systems.

Collection of data at the national level could focus on the data that the country needs to alert authorities when safeguards are not being applied, to collect data that could be used for compliance actions, or to make adjustments to the policy design to more effectively achieve the programme's social and governance policies and procedures.

Nepal's National Forest Management Information System (NAFIMS) is being designed to monitor and report on the non-carbon aspects prioritized for monitoring over the course of REDD+ implementation. These aspects are key quantitative and/or qualitative variables related to livelihood enhancement, biodiversity conservation, ecosystem services provision, key governance factors pertinent to REDD+ implementation, and impacts of the REDD+ strategy on the forestry sector. The system will also be reporting on how the safeguards are being addressed and respected in the course of implementation of REDD+ activities, with due attention to the specific monitoring provisions included in country's ESMF (Ministry of Forests and Soil Conservation, 2012).

WWF VIEWPOINT

Social and environmental safeguards are prominently reflected in the REDD+ Five Guiding Principles that were originally developed by WWF, CARE and Greenpeace. These include:

- **Climate:** REDD+ demonstrably contributes to greenhouse gas emission reductions with national goals working toward a global objective.

- **Biodiversity:** REDD+ maintains and/or enhances forest biodiversity and ecosystem services.

- **Livelihoods:** REDD+ contributes to sustainable and equitable development by strengthening the livelihoods of forest-dependent communities.

- **Rights:** REDD+ recognizes and respects the rights of indigenous peoples and local communities.

- **Fair and Effective Funding:** REDD+ mobilizes immediate, adequate and predictable resources for action in priority forest areas in an equitable, transparent, participatory and coordinated manner.

WWF has elaborated further on the REDD+ guiding principles focused on rights and livelihoods to identify the following key issues for equitable and effective REDD+ initiatives:

- **Full and effective participation:** Full and effective participation of indigenous peoples and local communities in developing, implementing, monitoring and evaluating REDD+ programmes at multiple levels (local, subnational, national, international)—including with respect for gender considerations—requires both capacity building, to ensure that communities are well informed about potential benefits and risks, and processes that enable involvement of relevant rights-holders and stakeholders.

- **Free, prior and informed consent (FPIC):** WWF's Statement of Principles on Indigenous Peoples and Conservation recognizes the right of indigenous peoples to free, prior and informed consent (FPIC) from governments on projects affecting their customary lands and resources and states that WWF will not promote or support interventions affecting customary lands and resources that have not received FPIC.

- **Secure community forest tenure:** Recognizing and respecting customary rights to lands, territories and resources can support more effective stewardship of forests and safeguard against potential displacement risks. Clear rights to lands and resources will also significantly influence who ultimately receives any future benefits from REDD+. Therefore, securing community forest tenure—with attention to gender differences—is fundamental to ensuring that REDD+ benefits reach communities.

- **Equitable sharing of REDD+ benefits:** REDD+ initiatives could provide additional streams of income to communities, which could help make the conservation and sustainable use of forests more valuable than other land uses to communities. Realization of these benefits will depend upon funding strategies that prioritize incentives for forest community men and women, many of whom are the historic stewards of natural resources, as well as on good governance of financial mechanisms (including within communities) to ensure that benefit sharing is equitable and transparent.

WWF has also advocated strongly for environmental safeguards. In developing the REDD+ guiding principle on biodiversity, WWF is advocating:

- Zero net deforestation and forest degradation by 2020[13]: WWF stresses that: (a) most natural forests should be retained—the annual rate of loss of natural or semi-natural forests should be reduced to near zero; and (b) any gross loss or degradation of pristine natural forests

would need to be offset by an equivalent area of socially and environmentally sound forest restoration. In this accounting, plantations are not equated with natural forests as many values are diminished when a plantation replaces a natural forest.

- Forest biodiversity related CBD targets: WWF's view is that these targets must be supported by REDD+ national and subnational strategies and plans. (see Table 1).

WWF also has developed safeguards alongside its preparations for Global Environmental Facility (GEF) accreditation and policies on involuntary resettlement, gender, etc.

FURTHER RESOURCES

Publications

Free, Prior, and Informed Consent in REDD+—*Patrick Anderson, February 2011— RECOFTC and GIZ* | Guidelines for Seeking the Free, Prior, and Informed Consent of Indigenous Peoples and other Forest Dependent Communities UN-REDD+ Programme 2012.

Colchester, M. 2010. *Free, Prior and Informed Consent—Making FPIC Work for Forests and Peoples*. The Forest Dialogue, New Haven, CT, USA. *bit.ly/1c9K5Ht*

Scoping Dialogue on Free, Prior, and Informed Consent, available at: *environment.yale.edu/tfd/dialogue/free-prior-and-informed-consent/scoping-dialogue-on-free-prior-and-informed-consent*

Field Dialogue on FPIC in Indonesia, available at: *environment.yale.edu/tfd/dialogue/free-prior-and-informed-consent/free-prior-and-informed-consent-indonesia-field-dialogue*

Hill, C., Lillywhite, S., and M. Simon. 2010. *Guide to Free, Prior and Informed Consent*. Oxfam, Victoria, Australia. *bit.ly/1bAMAzE*

Anon. 2008. *Free, Prior, Informed Consent and the Roundtable on Responsible Palm Oil*. Forest Peoples Programme, Moreton-in-Marsh, UK. *bit.ly/1a3thNl*

Colchester, M., Ferrari, M.F. 2007. *Making FPIC—Free, Prior and Informed Consent— Work: Challenges and Prospects for Indigenous People*. Forest Peoples Programme, Moreton-in-Marsh, UK. *bit.ly/173MF9O*

Epple, C., Dunning, E., Dickson, B., C. Harvey. 2011. *Making Biodiversity Safeguards for REDD+ Work in Practice. Developing Operational Guidelines and Identifying Capacity Requirements* (Summary Report). UNEP-WCMC, Cambridge, UK. *bit.ly/173Nu2v*

GEO BON. 2011. *Adequacy of Biodiversity Observation Systems to support the CBD 2020 Targets. A report prepared by the Group on Earth Observations Biodiversity Observation Network*. Pretoria, South Africa. *bit.ly/1ho9tqG*

Greenpeace. 2012. *Forest & People First: the Need for Universal REDD+ Safeguards*. Greenpeace International, Amsterdam, Netherlands. *bit.ly/1aPksI8*

Pistorius, T., Schmitt, C.B., Benick, D., and S. Entenmann. 2010. *Greening REDD+: Challenges and opportunities for forest biodiversity conservation*. University of Freiburg, Freiburg, Germany. *bit.ly/1907b6a*

SCBD. 2011. *REDD+ and Biodiversity*. Montreal, Technical Series No. 59, 68 pages. Available at: *www.cbd.int/ts*

Daviet, F. and Larsen, G. 2012. *Safeguarding Forests and People: A Framework for Designing a National Safeguards System*. WRI, Washington, DC, USA. *bit.ly/18TNKWB*

Walter, M. and Kahlert, G. 2010. *Forest Carbon Standards—WWF Assessment Guide*. WWF-Germany, Berlin, Germany. *bit.ly/GBt9MC*

BIBLIOGRAPHY
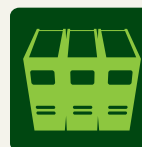
BONFANTE, T.M., VOIVODIC, M. and FILHO—PIRACICABA, L.M. 2010. *Developing Social and Environmental Safeguards for REDD+: A guide for bottom-up approach*. Imaflora.

DAVIET, F. 2012. *Making the Most of a Second Chance: What Next for REDD+ Safeguards?* [Online]. Available: insights.wri.org/news/2012/02/making-most-second-chance-what-next-redd-safeguards

GOMES, R., BONE, S., CUNHA, M., NAHUR, A. C., MOREIRA, P. F., MENESES-FILHO, L. C. L., VOIVODIC, M., BONFANTE, T. and MOUTINHO, P. 2010. *Exploring the Bottom-up Generation of REDD+ Policy by Forest-dependent Peoples. Exploring the Right to Diversity in Conservation Law, Policy, and Practice*. Available at: www.ipam.org.br/publications

MINISTRY OF FORESTS AND SOIL CONSERVATION. 2012. *Framework Structure National REDD-plus Strategy of Nepal*. Babarmahal, Kathmandu.

MOSS, N. and NUSSBAUM, R. 2011. *A Review of Three REDD+ Safeguard Initiatives*. Forest Carbon Partnership Facility and UN-REDD Programme, Geneva, Switzerland.

PESKETT, L. and TODD, K. 2012. Putting REDD+ *Safeguards and Safeguard Information Systems Into Practice*. In: UN-REDD (ed.) UN-REDD Programme Policy Brief. UNDP. New York, NY, USA.

REDD+ SES. 2012. *REDD+ Social and Environmental Standards (version 2)*. REDD+ SES, Washington, DC, USA. bit.ly/1dYknn7

ROE, S., STRECK, C., PRITCHARD, L. and J. COSTENBADER. 2013. *Safeguards in REDD+ and Forest Carbon Standards: A Review of Social, Environmental and Procedural Concepts and Applications*. Climate Focus, Washington, DC, USA. bit.ly/1hoe2Bv

SCHLAGER, E. and OSTROM, E. 1992. Property-Rights Regimes and Natural Resources: A Conceptual Analysis. *Land Economics*, 68(3). University of Wisconsin, Madison, Wisconsin, USA. bit.ly/1a3CJAu

Springer, J. and Retana, V. 2013 in prep. *Free, Prior, Informed Consent and REDD+* (updated version). WWF, Washington, DC, USA. To be available at: bit.ly/WWF-REDDpubs

Springer, J. and Larsen, P.B. 2012. *Community Tenure and REDD+*. WWF, Washington, DC. Available at: bit.ly/WWF-REDDpubs

SWAN, S. and MCNALLY, R. 2011. High-Biodiversity REDD+: Operationalising Safeguards and Delivering Environmental Co-benefits.SNV, The Hague, The Netherlands.

UN-REDD PROGRAMME. 2013. Guidelines on Free, Prior and Informed Consent (FPIC). UN-REDD, Geneva, Switzerland.

WORLD BANK 2011. *Feedback Matters: Designing Effective Grievance Redress Mechanisms for Bank-Financed Projects*. World Bank, Washington, DC, USA.

Springer, J. 2011. Capacity Building Materials on REDD+ for Indigenous Peoples and Local Communities. WWF, Washington, DC, USA. bit.ly/17yw8iw

END NOTES

1. See UNFCCC Section III C of Decision 1/CP.16
2. Appendix I of Decision 1/CP.16.
3. Decision 12/CP.17.
4. See UNDRIP Articles 10, 11, 15, 17, 19, 28, 29, 30, 32, 36 and 38
5. The United Nations Declaration on the Rights of Indigenous Peoples affirms in its Article 3 that "indigenous peoples have the right to self-determination.
By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development".
6. See CBD Decision IX/16, Decision X/33, Decision X/2 and Decision XI/19.
7. Decision X/2.
8. It should be noted that while FCPF's safeguards are mandatory, SEPC is voluntary.
9. web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/ EXTPOLICIES/EXTSAFEPOL/0,,menuPK:584441~pag ePK:64168427~piPK:64168435~theSitePK:584435,00. html.
10. go.worldbank.org/WTA1ODE7T0
11. www.un-redd.org/multiple_benefits_sepc/tabid/54130/ default.aspx
12. www.redd-standards.org
13. Zero Net Deforestation and Forest Degradation (ZNDD): WWF defines ZNDD as no net forest loss through deforestation and no net decline in forest quality through degradation. ZNDD provides some flexibility: it is not quite the same as no forest clearing anywhere, under any circumstances. For instance, it recognizes people's right to clear some forests for agriculture, or the value in occasionally "trading off" degraded forests to free up other land to restore important biological corridors, provided that biodiversity values and net quantity and quality of forests are maintained.

WWF GUIDE TO BUILDING REDD+ STRATEGIES

REDD+ Governance

STAKEHOLDER ENGAGEMENT AND PARTICIPATION

DOWNLOAD THIS CHAPTER

Key Messages

- Effective stakeholder participation in the design and implementation of a REDD+ strategy seeks to ensure that the strategy respects and addresses the rights and priorities of all stakeholders and delivers significant environmental, financial and social benefits.

- Stakeholder participation requires capacity building of all actors on such key issues as processes through which governments can engage with forest-dependent indigenous peoples and local communities (IPLCs), technical knowledge about REDD+, the rights and livelihoods of IPLCs, and how these should be part of REDD+ decision-making.

- REDD+ stakeholder engagement and participation provide an approach to develop REDD+ from the bottom up, allowing for local, customary, traditional and gender-specific knowledge of natural resources and their uses, to be incorporated into REDD+ activities and processes.

- While a participatory stakeholder engagement process may take time and require negotiating conflicting interests, the investment in this process pays large dividends and supports the delivery of a robust and successful REDD+ strategy.

INTRODUCTION

Successful REDD+ strategies are designed to embrace a range of conservation, development, economic and governance objectives in order to resolve the often competing interests for forest and land resources.[1] Engaging with myriad stakeholders through their REDD+ programmes, governments and states can address the sometimes differing degrees of control and influence over forest resources, institutional processes and programme outcomes, as well as knowledge and information. Specifically, informed participation and direct consultations with stakeholders whose lifestyles and livelihoods[2] are linked to forests will also increase the success of resolving key forest governance issues, such as land tenure, decentralization, community forest regulations, and carbon and forest property rights—so that social and financial benefits from forest resources can be maximized.

In this guide we define "stakeholders" as those groups or individuals that have a stake, interest and/or right in resources or processes related to REDD+ programmes and activities. Stakeholders include rights holders, government agencies, civil society, private-sector entities, academia, and forest-dependent indigenous peoples and local communities (IPLCs) at various levels. Engagement and full participation of a broad range of relevant actors are core building blocks of a REDD+ strategy.[3] The *processes* through which these actors are engaged at various levels, as well as methodologies to ensure effective stakeholder participation, are presented in this chapter. For more information related to this issue, see the *Social and Environmental Safeguards* chapter.

REDD+ stakeholder engagement processes are also a means to ensure the effective participation and protection of the rights, livelihoods and lifestyles of forest-dependent groups. These groups often include legal and/or customary rights holders,[4] such as IPLCs, the rural poor and women. These stakeholders may not necessarily be engaged in public decision-making processes regarding natural resource management and use, yet they all contribute to forest protection and depend on forests for their social and economic livelihoods as well as their cultural and spiritual well-being. At the same time, given their traditional knowledge of and relationship with the forest, and their presence on the ground, IPLCs, the rural poor and women have a unique role to play in developing a REDD+ strategy. As part of this, the information sharing of their unique traditional and gender-specific knowledge of natural resources and their uses can strengthen a REDD+ strategy.

Different types of stakeholders will be engaged in different ways in the various stages of the project through such actions as: information sharing, consultation, collaboration, joint decision making and empowerment (see *Table 1*). Different types of engagement may be more appropriate depending on the objectives and desired outcomes of the participation process and the stakeholders being engaged.

The mechanisms and procedures for facilitating engagement will also vary, depending on the stakeholders involved, to ensure that these stakeholders are able to access information and fully and effectively participate in REDD+ decision-making processes. Building capacity in stakeholders to understand

technical issues related to REDD+ and how these affect their rights and livelihoods is an important part of effective stakeholder engagement. In addition, addressing barriers to stakeholder participation in decision-making forums (e.g. financial resources, language, time, transportation and gender norms, such as women's household and childcare responsibilities) is crucial to ensuring full and effective stakeholder participation. It is equally important that the stakeholder engagement process include the capacity for all participants to understand, respect and incorporate traditional, customary and gender-specific knowledge about natural resources and their management into REDD+ activities and processes.

In participating countries, programmes such as the Forest Carbon Partnership Facility (FCPF) and the UN-REDD Programme are providing financial resources and technical guidance on effective participation and engagement processes. Stakeholder engagement platforms are emerging to support the design and implementation of REDD+ national and subnational strategies and technical issues, such as the development of reference levels and social and environmental safeguards systems. Stakeholder platforms at regional, national and local levels provide ongoing mechanisms for formal and informal information sharing and feedback among all stakeholders. These processes are often led by both governments and non-governmental organizations (NGOs). Civil society plays an important role convening stakeholders, building technical capacity and raising

awareness at various levels, including coordinating roundtables, events, workshops and technical training. At the regional and national levels, for example, organized indigenous peoples groups, such as COICA in the Amazon and AMAN in Indonesia, facilitate the mobilization and participation of constituents at the local level and the dissemination of information.

In this chapter, we identify common characteristics of stakeholder engagement processes and highlight challenges and best practices that are relevant across different governance contexts to present a framework for facilitating stakeholder participation.

INTERNATIONAL POLICY CONTEXT

UNFCCC
During the 13th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC-COP 13) in 2007, parties recognized that IPLCs need to be included in decision making related to REDD+ implementation. The parties then invited organizations and stakeholders to provide input regarding building capacity, identifying drivers of deforestation and piloting actions to reduce emissions, and then to share outcomes of those efforts. At COP 14 in 2008, the parties agreed that the UNFCCC Subsidiary Body for Scientific and Technological Advice should take into account national and international circumstances and agreements while promoting the full participation of IPLCs. Further to this, at COP 16 in 2010, in Cancun, it was decided that several safeguards, now known as the Cancun Safeguards, "should be

promoted and supported", including (i) "respect for the knowledge and rights of indigenous peoples and members of local communities, by taking into account relevant international obligations, national circumstances and laws, and noting that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples"; and (ii) "the full and effective participation of relevant stakeholders, in particular, Indigenous Peoples and local communities".

The UN Declaration on the Rights of Indigenous Peoples (UNDRIP) affirms the principle of free, prior and informed consent, which maintains that indigenous peoples have a right to give or withhold consent to actions that will affect them, especially actions affecting their lands, territories and natural resources.[5] UNDRIP also declares that indigenous peoples have the right to maintain their own institutions while retaining their right to fully participate, if they so choose, in the political, economic, social and cultural life of the state.[6] These participation rights are entrenched in the overarching right of indigenous peoples to self-determination and related democracy principles—that indigenous peoples have the right to determine and develop their own priorities and strategies for exercising their right to development. UNDRIP also asserts that social programmes affecting indigenous peoples, including REDD+ initiatives, should involve indigenous peoples and, as much as possible, indigenous peoples should be able to administer such programmes through their own institutions.[7]

In addition, the Rio Declaration on Environment and Development defines the main elements of public participation as including (i) access to information, (ii) participation in decision-making, and (iii) access to justice.[8] The declaration further notes, "States should recognize and duly support [IPLC] identity, culture and interests and enable their effective participation in the achievement of sustainable development."[9]

Other international instruments
Many states have also ratified other relevant human rights international instruments that support stakeholder engagement, such as the International Convention on the Elimination of All Forms of Racial Discrimination, International Labour Organization (ILO) Convention No. 169 Concerning Indigenous and Tribal Peoples in Independent Countries, the African Charter on Human and Peoples' Rights, and the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), which includes eliminating discrimination against women when they participate in a country's political processes and, specifically, eliminating discrimination of rural women in order to ensure that they participate in and benefit from rural development.

There is also binding treaty language on rights to participation in decision-making and access to information in the following international instruments: the Universal Declaration of Human Rights (1948); the International Covenant on Economic, Social and Cultural Rights (1966); the International Covenant on Civil and Political Rights (1966); the Convention for the Safeguarding of Intangible Cultural Heritage (2003); the Convention on the Protection and Promotion

of the Diversity of Cultural Expression (2005); and the Convention on the Rights of the Child (1989). Appropriate measures should be taken to ensure compliance of the REDD+ programme with relevant legal instruments at both international and national levels.

Stakeholder engagement and participation are also important in regard to multilaterals. Major multilaterals that engage on REDD+ consistently endorse the relevance of stakeholder engagement and participation. For example, the joint FCPF and UN-REDD Programme Guidelines on Stakeholder Engagement in REDD+ Readiness with a Focus on the Participation of Indigenous Peoples and Other Forest-Dependent Communities[10] were designed to support effective stakeholder engagement of parties that might be more vulnerable in a REDD+ negotiation context.

Overall, participatory rights can be grouped into four main categories: right of access to information, right to participate in decision-making, right of access to justice and right of freedom of expression. All four rights have been developed across a wide variety of international environmental laws, of which most REDD+ host countries are already parties. For a full listing of international treaties requiring public participation in environmental matters, such as REDD+, see

SECURING LAND TENURE FOR COMMUNITY-BASED REDD+

In the Democratic Republic of Congo, WWF engaged stakeholders to secure land tenure for communities in the Mai-Ndombe REDD+ project area. Through this process, the team learned valuable lessons. A Snapshot Case Study of this activity is found in the Legal and Regulatory Frameworks chapter.

NATIONAL AND SUBNATIONAL OPTIONS

This section illustrates the basic steps of effective stakeholder participation and engagement.

Define the desired outcomes of participation and engagement

A stakeholder engagement process should be carefully planned, with a clear mandate and clearly articulated objectives and outcomes. This process should be placed within the overall context of a REDD+ strategy, clarifying how it fits within the broader scope of planned activities and how the outcomes will be used toward expected REDD+ activities.

Key issues on which stakeholder engagement is sought should broadly correspond to the development and implementation of REDD+ strategies and programmes. These may include but are not limited to:

- Current status of national forests;
- Institutional, policy and regulatory frameworks;
- Main causes and drivers of deforestation and forest degradation;
- Past and present policies to halt deforestation and forest degradation, both where they have succeeded and where they have not;
- Rights and needs of forest-dependent IPLCs;
- Type and pattern of land use by IPLCs;
- Land rights (e.g. user and property rights, traditional, customary) and land tenure systems;
- Rights to carbon;
- Proposed national REDD+ strategy and REDD+ strategy-building process, as well as subnational REDD+ processes and means of participation;
- Design of REDD+ benefit-sharing systems for equitable and effective distribution of REDD+ revenues;
- Economic, social and environmental impacts and risks of REDD+ and the mitigation and prevention of risks;
- Design of monitoring systems to keep track of forests and forest emissions as well as environmental and social co-benefits;
- Issues of forest governance and mechanisms to ensure full compliance with social and environmental safeguards, including during REDD+ strategy development;
- Calculation of opportunity costs of land use;
- Identification of groups likely to gain or lose from REDD+ activities;
- Role of the private sector;
- Establishment of grievance mechanisms.

Identifying stakeholders

Engagement planners need to identify both those that have an interest in the forest and those that will be affected by REDD+ activities at various levels—together, forming the stakeholders. This includes rights holders (e.g. property owners; concession holders; national governments; indigenous peoples, communities or individuals that hold traditional or formally recognized usufruct and/or other rights to land or resources) and impacted groups (e.g. individuals and communities that are not rights owners but may be directly impacted by land-use decisions, due to their proximity to the activities undertaken). In addition, stakeholders include groups that are involved in the granting of rights to land and resources, government ministries that oversee the management of particular natural resources, and governments that oversee administration of jurisdictions in which those resources are located, as well as civil society, the private sector and academia. It is important to ensure that the process of selecting stakeholders, either by the conveners, self-selection or a combination of these, is transparent so that all interested parties may participate and that all stakeholders are provided with equal opportunity to engage and contribute to outcomes.

The range of stakeholders involved in REDD+ may include but is not limited to:

- Forest-dependent indigenous peoples;
- Local communities, taking into account the degree of dependence on natural resources, income levels, access to financial and institutional capital, and access to and use of land;
- Civil society (e.g. NGOs working at the national or local level, community associations, indigenous peoples groups);
- Women[11];
- Government agencies related to forests, environment, agriculture, energy, transportation, finance, planning, etc. at the national, state, regional or local level;
- Donors and multilateral institutions;
- Environmental law enforcement agencies;
- Private sector (e.g. loggers, ranchers, energy producers, industry, farmers, agri-business);
- Academia.

Particular attention needs to be given to the inclusion of indigenous peoples and other forest-dependent communities, the rural poor, women and other marginalized groups to ensure that their priorities are adequately and appropriately represented.

It is also important to ensure effective representation of these stakeholder groups—that their representatives are adequately representing the priorities and needs of the groups and any risks to them. Communities are not as homogeneous as they may seem. A significant number of community members, ethnic minorities and women can be excluded

in collective participatory frameworks. These "participatory exclusions" (exclusions within seemingly participative institutions)[12] are sometimes entrenched in customary decision-making processes.

Mapping of stakeholders is necessary to determine the broader categories of those that will need to be engaged at various levels and their relationship to the decision-making process. The mapping process should also capture existing platforms and networks through which stakeholders can be engaged and identify barriers to their participation (e.g. financial resources, logistics regarding timing and transportation, language). At the local level, this process should identify existing informal or formal customary or traditional forums, taking gender and other socially differentiated considerations into account.[13]

Gender-inclusive participation

Methods for full and effective gender-inclusive participation of all stakeholders should consider existing institutional arrangements for participation (e.g. informal and formal decision-making processes and structures, channels of information flow) and must address barriers to accessing information and participation, including capacity building targeted toward ensuring participation at various levels. This will require an under-standing of formal and informal social networks and institutions and decision-making processes, as well as the socio-economic diversity of stakeholder groups.

While women might participate in forest-related projects or even benefit from them, they are often minimally involved in the planning and decision-making processes that define their access to forest rights and resources and their rights to assets, including land and other property. Even where women do have equal rights on paper, they are often unaware of their rights, or these rights are not respected by formal and/or informal power structures. Without women's participation in decision-making processes, women's needs are not likely to be recognized, nor are alternatives likely to be supported that could help them meet their needs in the event of restricted access to forest products. When women are not present and empowered to participate fully and effectively, important knowledge regarding forest ecosystem services and natural resource management may be overlooked. Also, "women" do not form a homogenous group but rather often encompass a range of castes, ethnicities, wealth levels, ages, religions and education backgrounds that affect their capacity to participate and their dependence on natural resources. These backgrounds should be taken into account when representatives of women are selected. Women's presence in and of itself, however, is not enough to ensure their participation. It is important that rules of entry, norms, social preferences, entrenched claims, personal endowments and household endowments be considered, as these factors affect the degree and type of women's participation in forest management. See Table 1.

TABLE 1: DETERMINANTS OF WOMEN'S PARTICIPATION

DETERMINANT	DEFINITION	EXAMPLE
Rules of entry	Refer to membership criteria of community forest groups, water user groups or producer associations; these may be set by individual associations or by government policies.	In producer associations, membership is often based on access to land, which tends to exclude women who do not own land Community forest groups that admit one person per household will exclude women in men-headed households even though men and women in the same household may have different needs and interests
Social norms	Refer to the norms that guide what public spaces men and women have access to, how they should behave in those spaces, and how men and women spend their time (gender division of labour)	Women may be unable to attend meetings when these are scheduled at times when they prepare meals or do other household chores; household chores also limit their ability to participate in meetings that extend over a number of hours
Social perceptions	Refer to beliefs about men's and women's capabilities and skills	It is not uncommon to hear that women are treasurers because they are good with money; women may also be perceived as lacking the knowledge or self-esteem to lead organizations; these perceptions can reduce the space in which women (or men) can participate in groups
Personal endowments	Refer to men's and women's access to resources, both physical and social, that affect their status in the community	Not all women lack power or are vulnerable; widows often have greater personal endowments; they are often able to speak more freely or have greater mobility than married women
Household endowments and attributes	Refer to household resources that affect the status of members of that household in the community	The wife of the village chief will draw power and influence from the importance of her household class; caste position of the household can affect an individual's ability to participate but in some surprising ways; high-caste women may be more subject to social norms that restrict their ability to participate than may women from low-caste households

Adapted from Agarwal, 2001, and CIFOR, 2012

Capacity building to ensure full and effective participation

Stakeholders should have sufficient capacity to engage fully and effectively in all types of stakeholder engagement.

The capacity of stakeholders to engage with REDD+ discussions should be assessed with the use of questionnaires, surveys, focus group discussions and/or workshops. The type of capacity building depends on the existing level of information and knowledge and on the objective of participation. In addition, capacity building should be tailored to specific stakeholder groups, based on their relationship to the decision-making process, and should be recognized in the terms of engagement and factored into the timeline and budget.

Capacity building can include information flows to create awareness about REDD+ objectives and processes, translating complex technical issues and establishing a knowledge base among relevant stakeholders. Other forms of capacity building are more specific, targeting specific stakeholder groups (e.g. government, women) or technical training geared toward building capacity on specific issues. For example, in Madre de Dios, Peru, WWF has been collaborating with civil society, regional and national government representatives, local communities, and academia to build technical capacity on measuring, reporting and verifying REDD+ activities. These trainings and workshops have contributed to the development of a knowledge base among relevant stakeholders in the region.

Capacity building should not be confined just to the group being consulted or whose consent is being sought. Proponents and government agencies also need to be capacitated to deal with communities—from learning the basic protocols of each community to acquiring language skills to be able to impart information effectively. Often, communities are willing to go through the process, only to be frustrated by the proponents' lack of capacity to understand or adjust to the realities of working with communities.

Defining the terms and methods of stakeholder engagement

All forms of stakeholder engagement and participation should be guided by clear expectations of the process and elements of engagement. Stakeholders should be informed about the purpose of the process and how it will be conducted, including the rights and responsibilities of the different stakeholders. It is also important to define when engagement processes should start and end—the scope—in order to have results in a timely manner and to not create false expectations related to REDD+ in advance of it being formalized as an official mechanism. Additionally, it is important to note that stakeholders might change over time and that stakeholder participation and engagement are ongoing responsibilities. Also, it is important to define who is responsible for conducting stakeholder engagement, at which level and how the information generated by the stakeholder engagement process will be used to inform the design of a REDD+ strategy.

SNAPSHOT CASE STUDY

FOSTERING PARTICIPATION AND CROSS-CULTURAL DIALOGUE IN COLOMBIA

Context

Indigenous peoples in Colombia, many of them living in remote, hard-to-reach areas, may have few opportunities to participate in REDD+ policy and implementation decision-making processes. To address this challenge, WWF, the Organization of Indigenous Peoples of the Colombian Amazon, Patrimonio Natural, Colombia's Ministry of Environment and Sustainable Development, and the Coordinator of Indigenous Organization of the Amazon River Basin (COICA) partnered to start a capacity-building process that would empower indigenous peoples to understand and provide valuable insight on key issues, such as climate change, ecosystem services, adaptation, mitigation and REDD+.

This effort, together with the government's willingness to include these issues in the development of the Colombian National REDD+ Strategy, created a participatory process that enabled indigenous peoples to be part of the dialogue.

Expected changes

- Improved decision-making capacity of indigenous peoples in the REDD+ policy-making process;
- Increased participation of indigenous people in the national REDD+ strategy-building process;
- Increased communication and exchange of knowledge between indigenous peoples, government and civil society.

Achievements

- Through the formation of the Amazonian Indigenous Roundtable for Environment and Climate Change in Colombia, which brings together Amazon Basin indigenous peoples and government officials, there is now a participatory and consultative national REDD+ strategy development process.
- Local capacity has increased greatly through 10 workshops that trained 700 people from 40 indigenous communities in the Colombian Amazon on issues of climate change, ecosystem services, adaptation, mitigation and REDD+. Lessons learned gathered and shared at the workshops included those related to methodologies and the knowledge and perspective of indigenous peoples, among others.
- This participatory approach to building national policies and strategies in Colombia has led to international recognition, including acknowledgement by the Forest Carbon Partnership Facility (FCPF).

Challenges

- Lack of adequate financial and human resources. The project could have benefited from additional donors and partners.
- Geographic accessibility. It is difficult to access the most remote corners of the Amazon, where some indigenous peoples' territories are located.

Lessons learned

- The success of a participatory policy development process depends on promoting dialogue and knowledge sharing among a wide array of stakeholders.
- In a participatory policy development process, stakeholders need to define their views clearly but also be flexible to adapt to the groups' needs.

Participation should be based on transparency and timely access to information at all levels and in a culturally appropriate and gender-sensitive manner. Stakeholders should have prior access to information that they can understand on the proposed participation activities and be given sufficient time to fully understand and incorporate concerns and recommendations. The communication and outreach methods should ensure that adequate, appropriate and timely information is provided to all stakeholders in an accessible language and form. Depending on the target audience and objectives of the consultation, various forms of communication media, such as printed materials, electronic media, community radio, and local plays and drama, can be used to disseminate information and translate complex, technical issues related to REDD+. Public awareness building through information sharing, education and communication campaigns is important for communicating the objectives of REDD+ and the associated risks and opportunities.

The method of engagement required to meet the objectives of participation should be defined. This entails determining which approaches are appropriate for the group of stakeholders being considered or those wanting to participate (e.g. public awareness, providing technical input into analyses of drivers of deforestation, participating in decision-making, monitoring and oversight), including the context in which the engagement is being undertaken (e.g. legal, social, cultural, political and economic considerations).

Cross-cutting elements of REDD+ stakeholder engagement and the role of stakeholders include[14]:

- Information sharing and capacity building: information sharing and consultation;
- Analysis of issues: consultation, collaboration or joint decision making;
- Negotiation, consensus building and consent: joint decision making or empowerment;
- Oversight and monitoring: joint decision making or empowerment.

Table 2 provides an overview of different types of stakeholder participation. These can be applied individually or in combination to achieve desired outcomes.

Participation can be formal or informal and can build off of existing participatory structures and mechanisms or establish new ones when necessary. These structures should be tailored to the place and purpose and remain flexible. Effective participation should provide for adequate budgets and human resources, including expert facilitation. A variety of stakeholder engagement methods can be used, such as workshops, surveys and focus groups, with respect for existing processes, organizations and institutions. Table 3 presents options for methods of engaging stakeholders organized by engagement objective, and options for selecting stakeholders.

TABLE 1: TYPES OF STAKEHOLDER PARTICIPATION

TYPE OF PARTICIPATION	DESCRIPTION
Information sharing	Mostly a one-way flow of information (e.g. from government to public, public to government). Objectives are to keep actors informed, provide transparency and build legitimacy. This can be done through simple outreach approaches (e.g. website, fact sheets, press releases, presentations).
Consultation	Two-way flow of information and exchange of views. Involves sharing information, garnering feedback and reactions, and, in more formal consultation processes, responding to stakeholders about how their recommendations were addressed (or if not addressed, why not). Information exchanges may occur through meetings with individuals, public meetings, workshops, soliciting feedback on documents, etc.
Collaboration	Joint activities in which the initiator invites other groups to be involved but retains decision-making authority and control. Collaboration moves beyond collecting feedback to involving stakeholders in problem solving, policy design, and monitoring and evaluation. Approaches may include advisory committees, joint missions and joint implementation activities.
Joint decision making	Collaboration where there is shared control over a decision made. Shared decision making is useful when the stakeholders' knowledge, capacity and experience are critical for achieving policy objectives.
Empowerment	Transfers control over decision making, resources and activities from the initiator to other stakeholders. Stakeholders, acting autonomously and in their own interests, can carry out policy mandates without significant government involvement or oversight (e.g. local natural resource management zones).

Source: Foti et al., 2008

TABLE3: STAKEHOLDER ENGAGEMENT METHODS ORGANIZED BY ENGAGEMENT OBJECTIVES

REDD+ STAKEHOLDER ENGAGEMENT OBJECTIVES	METHOD OF SELECTING	EXAMPLE
Information Sharing and Capacity Building *Provide and exchange data, opinions and options (one-way and two-way exchanges)*	Self-Selection or Convener-Selected	» Public hearings » Public comments » Open houses » Listening » Sessions » Focus groups » Surveys » Online dialogues/blogs » Storytelling
Analysis of Issues *Provide non-binding but influential advice or comments, set baselines*	Convener-Selected (or civil society holds parallel processes)	» Advisory » Committees » Citizen juries/panels » Assemblies » Deliberative polling » Community forums » Policy dialogue » Task forces » National issues forums » Design charrettes » Scenario planning » Future Searches » Appreciative Inquiry » Open Spaces » Wholescale change
Negotiation, Consensus Building and Consent *Reach a workable agreement*	Convener-Selected	» Sustained dialogues » Peacemaking circles » Searches for common ground » Consensus agreements » Delphi methodology » Settlement agreements » Negotiations
Oversight and Monitoring *Stakeholders or citizens share responsibilities for implementation*	Self-Selection or Convener-Selected	» Permanent committees/teams » Town meetings » Partnerships » Study circles

Source: *Forest Carbon Markets and Communities, 2013*

Stakeholders should reach a common understanding of how they will participate and the level of commitment required, including timelines and deadlines, taking into account capacity needs and steps that will be taken to build capacity. The findings from every engagement should be analyzed, reported and discussed with representative stakeholder groups and fed back into the decision-making process.

The issue of time is a major consideration. Consultations should be conducted when the majority of the community members are available—which means taking into consideration agricultural (economic) and cultural calendars, and yet the time between consultations and decisions should not be so long that community members may have forgotten essential points or so short that there is no time for members to reflect fully. When holding multiple activities, care should be taken to ensure that the community calendar is not disturbed too often.

WWF VIEWPOINT

The WWF Statement of Principles on Indigenous Peoples and Conservation recognizes the need to make special efforts to respect and protect indigenous peoples' rights in relation to conservation initiatives. In particular, WWF fully endorses the indigenous peoples provisions contained in Agenda 21, Convention on Biological Diversity; ILO Convention 169, Convention Concerning Indigenous and Tribal Peoples in Independent Countries; and the UN Declaration on the Rights of Indigenous Peoples. This WWF policy includes positive commitments to develop lasting partnerships with indigenous and traditional peoples for conservation and sustainable management of their lands, waters and territories, as long as these are consistent with WWF's conservation objectives.

Through the WWF Policy on Gender, WWF also recognizes that indigenous communities are not homogenous and that the roles and rights of women and girls differ from those of men and boys.

In addition, the WWF Policy on Poverty and Conservation emphasizes the importance of informed participation of potentially affected persons in decision-making about conservation initiatives. Voluntary agreements are proposed as a means to address and resolve conflicts between conservation and local livelihoods.

On the subject of REDD+, CARE International, Greenpeace and WWF have endorsed the REDD+ Five Guiding Principles—a set of principles that set a global benchmark for success in tackling the problem of deforestation and forest degradation. Through adherence to these principles, WWF also believes that sustainable and equitable development should be founded on the strengthening of livelihoods of forest-dependent communities and that REDD+ should recognize and respect the rights of indigenous peoples and local communities, including the right to participation.

FURTHER RESOURCES

Agarwal, B. (2001). "Participatory Exclusions, Community Forestry, and Gender: An Analysis for South Asia and Conceptual Framework". World Development. Vol. 29:10. 2001 pp. 1623-1648.

Springer, J. and Alcorn, J. (2007). "Strengthening WWF Partnerships with Indigenous Peoples and Local Communities". *bit.ly/1brzb09*.

Manfre, C. and Rubin, D. (2012). Integrating Gender into Forestry Research: A Guide for CIFOR Scientists and Programme Administrators. CIFOR. Bogor, Indonesia.

WWF. (2000). Stakeholder Collaboration: Building Bridges for Conservation. WWF Ecoregion Conservation Strategies Unit. WWF-US. Washington, DC, USA. *bit.ly/173t5eN*.

Gomes, R., Bone, S., Cunha, M., Nahur, A., Moreira, P., Meneses-Filho, L., Voivodic, M., Bonfante, T. and Moutinho. Exploring the Bottom-up Generation of REDD+ Policy by Forest-dependent Peoples. October 2010.

"REDD+ Social and Environmental Principles and Criteria: For development and implementation of programs and projects in the Brazilian Amazon". Multi-stakeholder collaboration. July 2010. *bit.ly/16hYjSW*.

CCBA (2010). "Climate, Community and Biodiversity: REDD+ Social and Environmental Standards. Version 1". Climate, Community and Biodiversity Alliance (CCBA). June 2010. Available at: *www.climate-standards.org*.

ClientEarth (2010). "Guidelines to support modalities for Stakeholder Participation". 23 July 2010. *bit.ly/1brBvEp*.

FCPF (2009a). Forest Carbon Partnership Facility Readiness Mechanism: National Consultation and Participation for REDD. Note FMT 2009-2. World Bank. 6 May 2009. *bit.ly/154O8jM*.

FCPF (2009b). "Reducing Emissions from Deforestation and Forest Degradation: Forest Carbon Partnership Facility. Consultation and Participation in R-Plan Formulation & Implementation". (PowerPoint). Participants Committee Meeting (FCPF PC2). World Bank. Gamboa, Panama. 11-13 March 2009.

Governors' Climate and Forests Task Force. (2010). "Draft Guidance Document: Stakeholder Involvement Policy for the Governor's Climate and Forests Task Force". Governors' Climate and Forests (GCF) Stakeholder Involvement Ad-Hoc Group. 18 August 2010. *bit.ly/15JbKgb*.

REDD+ Partnership. (2010). "Interim REDD+ Partnership: Modalities of Stakeholder Participation". Tianjin. 9 October 2010. *bit.ly/GzKvto*.

UN-REDD Programme. (2009a). "Operational Guidance: Engagement of Indigenous Peoples and Other Forest Dependent Communities". Working document. 20 April 2009. *bit.ly/173u4vN*.

Costenbader, J. (Ed.) (2009). "Legal Frameworks for REDD: Design and Implementation at the National Level". IUCN Environmental Policy and Law Paper No.77. IUCN. 2009. *bit.ly/18tXczd*.

FCPF (2010). "Harvesting Knowledge on REDD+: Early Lessons from the FCPF Initiative and Beyond". FMT Working Paper No.1. 20 October 2010. *bit.ly/19m6slQ*.

Erikson, J. (2009). "IUCN's role as facilitator in Cameroon's multi-stakeholder consultations for a Voluntary Partnership Agreement". IUCN Forest Conservation Programme. April 2009. *bit.ly/GzUsr5*.

Herbertson, K., Ballesteros, A., Goodland, R. and Munilla, I. (2009). "Breaking Ground: Engaging Communities in Extractive and Infrastructure Projects". World Resources Institute. 2009. *bit.ly/19Zz3Qe*.

Richards, M. and Panfil, S. (2010). "Manual for Social Impact Assessment of Land-Based Carbon Projects. Version 1.0". Forest Trends, Climate, Community & Biodiversity Alliance. 1 June 2010. *bit.ly/19Zz7PI*.

UN-REDD Programme (2009b). "Engaging Civil Society in REDD—Best Practice in the Democratic Republic of Congo". UN-REDD Programme. November 2009. *bit.ly/15JcfHi*.

The Nature Conservancy (TNC) (2010). "Berau Forest Carbon Program: Business Plan for the Community Engagement Component of the Berau District Model REDD Program. Final Report".

Berau Forest Carbon Program—Community Involvement Component. The Nature Conservancy. March 2010.

UNEP (2013). Review of Current Practices of Stakeholder Engagement in Multilateral Organisations.

Forest Carbon, Markets and Communities Program. (2013). "Readiness to Engage: Stakeholder Engagement Experiences for REDD+". Paper prepared by Nancy Diamond and FCMC for USAID. Burlington, VT: Tetra Tech.

Forest Carbon, Markets and Communities Program. (2013). "Methods for Assessing and Evaluating Social Impacts of Program-Level REDD+". Paper prepared by Kathleen Lawlor and FCMC for USAID. Burlington, VT: Tetra Tech.

BIBLIOGRAPHY

UN Conference on Environment and Development. Rio de Janeiro, Brazil. 3-14 June 1992, Rio Declaration on Environment and Development, Princ. 10, UN Doc. A/CONF. 151/26 (vol. I) (12 Aug. 1992)

END NOTES

1. "Resources" is understood to include ecosystem services provided by these resources.

2. "Livelihoods" can be defined by six capitals/assets: sociopolitical, cultural, human, financial, natural and physical.

3. See UNFCCC Decision 1/CP.16, para. 7, 8 and 72, and Appendix 1, para. 2.a, 2.b, 2.c. and 2.d.

4. "Customary rights" to lands and resources refers to patterns of longstanding community land and resource usage in accordance with indigenous peoples' and local communities' customary laws, values, customs and traditions, including seasonal or cyclical use rather than formal legal title to land and resources issued by the state (REDD+ SES).

5. The UN Declaration on the Rights of Indigenous Peoples, adopted by the 61st session of the United Nations General Assembly on 13 September 2007, can be accessed at www.un.org/esa/socdev/unpfii/en/declaration.html.

6. Article 5 of UNDRIP.

7. Article 23 of UNDRIP.

8. Principle 10 of the Rio Declaration on Environment and Development.

9. Principle 22 of the Rio Declaration on Environment and Development.

10. Available at bit.ly/17jAl9D.

11. The term "women" encompasses differences in caste, ethnicity, wealth, age, religion and education level. These differences should be taken into account during REDD+ participation processes, as their influence on women's capacity to participate and scope of decisions taken varies and can depend on factors such as whether women are landholders or rights holders, whether they have access to financial and institutional capital, and their dependence on natural resources.

12. Agarwal, B., "Participatory Exclusions, Community Forestry, and Gender: An Analysis for South Asia and a Conceptual Framework". *World Development*. Vol. 29:10. 2001 pp. 1623-1648.

13. "Socially differentiated" includes differentiated by gender, marginalization and vulnerability.

14. Forest Carbon, Markets and Communities Program. (2013). "Readiness to Engage: Stakeholder Engagement Experiences for REDD+". Paper prepared by Nancy Diamond and FCMC for USAID, Burlington, VT: Tetra Tech.

TRACKING REDD+

WWF GUIDE TO BUILDING REDD+ STRATEGIES

Tracking REDD+

MONITORING, MEASUREMENT, REPORTING AND VERIFICATION

DOWNLOAD THIS CHAPTER

Key Messages

■ Forest monitoring, measurement, reporting and verification (MMRV) systems are the backbone of a performance-based system for REDD+. For this reason, they are vital to a national or subnational REDD+ strategy, and should track information in a way that is consistent, complete, transparent and comparable with known estimated accuracies.

■ MMRV systems should adhere to the latest Intergovernmental Panel on Climate Change (IPCC) Good Practice Guidance for Land Use, Land-Use Change and Forestry; and IPCC Guidelines for National Greenhouse Gas Inventories. MMRV systems should aim to develop geographically explicit land use data (IPCC Approach 3) using emissions estimates that use at least IPCC Tier 2 reporting standards.

■ Forest monitoring systems will need a combination of both remote-sensing and field data. As field measurements are both costly and time consuming, strategic selection of field sites through stratification and sampling will be important.

INTRODUCTION

Monitoring, measuring, reporting and verification (MMRV) systems can be broken down into four major components: forest monitoring (M1), measurement (M2), reporting systems (R) and verification (V). These concepts are frequently, and often confusingly, interchanged, and their difference is seldom elaborated. Here we will show how these systems differ and how together they constitute the backbone of REDD+ implementation by providing a resource tracking and inventory system of land use and land-use change and their related emissions. Throughout this chapter we will refer to the three different systems outlined below:

WEBINAR VIDEO: MRV—WHAT DO YOU NEED TO KNOW TO MAKE THE RIGHT DECISION?
LEARNING SESSION 3

▶

WEBINAR VIDEO: ASSESSING ACCURACY AND ESTIMATING AREA OF REMOTELY SENSED CHANGE MAPS
LEARNING SESSION 11

▶

Forest monitoring (M1) systems are the physical and technological systems that are used to generate forest-cover data and detect and quantify changes observed in forest cover (including above- and below-ground biomass, forest types, canopy density, etc.). The information that we collect in our forest monitoring systems are the primary data source and are therefore critical for the overall accuracy and precision of our MMRV system. As such, forest monitoring systems need to be comprehensive enough to allow the tracking of all forests in a country as well as sensitive enough to be able to detect forest presence/absence according to the country's forest definition.

Measurement (M2), Reporting and Verification (M2RV) systems in contrast are a combined set of methodologies and standards that we use to translate our primary data into measurable and reportable emissions estimates that are verifiable by an external entity or authority. For much of the purpose of this document the external institution that we are reporting to will be the United Nations Framework Convention on Climate Change (UNFCCC); however, we might also develop M2RVsystems under other third-party entities such as the Verified Carbon Standard (VCS); the Climate, Community and Biodiversity Alliance (CCBA) or the American Carbon Registry (ACR).

Monitoring, measurement, reporting and verification (MMRV) is the combination of the two above systems, with the purpose to track changes in forest areas in a way that is transparent, consistent, accurate and reduces uncertainties. This is critical if we are to establish whether or not our interventions are having positive or negative effects in forest ecosystems over time.

MMRV systems are often discussed in the context of climate change, and therefore measuring greenhouse gas (GHG) emissions will be important. They can also help track a range of other indicators (e.g. biodiversity, hydrology, cultural values). Throughout this chapter we will predominantly be discussing GHG emissions MMRV systems, recognizing that developing MMRV systems across a range of indicators will improve both the efficiency and effectiveness of our tracking systems.

INTERNATIONAL POLICY CONTEXT

There are several international standard-setting bodies for MMRV. The most important of these is the UNFCCC since it sets the international legal, regulatory and institutional framework for forest owning countries to monitor, measure and report on their forests. Other systems include VCS and CCBA, which to a greater or lesser extent influence developing country MMRV systems. The following section will summarize the major decisions that have been made under the UNFCCC and where relevant in other arenas that guide the national and subnational context for MMRV.

COP 13: Bali, 2007
The UNFCCC has provided guidance on MMRV dating back to the UNFCC 13th Conference of the Parties (COP 13) in Bali in 2007. The Bali Decision requested that parties improve their **data collection**, **estimation of emissions** from deforestation and forest degradation and **monitoring and reporting** capabilities.[1] It was also agreed that parties should use their national GHG inventories as a basis for reporting emissions from deforestation, noting also that developing country parties should use the IPCC Good Practice Guidance (GPG) for Land Use, Land-Use Change and Forestry (LULUCF)[2] and IPCC Guidelines for National GHG inventories (see *Focus*).

COP 15: Copenhagen, 2009
In 2009, at COP 15 in Copenhagen, developing countries were asked to establish robust and transparent **national forest monitoring systems**[3] that use a combination of **remote sensing** and **ground-based** forest carbon inventory approaches for estimating emissions, removals, forest carbon stocks and forest area changes; and for providing estimates that are **transparent**, **consistent**, **accurate**, and **reduce uncertainties**.[4]

COP 16: Cancun, 2010
In 2010, at COP 16 in Cancun further guidance was given on ways to integrate subnational monitoring systems into national monitoring systems, including provisions for reporting on how displacement of emissions is being addressed.[5] Importantly Cancun created a roadmap for parties to discuss forest monitoring systems and MRV systems (MMRV) with an agreement scheduled for COP 17 in Durban.

COP 17: Durban, 2011

In 2011, at COP 17 in Durban, parties failed to come to an agreement on the modalities for forest monitoring and MRV. Parties continued discussing these issues at Bonn in May 2012, and their positions are captured in draft text[6] that provides guidelines on both forest monitoring systems and MRV systems.

The draft text states that national **forest monitoring systems** should provide data that is *transparent*, *consistent over time* and *complete*.[7] Data should also build upon existing systems, provide information on all forest areas in the country, enable the assessment of changes incurred in natural forests, be flexible and allow for improvement, and identify potential sources of uncertainties to the extent possible. The draft text also states that forest monitoring systems can provide information on safeguards.

The draft text also agrees that **MRV systems** should provide data and information on anthropogenic forest-related emissions by sources and removals by sinks, forest carbon stocks, and forest carbon stock and forest-area changes that are *transparent*, *complete* and *consistent* with the established forest reference level and, over time, are *accurate* and *comparable*. In addition, it states that MRV systems can be improved over time. The draft text also sends an important signal that all data for REDD+ reporting should be provided through biennial update reports (BURs).[8] These reports should contain information on GHG emissions and removals, nationally appropriate mitigation actions (NAMAs), and any financing, technology and capacity-building gaps. This information will be submitted using UNFCCC guidelines for the preparation of national communications

(Decision 17/CP.8) as well as adhere to IPCC GPG for LULUCF. In Durban it was also agreed that developing countries should verify their emissions using a process called International Consultation and Analysis (ICA). The ICA process will consist of two steps:

- A *technical analysis* of BURs by a team of technical experts in consultation with the party to UNFCCC, resulting in a summary report. The information considered should include the national GHG inventory report along with NAMAs, including their impacts and progress made in their implementation.

- A *facilitative sharing of views*, which will have as input the BUR and summary report referred to above.

NATIONAL AND SUBNATIONAL OPTIONS

MMRV systems can be implemented in many ways. As mentioned before, these systems must be *transparent*, *consistent*, *accurate*, *comparable* and *reduce uncertainties*. While MMRV systems can track a range of variables, at a minimum they must provide information on how much CO_2 is being emitted or sequestered as a result of current management practices. In order to build up this information, MMRV systems first need to answer two fundamental questions:

- What is the rate of change of forest area and forest type (activity data)?

- What are the emissions related to that change (emissions factors)?

IPCC GUIDELINES FOR NATIONAL GHG INVENTORIES (2006) AND IPCC GOOD PRACTICE GUIDANCE FOR LULUCF (2003)

The following is adapted from these reports

The IPCC Guidelines for National GHG Inventories (2006) (hereafter 'Guidelines') and the Good Practice Guidance for LULUCF (hereafter 'GPG') assist countries in compiling complete, national inventories of greenhouse gases. The Guidelines have been structured so that any country should be able to produce reliable estimates of their emissions by sources and removals by sinks across all sectors. Combined, these resources provide the backbone for reporting methodologies under the UNFCCC.

Both the Guidelines and the GPG support a tiered and tailored reporting approach for measuring emissions in the Agriculture, Forestry and Land Use (AFOLU) sector, allowing for different levels of technical capacity across countries. In general, moving to a higher tier improves the accuracy of reporting and reduces the uncertainty, but the complexity and resources required for conducting inventories also increase for higher tiers. If needed, a combination of tiers can be used (e.g. Tier 2 can be used for biomass and Tier 1 for soil carbon).

Tier 1 methods are designed to be the simplest to use. Under Tier 1 accounting, default equations and values (e.g. emission and stock change factors) are used. Country-specific activity data is needed, but for Tier 1 there are often globally available sources of activity data estimates (e.g. deforestation rates). This data is usually spatially coarse.

Tier 2 can use the same methodological approach as Tier 1 but applies emission and stock change factors that are based on country- or region-specific data. Higher temporal and spatial resolution and more disaggregated activity data are typically used in Tier 2.

Tier 3 uses higher-order methods and higher resolution activity data disaggregated at the subnational level. These higher-order methods provide estimates of greater certainty than do lower tiers. Such systems may include comprehensive field sampling repeated at regular time intervals and/or GIS-based systems. Models should undergo quality checks, audits and validations, and be thoroughly documented.

The system will also allow/help address the following questions:

- What types of forests does the country currently have?
- What are the main direct drivers of deforestation?
- What is the level of uncertainty with our measurements?
- How are other indicators (e.g. biodiversity) changing over time?

The following sections will show how these questions are addressed under the four components of MMRV:

- M_1: Forest monitoring
- M_2: Measurement
- R: Reporting
- V: Verifying

Forest monitoring systems (M_1)

There are two primary ways in which data needs to be gathered for forest monitoring systems:

- *Indirectly* using **remote sensing technologies** (e.g. satellite or airborne detectors) and other ancillary data (e.g. maps, historical records)
- *Directly* using crews on the ground to collect **field data**.

As discussed in the introduction, most, if not all, forest monitoring systems will use a combination of these two approaches (see Focus, right). In both cases, data needs to be comprehensive enough (to allow monitoring of all forests in a country) as well as sensitive enough (to detect changes in forest cover according to the country's definition of forests).

FOCUS

A COMBINED APPROACH TO MONITORING SYSTEMS

COURTESY OF NASA / USGS

There are two primary goals in developing forest monitoring systems. The first is to be able to measure and report information in a consistent and comparable manner to international conventions (see International policy context above). The second is as an early warning system, to notify regional and/or national authorities of likely immediate changes in forest cover. These two needs can lead to two different yet potentially complementary approaches to developing forest monitoring systems. The differences lie in the frequency of assessments and how data can be interpreted with regards to forest cover and dynamics.

Under a snapshot approach, two assessments of forest cover are carried out at different times (usually between reporting periods). A comparison of the results obtained is used to establish the changes in forests over this time period. With this approach, ground-truthing—by teams on the ground—is used, either for calibration of the methods or enhancement of the algorithms.

Using the phenology approach, remote-sensing data is collected continuously, allowing for instantaneous detection of any deviation from a normal trend. The type of change observed can be associated with partial deforestation (or degradation) as well as with the specific type of land-cover change that occurred.

A combination of these approaches can be developed, in which coarser resolution satellite imagery (e.g. MODIS) is used to identify areas where forest-cover changes may be occurring, and higher-resolution datasets (e.g. Landsat, RapidEye or GeoEye) can be used to characterize and verify these changes. (Field data may also be used when deemed necessary.) The data generated through these higher-resolution satellites can then also be included in periodic reports. Combining approaches allows for an optimization of logistical resources (including imagery acquisition and processing times) and provides multiple functionalities in forest monitoring systems.

Remote sensing technologies

Over the past decade, a range of free and paid-for satellite technologies have become available for forest monitoring. The choice of which remote sensing data to use is driven by just a few key factors.

Acquisition period: The timeframe for which data is available is critical. Satellite data is ideally acquired over a continuous period, both into the past, for the purpose of developing reference levels (based on historic deforestation and associated emissions) (see *Reference Levels* chapter), and into the future for on-going forest monitoring.

Acquisition frequency: Satellite data is typically not continuous; therefore the time period between image captures is a key factor in the choice of remote sensing technologies.

Spatial resolution: The spatial resolution of remote sensing systems ranges from sub-meter (e.g. Quickbird, Pleiades) up to sub-kilometre (e.g. MODIS). Common wisdom associates higher resolution with better quality of data as we get to "see the forest". However, this often comes with a trade-off in cost, processing times, required storage space, and in some cases acquisition frequency and spectral resolution (see below).

Spectral bands: Perhaps the most important consideration for remote sensing systems is the bandwidth or frequency of the image detection system. Different bandwidths allow for different land use and forest characteristics to be measured (e.g. biophysical parameters of vegetation such as chlorophyll content and humidity) and also offer other benefits (e.g. cloud penetration).

Table 1 lists the predominant remote sensing technologies currently available and their relevant characteristics.

The use of remote sensing technologies in recent years has shown that no single dataset will be able to deliver under all circumstances. Due to the great diversity of forest types and regional conditions and a lack of consistent coverage, formatting and processing needs (Sy et al., 2012), MMRV systems will need to use a combination of remote sensing technologies that establish synergies among available data sets and their characteristics.

Field data

Field plots are the second cornerstone of a forest monitoring system. Forest cover data generated via remote sensing sources needs field validation to enhance and calibrate the quality of the monitoring system, a process that is often referred to as ground-truthing. Deriving activity and/or forest cover change data and ground-truthing via field work are iterative processes allowing the constant enhancement of the monitoring system as well as that of the accuracy on the activity data.

Because the uncertainties in our field measurements will propagate through the entire MMRV system, the accuracy of our field measurements is one of the key components of the overall forest monitoring system. As field measurements are both costly and time consuming, however, selection of field sites through **stratification** and **sampling** is essential.

Stratification

Before any field measurements can be taken, forests need to be stratified into reasonably homogeneous types so that sample plots gathered from those areas are representative of the entire strata. These strata can be derived either from remote sensing data or from other ancillary data. The quality of the stratification will be a key determinant in how accurate are the carbon estimates generated for each forest type. Two-step stratification is usually recommended:

1. A preliminary stratification is carried out with sample field plots to assess how estimates behave statistically.

2. Based on initial estimates, ideal sample sizes (e.g. number of plots needed) and/or strata are generated.

It is common practice to base such stratification on a combination of factors, including forest type, soil type, topography, ecoregion, etc. In order to optimize logistical resources, it is advisable to incorporate additional factors into the stratification approach such as likelihood of deforestation of a given area. Because these areas are the most likely to produce emissions, higher accuracies are desired from these areas. When developing stratification strategies it will also be important to create approaches that can be easily translated across systems (i.e. between national forest inventories and UNFCCC reporting requirements).

Sampling

Once the stratification process is complete, we need to begin taking field measurements from samples within our strata. The number of samples will depend on the level of uncertainty needed for the MRV system, which in turn depends on how heterogeneous the individual strata are. Various tools are available that can be used for this process (e.g. Winrock Sampling Calculator *www.winrock.org/ecosystems/tools.asp*). If very large numbers of samples are required for a given stratum (because of large variance in forest areas), a reassessment of the stratification must be made as it is likely that new strata will need to be defined.

Pools

Field measurements typically follow a standardized approach. Because field measurements are the primary source of data to estimate forest carbon, certain key data needs to be gathered. The IPCC has identified five carbon pools that parties to UNFCCC are encouraged to report against:

- Above-ground biomass (AGB)
- Below-ground biomass (BGB)
- Deadwood
- Litter or dead organic matter (DOM)
- Soil organic matter (SOM)

During field measurements, practitioners will need to gather data across ideally all of these pools. Sometimes that is not possible, in which case only the most relevant pools will be assessed. Usually, the most significant pool in terms of carbon fluxes (changes in carbon) is AGB (i.e. tree biomass).[10] Direct measurement of AGB would mean felling trees and drying them to measure their

biomass and thereby their carbon content. This is an expensive process, however, and is often neither possible nor desirable due to restrictions in our sample areas. Therefore, we often rely on estimates of AGB derived through **allometric equations** that are based on variables that have been shown to correlate with tree volume and hence biomass.

Community-based forest monitoring

Communities can play an integral role in forest monitoring systems (including measurement, reporting and verification). Studies have clearly established that data collected by communities on the ground is comparable to data collected by trained scientists (see, for example, Pratihast et al., 2013, Danielsen et al., 2011). Examples of tools that can help incorporate communities in forest monitoring activities include the Geo-Wiki project with its biomass branch (*biomass.geo-wiki.org/login.php?ReturnUrl=/index.php*; Fritz et al., 2009) and Google's Open Data Kit (see, for example, MOABI *drc.moabi.org*).

WEBINAR VIDEO: SATELLITE DATA FOR REDD+ MRV
LEARNING SESSION 7

▶

PARTICIPATIVE DEVELOPMENT OF A BASELINE FOREST CARBON MAP IN THE PERUVIAN AMAZON

For more information, read the full Inspiring Practice at bit.ly/10MktII

Context
The Regional Government of Madre de Dios (GOREMAD) needed to implement a land use plan for its natural resources that both fulfilled a national mandate from the Ministry of Environment and followed the REDD+ nested approach adopted by Peru. To do this, GOREMAD sought to collect data on deforested areas. Although information from various isolated studies was available, none of it was officially validated. There was also a growing demand for official information on deforestation, as many REDD+ initiatives started up in the region. In 2009, GOREMAD created the Roundtable of Environmental Services and REDD+ (MSAR), whose work focused on land-use planning, sustainable development, and tools and mechanisms for climate change mitigation.

Expected changes
The work in Madre de Dios of WWF's Forest and Climate Initiative focused on developing an affordable, technically feasible and effective regional participatory monitoring system designed and tested in coordination with the national and regional governments.

Achievements
Building local MMRV capacity. In 2011, WWF and Universidad Nacional Amazónica de Madre de Dios (UNAMAD) developed the first Diploma of Environmental Management and REDD+ with specialization in MMRV. After five months of rigorous training, 35 participants from GOREMAD, NGOs and universities—along with private professionals—graduated with a newfound understanding of the complex topic of MMRV.

Definition of processes and methodologies to complete the deforestation baseline. Experts and officials worked to define the methodology to estimate the deforestation baseline in accordance with international guidelines and standards. The process involved comparison of methods and tools that were proposed by a large number of national and international organizations. The National Agrarian University of Lima developed the selected methodology and also provided technical support to complete the map using data up to 2010. MSAR recognized this process and submitted it to GOREMAD so that it would be defined as a technical standard.

Analysis and recommendations for the development of a biomass and carbon map. The Biomass and Carbon Baseline subcommittee for Madre de Dios, led by WWF, compiled information from 600 forest quadrants installed by various public and private organizations. The University of Leeds (United Kingdom) analyzed the data coming from those quadrants, identified the gaps and suggested a protocol to measure forest carbon in Madre de Dios.

Challenges

■ Management discontinuity and political instability led to frequent changes in GOREMAD authorities, prevented smooth progress and impacted planned programmes.

■ Participatory processes often take longer than anticipated. Although the strength of this initiative came from the fact that local groups and the regional government worked together, this took significant time.

Lessons learned

■ **MMRV tools need to be flexible, simple to use, easily available and appropriate for the context.** Technical tools should be developed taking the local situation, local technicians and local capacities into consideration. Using tools that don't meet the specific needs of the community hinders work.

■ **It is necessary to define agreed-upon criteria to select the correct methodologies for the region.** In Madre de Dios there were six studies on deforestation that encouraged comparisons and discussions on the most adequate approach for REDD+ projects.

SNAPSHOT CASE STUDY

BRAZIL'S FOREST MONITORING SYSTEM

Brazil has developed its own MMRV system based on the experience and expertise of INPE. The system is composed of five subsystems:

1. DETER (www.obt.inpe.br/deter) uses high temporal and spectral resolution data from MODIS to establish "normal" phenologic trends for forest cover. Any deviation to this trend allows for the identification of priority areas for further assessment. Brazil uses DETER as a first cut into tracking deforestation and degradation.

2. PRODES (www.obt.inpe.br/prodes) has been used as the official approach to deforestation tracking since 1988. It is based on high spatial resolution data (Landsat-type data; 30m spatial resolution, acquired every two weeks, 5–7 bands).

3. DEGRAD (www.obt.inpe.br/degrad) is used for degradation tracking and combines the results of the DETER and the PRODES systems in order to assess degradation trends. The combination of the high radiometric and temporal resolution of the DETER products with the high spatial resolution of the PRODES outputs allows for a first-cut assessment of forest degradation trends.

4. Terra Class (www.inpe.br/cra/projetos_pesquisas/terraclass.php) for land-use characterization (a.k.a. activity data) is basically the land cover mapping project that Brazil has for the Amazon.

5. INPE EM (inpe-em.ccst.inpe.br) is a system that translates all these datasets into emissions estimates.

Forest fires are also monitored as a proxy to early stages of deforestation via the thermal anomaly product of the MODIS sensor.

Measurement (M$_2$)

The purpose of the measurement (M$_2$) system is to convert information from our forest monitoring systems into the emissions reductions and removals that result. The IPCC GPG for LULUCF defines measurement systems as the continuous collection of data on anthropogenic forest-related greenhouse gas emissions by sources and removals by sinks, forest carbon stocks and forest area changes (Forestry and Forest Products Research Institute, 2013).

Deriving carbon estimates in plots

The first step in converting forest monitoring data into reportable measurements expressed in tCO$_2$e is to use allometric equations to estimate the carbon content in individual trees. Allometric equations can either be a set of predefined equations based on general species types and forest compositions, or they can be specifically tailored to a particular forest area developed using, for example, local measurements and even destructive sampling of forest areas. This latter approach, however, is both costly and environmentally degrading as it requires the destruction of a representative number of trees for a given forest type.[11] In any case, the difficulties involved in carrying destructive sampling and developing new specific allometric equations mean that predefined equations are often used to estimate forest carbon stocks.

The IPCC has established a system of *three tier levels for the estimation of biomass:* Tier 1 uses generic equations and data; Tier 2 uses generic equations but uses data acquired at a national level by means of a national forest inventory; and Tier 3 uses both nationally produced allometric equations and national field data. It is assumed that as tier levels increase, the accuracy of our estimates also increases.

From plots to a carbon map

The second stage in measuring for REDD+ is to scale up our plot estimates of forest carbon to the jurisdictional or national level using remote sensing and ancillary data. The most common and simple approach is to average plot data across each of the forest strata[12] to estimate the forest carbon content, including error estimates. This redoubles the importance of accurately mapped forest strata because poorly defined strata will lead to large variance in forest carbon estimates and therefore to large confidence intervals.

When plot data is not sufficient, relationships between plot data and other independently collected variables (e.g. tree height, canopy density, elevation) may be used. These variables are often derived from remote sensing data or other ancillary data (e.g. topography and elevation maps). Examples of such synergies between plot data and other datasets currently being explored include the use of high spatial resolution remotely sensed data from which canopy height (e.g. LiDAR) or canopy crown sizes (e.g. Ikonos, Quickbird, GeoEye) can be estimated.[13] These datasets, however, can also be technologically demanding and expensive to obtain when thinking in terms of the total coverage of large countries and considering that synergies are still being characterized. Error propagation of carbon estimates from the plots to the final outputs is of special concern because it is poorly understood how this happens.

TABLE 1: LIST OF AVAILABLE SATELLITE DATA, SOURCES AND APPLICATIONS

NAME	SOURCE	AVAILABLITY DATE	RESOLUTION	FREQUENCY	SPECTRAL BANDS	USES	SOURCE
LOW RESOLUTION							
MODIS	NASA	1999–	250m-1km, ~10degree tiles	Twice daily	36 bands, for land, water, atmosphere	Fire detection, real-time monitoring, daily snapshots, phenology, regional studies, long-term trends, vegetation indices	» Info on MODIS Data: modis.gsfc.nasa.gov/data » Search and download raw and derived data products from Reverb (registration required): reverb.echo.nasa.gov » Or GLCF for derived products: glcf.umiacs.umd.edu/data/modis
SeaWifS	NASA	1999–	9km	Daily	8 bands	Water quality, chlorophyll, sediment	Data download from Oceancolor web (registration required): oceancolor.gsfc.nasa.gov/
SPOT-VGT	VITO	2002–2012	1km	Daily	Red, blue, NIR, SWIR, composite vegetation index	Surface mapping, basic vegetation and canopy	» Read documentation for how to convert DN » Background information: www.vgt.vito.be/index.html » Free products: free.vgt.vito.be
MERIS/ ENVISAT	ESA	2002–2012	300m, swath width 1150km	3 days	15 bands	Land and water mapping	Data access through ESA application, multiple web clients: https://earth.esa.int/web/guest/data-access/catalogue-access
MEDIUM RESOLUTION							
ALOS PALSAR	JAXA	2007–2010	25m, 50m resolution	Annual mosaics	HH, HV polarization	Forest mapping, biomass, change detection, cloudy areas	» Processed mosaics for Africa and SE Asia available in GTIFF from WWF Germany. » HDF 50m mosaics can be download from the K&C website: www.eorc.jaxa.jp/ALOS/en/kc_mosaic/kc_map_50.htm » Additional requests for 25m data can be made through K&C
ALOS AVNIR	ALOS AVNIR	2007–2010	10m, 70km swath	2 days	Blue, green, red, NIR	Land cover mapping and quick disaster response	» Search archive and order through Pegasus: en.alos-pasco.com/sample/pegasus.html
ASTER	NASA	1999–	15m/30m/ 90m, 60km x 60km tile	Weekly	15 bands: 4 visible and NIR, 6 short-wave IR, 5 thermal bands (90m), 1 stereo	Land- cover mapping, change detection, real-time monitoring	» Data can be browsed and downloaded from Earth Explorer: earthexplorer.usgs.gov or Glovis: glovis.usgs.gov » List of ASTER Derived products: https://lpdaac.usgs.gov/ products/aster_products_table
AWIFS	Indian Space Research Organization	2003–	56m, 370 x 370km	5 days	4 spectral bands: green, red, NIR, mid-IR	Land cover mapping, change detection, crop yields, large-scale analyses	Data can be searched through the National Remote Sensing Centre of India: 218.248.0.130/internet/servlet/LoginServlet or through a reseller; data can be freely available for Amazon (Resource-Sat www.dgi.inpe.br/CDSR)
Corona	USGS	1960–1972	10m, 22km x 22km	Intermittent	Panchromatic camera	Historical mapping	Searchable via selecting Declassified Data in Earth Explorer: earthexplorer.usgs.gov
ICESat/GLAS	NASA	2003–2010	60m granules/ footprints	891 days	LiDAR: Altimetry, back-scatter	Forest canopy height, elevation, sea ice thickness	Coverage is not continuous; data must be filtered for quality: nsidc.org/data/icesat
KOMPSAT	Korea Aerospace Research Institute	2006–	1m panchro-matic, 4m multispectral, 15km swath	14 days	Blue, green, red, NIR	Disaster surveillance, vegetation and coastal monitoring	» www.kari.re.kr/data/eng/contents/ Space_001.asp?catcode=1010111000&depthno=0 » Imagery donations for climate change projects: www.planet-action.org
Landsat	USGS	1982–2012	30m, 185km x 185km	14 days	Red, green, blue, NIR, mid-IR, thermal IR (60m); Landsat 7 includes a pan-chromatic (15m) band	Land cover mapping, vegetation studies, change detection, long-term studies, marine mapping	» Landsat 7 ETM+ data collected after May 2003 has striping issues. Landsat 5 TM is still collecting, though not everywhere. » Data can be browsed and downloaded from Earth Explorer: earthexplorer.usgs.gov or Glovis: glovis.usgs.gov

Extrapolating plot data by means of these independent variables has allowed the creation of global carbon estimates maps as well as carbon estimates error maps (for examples, see Saatchi et al., 2011, Harris et al., 2012).

Reporting (R)

Reporting requirements for REDD+ will differ depending on whether REDD+ is being implemented at the national level under the UNFCCC or at the project level. In this section, only the reporting requirements for implementation at the national level are discussed. Reporting is defined under the IPCC GPG for LULUCF as "the process of providing estimates to the UNFCCC". The UNFCCC has given clear guidance on reporting systems for developing countries. Under their BURs (see Focus on Reporting systems for REDD+ in DRC), developing countries are required to submit detailed accounts every two years that show the changes in forest carbon stocks. These reports must be written in line with the latest LULUCF guidelines and expressed in tonnes of carbon dioxide equivalent (tCO_2e). IPCC GPG further recommends that reporting systems should be comprehensive and that all information related to emissions reporting should be readily accessible and available for assessment. Reporting systems should also be complete and transparent, with explanation of remote sensing and field data and the methods used to allow others to fully reproduce the results of the measurement and reporting systems.

Given that this will be a very data-intense system, many countries will need to expand their technical capacity to report on forest carbon measurements (bearing in mind that they will be able to progress in a stepwise approach through the various tiers). Countries will also need to develop online interfaces to manage this data. There are already several examples of such systems being developed by various organizations (see Focus on Reporting systems for REDD+ in DRC). These systems will certainly need to include information on carbon stock changes but, depending on the level of advancement in reporting systems, they may also need to include geospatial data on land cover change. Ground survey requirements for these types of tool, however, are extremely high and may only be practical over relatively small, homogeneous, or well-known areas.

Reporting errors

Error reporting will be an essential component of our measurement and reporting system. Because errors propagate through the system, a **parsimony approach** (i.e. the least number of steps) can be used to avoid increasing the sources of errors during carbon estimation. The fewer variables and intermediate datasets that are used to obtain estimates the fewer measurement and correlation errors there will be in overall estimates; the parsimony approach will also help to make the process more transparent and adaptable (as simpler systems are easier to assess and verify).

FOCUS

REPORTING SYSTEMS FOR REDD+ IN DRC

The Democratic Republic of Congo (DRC) is developing a three-tiered reporting system for REDD+.

The first component is the National Forest Monitoring System (Système National de Suivi du Couver Forestier) (www.rdc-snsf.org), currently being developed with the support of UN-REDD and the Instituto Nacional de Pesquisas Espaciais (INPE) from Brazil. This system will seek to integrate data on forest cover collected at different scales, from the community level to the subnational and national levels. The reporting system will compile, integrate and analyze a wide spectrum of data based on the use and interpretation of remote sensing data and emissions factors issued from field inventory data and other sources.

The second institutionally managed tool is the National REDD+ Registry, which aims to collect, gather and share data on REDD implementation activities. For more information, see the REDD+ Registries chapter.

The third component is a collaborative Independent Mapping Platform called MOABI (rdc.moabi.org). This system allows the community to track and report development-related events such as large-scale projects, as well as deforestation events, and to also report validation data for government-generated information. This tool can be used for validation/verification of reported data, crowd sourced feedback, as well as assessment and update of drivers of deforestation.

INSTITUTIONAL
National REDD+ Registry

REDD+
Governance Tools
(Effectiveness, transparency)

INDEPENDENT
Mapping Platform
(MOABI)

INSTITUTIONAL
National Forest
Monitoring System
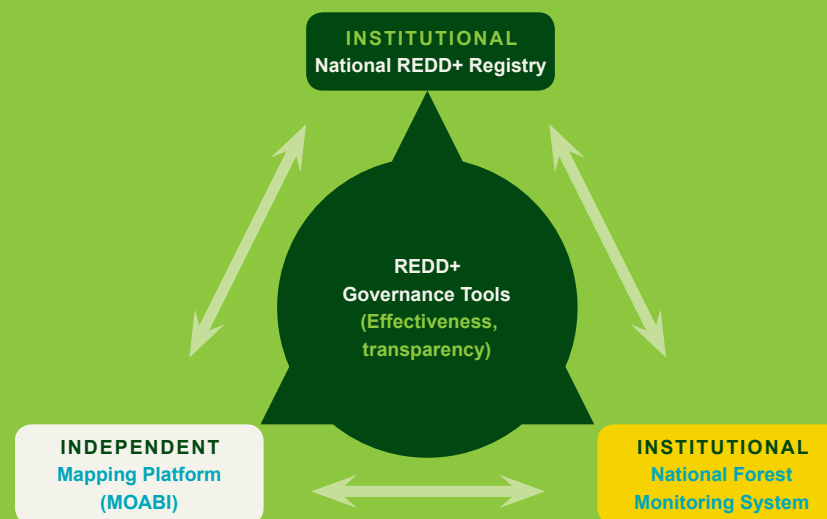
Verification (V)

The final component of the MMRV system is verification. Verification is an essential step in ensuring that (often self-reported) data is consistent with and meets the requirements laid out by international (or other third-party) standards. Under the IPCC GPG for LULUCF, verification is referred to as "the collection of activities and procedures that can be followed during the planning and development, or after completion of an inventory that can help to establish its reliability for the intended applications of that inventory". There are several options for how changes in forest can be verified, and again this section will focus on national-level processes (with subnational-level verification as an interim measure) under a future REDD+ mechanism.

© JULIE PUDLOWSKI / WWF

Under the UNFCCC it was agreed that developing countries should verify their emissions reductions using a process called International Consultation and Analysis (ICA). The ICA process will consist of two steps:

- A technical analysis of biennial update reports (BURs) by a team of technical experts in consultation with the UNFCCC party, resulting in a summary report. The information considered should include the national GHG inventory report along with NAMAs, including their impacts and the progress made in their implementation.

- A facilitative sharing of views, which will have as input the BURs and summary report referred to above.

The level of rigor for the verification system will depend greatly on the end use of the emissions reductions. If measured and reported emissions reductions are intended to be used for compliance purposes or as offsets, then strict standards will need to be applied to verification in line with national GHG inventory reporting under the UNFCCC or CDM.

Under the UNFCCC, verification is done through quality control and quality assurance mechanisms, either by those directly involved in the calculation or by a third party (Forestry and Forest Products Research Institute, 2013). On the other hand, within carbon markets, verification is done ex-post by an independent third party to confirm that the monitoring and reporting has been conducted according to prescribed methodologies.

Although guidance exists, many countries are still only in the early stages of development of their verification systems. In Doha there was also significant pushback by forest-owning countries against independent verification.

Early examples of independent verification systems have also emerged (e.g. MOABI in DRC) that use a combination of crowdsourcing and third-party data collection to verify forest area change.

WWF VIEWPOINT

WWF has developed several positions on MMRV for REDD+. In the run-up to Doha in November 2012, WWF produced a position paper on MMRV that called for REDD+ MMRV systems that are robust and accurate and that are consistent, comparable and generated in a transparent manner. This position paper is available at: *bit.ly/143srBA*.

Prior to that, WWF developed recommendations for the UNFCCC SBSTA meeting in June 2012 that called for efficient, inclusive and accurate MMRV systems. In these recommendations, WWF also stated that forest degradation and biodiversity should initially be tracked using proxy indicators. These are available at: *bit.ly/15GMC8y*.

FURTHER RESOURCES

GOFC-GOLD REDD+ Sourcebook, available at: *www.gofcgold.wur.nl/redd*

GOFC-GOLD Fire Project, available at: *gofc-fire.umd.edu*

IPCC Good Practice Guidance for Land Use, Land-use change and Forestry, available at: *www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.html*

IPCC Guidelines for National Greenhouse Gas Inventories, available at: *www.ipcc-nggip.iges.or.jp/public/2006gl*

MRV Community of Practice—REDD+ Community, available at: *www.reddcommunity.org/mrv-community*

BIBLIOGRAPHY

AIKAWA, S. et al. 2013. *REDD-plus Cookbook. How to Measure and Monitor Forest Carbon*. FFPRI, Forestry and Forest Products Research Institute. Research and Development Center. Tsukuba, Japan.

DANIELSEN, F. et al. 2011. At The Heart Of REDD+: A Role For Local People In Monitoring Forests? *Conservation Letters*, 4 (2), 158-167.

FRITZ, S. et al. 2009. Geo-Wiki.org: The Use of Crowd-Sourcing To Improve Global Land Cover. *Remote Sensing*, 1 (3), 345-354.

HARRIS, N. L. et al. 2012. Baseline Map Of Carbon Emissions From Deforestation In Tropical Regions. Science, 336, 1573–1576.

PRATIHAST, A. K. et al. 2013. Linking Community-Based And National REDD+ Monitoring: A Review Of The Potential, Carbon Management. *Carbon Management*, 4, 91-104.

SAATCHI, S. S. et al. 2011. Benchmark Map of Forest Carbon Stocks in Tropical Regions Across Three Continents. *Proceedings of the National Academy of Sciences*, 108, 9899–9904.

SY, V. D. et al. 2012. Synergies of Multiple Remote Sensing Data Sources for REDD+ Monitoring. *Current Opinion in Environmental Sustainability*, 4, 696-706.

END NOTES

1. Decision 2/CP.13.
2. ibid. Noting that the decision only requires reporting on deforestation.
3. Including, if appropriate, subnational systems as part of national monitoring systems and recognizing again the IPCC GPG for LULUCF.
4. Decision 4/CP.15.
5. Decision 1/CP.16.
6. FCCC/SBSTA/2012/L.9/Rev.1.
7. "Complete" means the provision of data and information that allows the technical analysis of the results.
8. Described in Annex III to Decision 2/CP.17.
9. Described in Annex IV of Decision 2/CP.17.
10. This is not always the case. For instance, in peat swamps BGB is the dominant source of carbon fluxes.
11. This type of data can be gathered from forest management concessions; however, this approach limits the scope to commercial species only.
12. Identified in the stratification process.
13. Synergies among plot data and ancillary data are currently being explored. The feasibility of using such synergies has been established (Asner et al., 2009, 2010, 2011, Skole et al., 2009).

WWF GUIDE TO BUILDING REDD+ STRATEGIES

Tracking REDD+
REFERENCE LEVELS

DOWNLOAD THIS CHAPTER

Key Messages

■ Robust and transparent REDD+ reference levels (RLs) are the benchmarks for assessing a country's performance in implementing REDD+, and so are a vital part of a REDD+ national or subnational strategy. RLs also ensure climate integrity in an international REDD+ system. At the same time, REDD+ RLs may be a yardstick for the amount of effort needed to reduce emissions, thus signalling the level of resources that a country will need to successfully implement REDD+.

■ RLs are methodologically linked to forest monitoring, measurement, reporting and verification (MMRV) systems, because they seek to answer whether REDD+ is performing quantitatively. As countries strengthen their MMRV programmes and move through the Intergovernmental Panel on Climate Change (IPCC) tiers, RLs will be important guideposts for what countries will need to monitor, measure, report and verify.

■ To build an RL, these five key elements must be considered:

  › Boundaries: geographic and temporal;

  › Classifications: how land and forest types are classified;

  › Activity data: rates of loss per land-use type;

  › Emissions factors: net CO_2e losses per hectare of forest types, including allometric equations;

  › Attention to uncertainty and transparency.

INTRODUCTION

Reference levels provide three key functions for the implementation of REDD+. First, they are the benchmark against which future REDD+ performance can be measured. RLs are therefore critical to ensuring the overall integrity of our climate system.[1] One of the fundamental pillars of REDD+ is to link measurable reductions in emissions from deforestation and forest degradation to payments. Clear, transparent and robust RLs are a cornerstone of this process.

Second, RLs are an important yardstick for the level of additional effort countries will need to undertake to reduce emissions from the forest sector. In this regard they provide signals to developing countries about what programmes and policies may be needed and will help benchmark the level of finance a country may need to successfully implement REDD+.

Finally, RLs are important for forest monitoring, measurement, reporting and verification (MMRV) systems (e.g. in the sourcing of data, development of field measurements and choice of allometric equations) (see *MMRV* chapter). For example, if an RL in a country uses certain forest classes, MMRV platforms should try to use comparable forest classes to allow for consistency in the measuring of emissions reductions.

For these reasons, RLs have become a central component of the REDD+ discussion, both under the United Nations Framework Convention on Climate Change (UNFCCC) and within the voluntary carbon markets, voluntary certification schemes and the multilateral funding institutions.

RLs also span multiple disciplines: At one end of the spectrum, they have a very technical component with the need for strong capacity in remote sensing, GIS, statistics and carbon accounting. At the other end, RL discussions can be highly politicized as they can potentially determine the scale of finance that a country (or jurisdiction) can access. RLs can also overlap with econometrics, socioeconomics and economic development when determining the correct and appropriate use of modelling to determine RLs.

It is important to note that the term *reference level* is often used interchangeably with other key terms, including *baselines*, *reference emissions levels* and *compensation baselines*. For the purpose of this report, we will use the UNFCCC definition of the term reference level from the 17th UNFCCC Conference of the Parties (COP 17) as the amount of forest-based emissions—expressed in tonnes of CO_2 equivalent per year—that are the benchmarks for assessing a country's performance in implementing REDD+[2] (see Figure 1).

FIGURE 1: A GRAPHIC DEPICTION OF A REFERENCE LEVEL (RL) AND RELATED BENCHMARKS

A   Country Reference Level   B   Benchmark to trigger international support

C   Benchmark to trigger crediting of emissions to be sold in the offset markets

D   Country REDD+ achievements
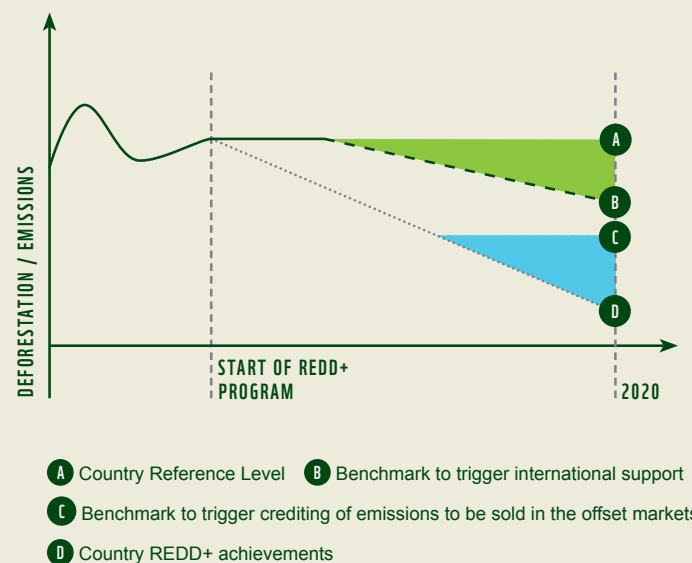
INTERNATIONAL POLICY CONTEXT

RLs are being negotiated under several key international forums. The UNFCCC has been discussing and negotiating RLs for around five years within the discussions under the Subsidiary Body for Scientific and Technical Advice (SBSTA). Over this period UNFCCC parties and observers have developed and submitted a wide range of views, participated in multiple workshops and generated pages of decisions and texts (Foundation for International Environmental Law and Development (FIELD), 2013), which will be summarized below. The voluntary carbon markets also provide a signalling body for the development of REDD+ RLs. For example, the Verified Carbon Standard (VCS) has developed the Jurisdictional and Nested REDD+ methodology as well as several other REDD+-specific methodologies under the Agriculture, Forestry and other Land Use (AFOLU) working group.[3] Other voluntary certification schemes (e.g. American Carbon Registry, CarbonFix, Gold Standard) have provided guidance on REDD+ RLs (see *Further resources* for details), and several multilateral financial institutions are now beginning to develop guidance on REDD+ RLs. Most notably, the Forest Carbon Partnership Facility (FCPF) is now developing guidance under its Carbon Fund and is expected to have a framework in place by mid-2013. Finally, some countries have already defined their RLs as part of bilateral REDD+ funding agreements (for example, Guyana as part of the Guyana-Norway REDD+ agreement).[4]

The following sections will summarize the major decisions that have been achieved under the UNFCCC on RLs.

COP 13: Bali, 2007

In 2007, at COP 13 in Bali, parties agreed on a framework for developing the methodological elements of REDD+ in an Annex to the Decision on REDD+.[5] In this Annex it was stated that "subnational approaches, where applied, should constitute a step toward the development of national approaches, reference levels, and estimates".

COP 15: Copenhagen, 2009

The first substantive decision on RLs came in 2009 at COP 15 in Copenhagen, where it was agreed that "developing country parties in establishing [RLs] should do so transparently, taking into account historic data and adjusting for national circumstances, in accordance with relevant decisions of the Conference of the Parties".[6] This decision sent an important signal to parties that RLs could be adjusted and might not be a purely historical average or trend of emissions over a given period.

COP 16: Cancun, 2010

In 2010, at COP 16 in Cancun, developing country parties wishing to engage in REDD+ were invited to develop a "national [RL] or, if appropriate, as an interim measure, subnational [RLs]".[7] It was further stipulated that national RLs could be a combination of subnational RLs. This invitation was the first of its kind under the UNFCCC and provided a signal to developing countries that they should begin the development of their REDD+ RLs.

COP 17: Durban, 2011

In 2011, at COP 17 in Durban, parties reached a landmark decision on RLs.[8] This decision provided the following key guidance for countries submitting REDD+ RLs:

- RLs are the benchmarks for assessing a country's performance in implementing REDD+.
- Invited countries are to submit their proposed RLs and accompanying information and rationale when they are ready and on a voluntary basis.
- RLs are an iterative process (they would not be a one-time submission), and subnational RLs could be used as an interim step toward national RLs.
- RLs should be expressed in tCO_2e/year.

The decision also detailed guidance in an Annex for how countries should develop RLs:

- Information should be transparent, complete and accurate;
- Information should include data sets, methods, models, assumptions, descriptions of changes from other submitted information, pools, gases and activities;
- Information should include forest definitions that are consistent with UNFCCC national inventories or submissions to other international organizations, and if there is an inconsistency, provide an explanation as to why.

At COP 17, parties also established a process for *assessing* RLs. The decision for the assessment process is still ongoing.

NATIONAL AND SUBNATIONAL OPTIONS

Practitioners developing national and subnational RLs must address the following five key elements:

- **Boundaries:** What are the geographic boundaries and timeframes of the RL? Will it be national or subnational? Over what period will the RL be constructed?
- **Classification:** How will land and forest types be classified? What are the emissions factors associated with these classes?
- **Activity data:** What activities will be included in the RL (e.g. deforestation, degradation, enhancement)?
- **Emissions factors:** Which pools and gases will be included in the RL? How will activity data be converted into emissions data?
- **Uncertainty and transparency:** How is uncertainty calculated? How will this be communicated?

In addition to these questions, developers of national or subnational RLs may also consider:

- **Connection to national forest monitoring systems:** How will this tie in with a national forest monitoring system?
- **Adjustments:** How will national circumstances be taken into account?

Before diving into these issues, it is worth sketching out the basic elements of an RL calculation.

First, at its simplest level,[9] a historical RL can be expressed as the average CO_2 emissions resulting from forest degradation and deforestation over a number of years, as shown in the equation below:

$$Reference\ Level = \frac{\sum Em_{def} + \sum Em_{deg} - \sum Em_{rem}}{y}$$

Where $\sum EM_{def}$ is the sum of emissions from deforestation over "y" years, $\sum EM_{deg}$ is the sum of emissions from degradation over "y" years, $\sum EM_{rem}$ is the sum of emissions removals over "y" years and is the total number of years.

The emissions can be calculated simply as the product of activity data (i.e. the change in land cover or forest cover) and the emissions factor for that activity (i.e. how much CO_2 is emitted when a hectare of forest is lost), expressed by the following equation:

$$\sum Em = \sum activity\ data \cdot emissions\ factors$$

Activity data are expressed in hectares changed per year (ha/yr), and emissions factors are expressed in tonnes of carbon dioxide per hectare (tCO_2/ha). By multiplying emissions factors and activity data, we can estimate the emissions in tCO_2/year. The key thing to understand is that both activity data and emissions factors must use the same land cover classifications. If activity data uses one type of classification and emission factors use a different type of classification, then multiplying the two terms together would not produce a logical result.

With these simple equations in mind, let us now look at the individual steps for constructing a RL.

Boundaries

Scale

The Durban decision (made at COP 17 in Durban) clearly allows countries to submit interim subnational RLs and also permits countries to update their RL in light of improved data or technologies. The first question a country will need to answer is whether it will choose to submit a national or a subnational RL (as an interim step toward a national RL). This decision could be based on a range of factors, including a country's political position on subnational RLs as well as its capacity and data to implement an RL at the national level. The government of Nepal, for example, is developing both national and subnational RLs. Because Nepal has substantially more data for the lowland forests bordering India (called the Terai) than for the high mountain forests, it is developing an interim subnational RL for the lowland region first and will use this to inform the national RL (see *Focus*).

A further consideration in the selection of scale is the alignment with jurisdictional boundaries within a country. In countries like Brazil, for example, where states can cover areas the size of countries, the alignment of subnational RLs with state boundaries might be a logical choice. In countries with smaller jurisdictional authorities (e.g. Nepal, which has 76 districts), other options may be more appropriate that are based on physiological (e.g. altitudinal) or ecological (e.g. based on endangered species' habitats) boundaries.

© KEVIN SCHAFER / WWF-CANON

A final consideration for the choice of scale of subnational RLs is whether the proposed boundary is representative of deforestation patterns in the region (e.g. choosing an area that has little or no historical deforestation would not be a representative sample of larger deforestation trends). Increasing the scale of RLs will eliminate some of these risks and errors that subnational RLs can introduce.

Time frame

UNFCCC decisions have clearly stated that RLs should be based on historical data (i.e. data from a period in the past).[10] When selecting historical data, however, very little guidance has been given on what length of time is appropriate and how recent a period should be. As a general rule, many countries are exploring data for either the past five or 10 years, but this system is open to interpretation. Countries that have decreasing rates of

deforestation (e.g. Brazil) would benefit from an RL that goes further back in time (i.e. that incorporates the country's higher rates of deforestation), whereas countries that have higher recent rates of forest loss (e.g. Bolivia) may choose to use shorter, more recent time periods for their proposed RLs.[11]

While emissions from fossil fuels within a country tend to vary only incrementally from a statistical mean, emissions from deforestation show larger year-to-year fluctuations. These are often the result of regional climate patterns and other stochastic events (e.g. spikes in land clearing triggered by increases in food prices). It will therefore be important, in determining an RL, to choose a period of time that is long enough to reduce the random noise from yearly variations.

Another key factor for governments in choosing time periods will be the availability of data. As historical activity data will primarily be taken from satellite data, the time period will depend largely on the availability of satellite imagery over historical periods (see *Focus* for an example in Nepal). While there is plenty of free data and software available, there are also capacity, time and other constraints that will influence how many years of data to include in RL calculations.

Forest classification

As referred to above, after a country decides which activities to include in the RL, it must choose appropriate land and forest classifications. While this appears to be a simple task, it can be challenging both technically and politically as many countries have different and often competing versions of

classifications and maps of land cover in concurrent use. The challenge of establishing a common metric to allocate land cover into classes is one of the thorniest initial challenges that countries will face. The IPCC Guidelines for National GHG Inventories provides some guidance on how to approach this task (see Focus, right), but ultimately countries will need to balance competing interests, varying resolutions and different interpretations of what types of land a country possesses. A combination of stratification and sampling will be needed to best define forest classes for a given country (see *MMRV* chapter).

The Durban decision allows countries to use different definitions or classifications of forest than previous international communications. The submission of an RL is an important opportunity for countries to propose their best data for their forest inventories. If a country chooses to use different definitions from its previous national communications, however, it must explain why these different definitions were used.

Activity data

Activity data is normally derived from remote sensing (satellite or airplane-mounted) products that estimate how many hectares of a certain forest type are lost, degraded or enhanced. Countries will have various remote sensing platforms that they already use to varying degrees, and government agencies are often complemented by academic and NGO support (see *MMRV* chapter).

UNFCCC decision 12/CP.17 requested that parties submit information on "Pools and activities... which have been included in [RLs] and the reasons for omitting a pool and/or

activity from the construction of [RLs], noting that significant pools and/or activities should not be excluded". The choice of activity can include deforestation, degradation and enhancement,[12] and countries will need to justify which of these activities they are including and why.

The first point of assessment for countries when choosing scope is, whether they will be doing land-based accounting or activity-based accounting. Following the rationale from Kyoto-based land-use accounting, we can apply the following general rules (IPCC, 2000).

Land-based accounting

Under a land-based accounting approach, accounting begins with the total carbon stock change on land units subject to REDD+ activities. Implementing this rule involves first identifying land units on which applicable activities occur. Next, the total change in carbon stocks on these land units is determined. Adjustments can then be made to reflect decisions that the parties may adopt regarding baselines, leakage and timing issues. Aggregate emissions or removals are the sum of stock changes (net of adjustments) over all applicable land units.

Activity-based accounting

An activity-based approach begins with the carbon stock change attributable to designated activities. First, each applicable activity's impact on carbon stocks is determined per unit area, which is then multiplied by the area on which each activity occurs. This equation may also include adjustments to reflect policy decisions by the parties. Aggregate emissions or removals are calculated by summing across applicable activities. To avoid a given area of land being counted more than once if it is

IPCC APPROACHES FOR LAND-USE CHANGES

Adapted from IPCC, 2006

The IPCC Guidelines for National GHG Inventories describes three approaches to represent areas of land use with six broad categories: (i) Forest Land (ii) Cropland (iii) Grassland (iv) Wetlands (v) Settlements (vi) Other Land. These are presented below in order of increasing information complexity.

Approach 1: Total land-use area, no data on conversions between land uses
Approach 1 is the simplest and uses land-use area totals within a defined spatial unit, which is often defined by political boundaries such as a country, province or municipality. Under Approach 1 only net changes in land-use area can be tracked through time. Consequently, the exact location or pattern of land-use change and the exact changes in land-use categories cannot be ascertained.

Approach 2: Total land-use area, including changes between categories
Approach 2 provides an assessment of both the net losses and gains in specific land-use categories as well as what these conversions represent (i.e. changes both from and to a category). Tracking land-use conversions in this manner will normally require estimation of initial and final land-use categories for all conversion types (e.g. Forest Land converted to Cropland), as well as estimation of total area of unchanged land by category (e.g. Forest Land remaining Forest Land). The final result of this approach can be presented as a non-spatially-explicit land-use conversion matrix.

Approach 3: Spatially-explicit land-use conversion data
Approach 3 uses spatially explicit observations of land-use categories and land-use conversions, often tracking patterns at specific point locations and/or using gridded map products such as those derived from remote sensing imagery. The data may be obtained by sampling, wall-to-wall mapping techniques, or a combination of these two methods. The main advantage of spatially explicit data is that analysis tools such as GIS can be used to link multiple spatially explicit data sets (such as those used for stratification) and describe in detail the conditions on a particular piece of land prior to and after a land use conversion. This analytical capacity can improve emissions estimates by better aligning land use categories (and conversions) with strata mapped for classification of carbon stocks and emission factors by soil and vegetation type.

subject to multiple activities, each land unit can contain no more than one activity. In this case, the combined impact of multiple practices applied in the same area would be considered a single activity.

Under either a land-based or activity-based approach, parties should attempt to identify and include the major activities that are causing emissions reductions or removals and include these in the RL calculation.

Emissions factors

Emissions factors describe how much carbon is in a given unit of a particular forest type. These are generated by combinations of default values (IPCC Tier 1 default values for broad classes of land throughout the world) or more precise estimates that could be generated using plot data, field measurements and allometric equations that convert plot measurements to biomass or carbon estimates.

The IPCC recognizes six carbon pools and three gases (IPCC, 2006). The six carbon pools are:

- Above-ground biomass
- Below-ground biomass
- Deadwood
- Litter
- Soil organic matter
- Harvested wood products

The three greenhouse gases associated with land-use change are:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)

There are two fundamentally different and equally valid approaches to estimating stock changes in these pools: (1) the process-based approach called the "Gain-Loss Method", which estimates the net balance of additions to and removals from a carbon stock, and (2) the "Stock-Difference Method", which estimates the difference in carbon stocks at two points in time (see *Focus*).

Error reporting and transparency

Given the uncertainty around forest-based emissions, RLs should be reported transparently and with indications of statistical uncertainty. UNFCCC decisions have repeatedly requested that developing countries use the IPCC Good Practice Guidelines (GPG) as the basis for developing RLs. While the IPCC GPG were not designed specifically for REDD+, they do provide a map for countries to evolve from simplified estimates of GHG inventories to more nuanced national and statistically robust descriptions of GHG emissions from various sectors. Finally, countries should, where possible, use statistics and error propagation to communicate not only mean estimates of emissions but also confidence intervals and descriptions of uncertainty within RLs.

The Durban decisions also called for countries to create RLs in a way that makes the data, methods, models and calculations transparent and reproducible by others. While the Durban decision calls for transparency, it does not give clear guidance on how data, methods, maps and potentially many gigabytes of data can be publically shared for others to use and validate proposed RLs. Countries have many options, such as making supporting data available on government websites, public portals, peer-reviewed publications and

DEVELOPMENT OF A REFERENCE LEVEL IN NEPAL

The Government of Nepal, in collaboration with WWF, is developing a subnational RL for the Terai Arc Landscape (TAL). The RL will have the following key assumptions:

Scope
The RL for the TAL includes deforestation, degradation and enhancements using IPCC Approach 3 (i.e. spatially explicit changes in land area). Data has been derived from a combination of Landsat data with ground plots.

Forest classification
The TAL has been classified into three forest classes (shorea robusta—commonly known as sal, mixed hardwood and riverine). The RL calculations will use a combination of these forest types with a further stratification based on canopy density in order to show changes in the area of strata that have meaningful differences in carbon.

Scale
The RL will be subnational for the TAL, based on the jurisdictional boundaries of 12 districts. The reason for this is primarily to enable REDD+ implementation at a jurisdictional level, because these districts are in the best position to implement policies to control deforestation and degradation and also to ensure safeguards are respected and any distribution of benefits has appropriate oversight. Additionally, implementing REDD+ at the jurisdictional level will minimize the risk of leakage because rural migration is less common between districts.

Time frame
The RL will be calculated for the period 1999–2011 with an option to extend back to 1994. To maintain consistency with previous national communications, the period 1994–2011 would be preferable; however, Landsat images between 1994 and 1999 will not have the same quality and level of consistency as the period from 1999 to present day.

Pools and gases
The RL will include all the major pools, including above-ground and below-ground biomass. Due to the uncertainties in measurement and the relatively small fluctuations in carbon emissions, however, soil carbon will not be included in the RL. Given the lack of other dominant sources, only CO_2 emissions will be considered in the RL.

supplementary materials. A more direct approach would be for countries to submit all the relevant files to the UNFCCC and request that the secretariat make all files available to the international community.

Adjustments

Recognizing that historical RLs may not be an appropriate or fair benchmark for some countries (such as countries with historically low deforestation rates), the UNFCCC decisions allow for countries to make adjustments to their historical data. These adjustments have never been defined but could reflect projections of future threats or future growth in a particular sector of the economy that causes deforestation (e.g. palm oil). For any adjustments to historical data, countries will need to state and defend their assumptions.

A variety of proposals have been put forward to elaborate how RLs might be adjusted to accommodate for high-forest cover, low-deforestation (HFLD) countries (Fonseca et al., 2007). These include adjustments against global averages, payments for carbon stocks, and projections based on models that describe or predict future threats (Busch et al., 2009, Griscom et al., 2009). The use of modeling will introduce the need for more complex RL submissions to the UNFCCC and will almost certainly require additional technical capacity (see Figure 2).

As a historically low deforestation country, Guyana provides an example of how this might work in practice (Gutman and Aguilar-Amuchastegui, 2012).[13] Under the terms of the bilateral agreement with Norway, Guyana will receive REDD+ payments based on a twofold criteria:

- One part of the payments will be for Guyana's reduction of its annual deforestation rate below its historical RL of 0.03 per cent a year.

- The other part of the payments will pay for Guyana to maintain its deforestation rates below the global historical RL of tropical countries, reported by FAO to be 0.52 per cent a year for 2000–2010.

Payments would be drastically reduced if Guyana's annual deforestation rate goes above 0.056 per cent (the 2010 deforestation rate) and stopped altogether if the deforestation rate reaches 0.09 per cent.

It should be noted that project-level initiatives have gravitated toward projected RLs (to try to attribute additional reductions to projects), whereas the UNFCCC-linked processes have gravitated more toward historical RLs (including adjustments) as this is more comparable to an Annex I commitment of X per cent reduction below a base year.

Connection to other forest monitoring systems

There are several ways in which RL development can tie in with forest monitoring systems. First, countries can link up their RL data with national forest inventories (NFIs). The choice of whether or not to do so will largely be a question of the levels of certainty within the existing data and the extent to which it covers

appropriate geographic regions within the country. Many REDD+ countries, however, already have the NFI as the main way of generating their emissions factor data, and tying in this data with emerging RL data will be an important consideration for countries with advance NFIs.

Second, RLs do not have to be about just carbon. Indeed, one of the most active debates within the UNFCCC is whether REDD+ is about just carbon or whether it is a system for encouraging positive outcomes

for civil society, communities, biodiversity, ecosystem services and other related benefits. Countries are not restricted in what they may include in their RLs and may also wish to communicate other quantitative data on their historical forest cover. Finally, as outlined in the introduction, RLs will be important references for MMRV systems, and data between these systems should be comparable and consistent. The design of RLs should therefore take into consideration the costs and data-processing requirements of future MMRV systems.

FIGURE 2: EXAMPLES OF POSSIBLE RL IN COUNTRIES WITH LOW OR HIGH LEVELS OF DEFORESTATION

A Strictly historical RL   B Historical RL adjusted upwards or downwards   C RL based on modeling
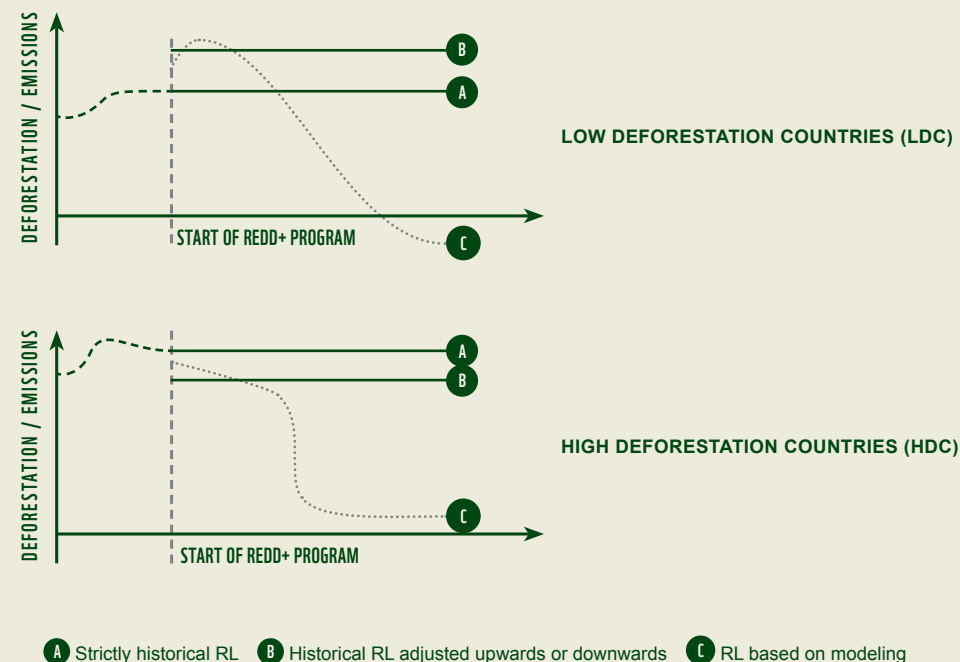
ESTIMATING CHANGES IN CARBON POOLS VIA THE GAIN-LOSS OR THE STOCK-DIFFERENCE METHODS

There are two fundamentally different and equally valid approaches to estimating stock changes in carbon pools: (1) the process-based approach called the "Gain-Loss Method", which estimates the net balance of additions to and removals from a carbon stock and (2) the stock-based approach called the "Stock-Difference Method", which estimates the difference in carbon stocks at two points in time.

Gain-Loss Method
Annual carbon stock changes in any pool can be estimated using the Gain-Loss Method, which uses the following simple equation:

Where ΔC = annual carbon stock change in the pool, ΔCG = annual gain of carbon, ΔCL = annual loss of carbon, expressed in tonnes C yr-1.

Gains can be attributed to growth (increase of biomass) and to transfer of carbon from another pool (e.g. transfer of carbon from the live biomass carbon pool to the dead organic matter pool due to harvest or natural disturbances). Losses can be attributed to transfers of carbon from one pool to another (e.g. the biomass lost during a harvesting operation is a loss from the above-ground biomass pool), or emissions due to decay, harvest, burning, etc. The method used is called the Gain-Loss Method, because it includes all processes that bring about changes in a pool.

Stock-Difference Method
The Stock-Difference Method can be used where carbon stocks in relevant pools are measured at two points in time to assess carbon stock changes, using the following equation:

Where Ct1 = carbon stock in the pool at time t1 and Ct2 = carbon stock in the pool at time t2, expressed in tonnes C.

If the C stock changes are estimated on a per hectare basis, then the value is multiplied by the total area within each stratum to obtain the total stock change estimate for the pool. In some cases, the activity data may be in the form of country totals (e.g. harvested wood) in which case the stock change estimates for that pool are estimated directly from the activity data after applying appropriate factors to convert to units of C mass. When using the Stock-Difference Method for a specific land use category, it is important to ensure that the area of land in that category at times t1 and t2 is identical, to avoid confounding stock-change estimates with area changes.

Gain-Loss or Stock-Difference
The Gain-Loss Method lends itself to modelling approaches using coefficients derived from empirical research data. These will smooth out inter-annual variability to a greater extent than the Stock-Difference Method, which relies on the difference of stock estimates at two points in time. Both methods are valid so long as they are capable of representing actual disturbances as well as continuously varying trends and can be verified by comparison with actual measurements.

WWF VIEWPOINT

WWF has developed several important position papers on RLs.

In 2012, in advance of COP 18, WWF produced a paper on the assessment process for REDD+ RLs.[14] This paper called for several key outcomes:

- RL assessments performed by independent LULUCF and other qualified experts are necessary to ensure robust and balanced teams.
- Experts should be allowed to submit requests to countries for clarifications or rationale for values used.
- RL assessments should be completed within six months of a party's submission of a proposed RL to the secretariat.
- Public comments should be solicited through the UNFCCC REDD Web Platform.[15]
- Clear guidance should be developed for technical review teams, including the need to assess underlying models, assumptions and the defensibility of adjustments.

In 2009, in the run up to Copenhagen, WWF's position on Forests and Climate Change Mitigation[16] stated that a country's RL involves the identification and measurement of emissions reductions in comparison to a business-as-usual (BAU) scenario. WWF suggested that broad participation should be encouraged, either through flexible RLs based on national circumstances or some other mechanism. In addition WWF provided guidance on the proposed activities and requirements for the three phases of national REDD development:

- **Phase 1:** Initial cut of national RL with identification of gaps in data, monitoring capacity and analytical capability that must be closed prior to arriving at a final RL;
- **Phase 2:** Final national RL established in a manner so that significant improvement from BAU is required prior to generation of verified emissions reductions;
- **Phase 3:** 2 Fully-functioning MRV capability operationalized. Assessment results should be independently verified and fully transparent.

More recently, WWF proposed modalities for RLs in a submission to the FCPF Carbon Fund.[17] This submission called for several key elements:

- While RLs can be either *historical* or *projected* (i.e. for national circumstances), to maintain environmental integrity, only emissions reductions below historical RLs may be used as offsets.
- RLs should be based on a historical interval (called a "reference period") of 10 years ending no sooner than 2010.
- The scale of the programme area should cover a "significant portion of the territory" with a substantial impact relative to priorities in the national REDD+ strategy.
- RLs should include reporting of accuracy and error following the most recent IPCC guidance and guidelines.
- Technical advisory panels (TAPs) should be established to evaluate RLs against guidance that the FCPF Carbon Fund develops using UNFCCC and IPCC guidance as minimum criteria.

FURTHER RESOURCES

Key internal WWF resources

Gutman and Aguilar: *Reference Levels and Payments for REDD+: Lessons from the recent Guyana–Norway Agreement.* WWF, Washington, DC, USA. Available at: *bit.ly/15EZT1n*

Durban Position Paper on RLs. Available at: *bit.ly/14NhEfG*

Key external resources

- *IPCC Good Practice Guidance for LULUCF*, available at: *www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.html*
- *2006 IPCC Guidelines for National Greenhouse Gas Inventories*, available at: *www.ipcc-nggip.iges.or.jp/public/2006gl*
- *UNFCCC Expert Working Group Report on Reference Levels*, available at: *unfccc.int/resource/docs/2011/sbsta/eng/inf18.pdf*
- *Union of Concerned Scientists (UCS) Points of Reference*, available at: *www.ucsusa.org/assets/documents/global_warming/Points-of-Reference.pdf*
- Tropical Forest Group (TFG) Submission to SBSTA, available at: *unfccc.int/resource/docs/2011/smsn/ngo/333.pdf*
- Meridian Institute: *Modalities for REDD+ Reference Levels: Technical and Procedural Issues*, available at: *www.redd-oar.org/links/RL_report.pdf*
- Meridian Institute: Guidelines for REDD+ Reference Levels: Principles and Recommendations, available at: *www.redd-oar.org/links/REED+RL.pdf*

BIBLIOGRAPHY

BUSCH, J., STRASSBURG, B., CATTANEO, A., LUBOWSKI, R., BRUNER, A., RICE, R., CREED, A., ASHTON, R. and F. BOLTZ. 2009. Comparing climate and cost impacts of reference levels for reducing emissions from deforestation. *Environmental Research Letters*, 4.

FONSECA, G. A. B. D., RODRIGUEZ, C. M., MIDGLEY, G., BUSCH, J., HANNAH, L. and R.A. MITTERMEIER. 2007. No Forest Left Behind. *PLoS Biology*, 5, 216.

FOUNDATION FOR INTERNATIONAL ENVIRONMENTAL LAW AND DEVELOPMENT (FIELD). 2013. *Guide for REDD-plus negotiators*. FIELD, London, UK.

GRISCOM, B., SHOCH, D., STANLEY, B., CORTEZ, R. and N. VIRGILIO. 2009. Sensitivity of amounts of distribution of tropical forest carbon credits depending on baseline rules. *Environmental Science and Policy*, 12, 897-911.

GUTMAN, P. and AGUILAR-AMUCHASTEGUI, N. 2012. Reference Levels and Payments for REDD+: *Lessons from the recent Guyana–Norway Agreement*. WWF, Washington, DC, USA. bit.ly/15EZT1n

IPCC. 2000. *IPCC Special Report: Land use, Land-use Change, and Forestry*. IPCC, Geneva, Switzerland.

IPCC. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme*. IPCC, Geneva, Switzerland.

END NOTES

1. Setting inflated reference levels would allow countries to claim emissions reductions that are not additional to previous efforts (known as "hot air").
2. Under the UNFCCC discussions, the terms "forest reference level" (FRL) and "forest reference emission level" (FREL) are both still used concurrently. The distinction between these terms is twofold. First, FRELs are typically used to imply that emissions must be measured, whereas FRLs may not depend on emissions assessments (i.e. they could use simpler metrics such as forest area change). Second, FRELs are sometimes used to distinguish between activities that only cause emissions (e.g. deforestation and degradation) versus activities that conserve, sustainably manage or enhance forest carbon stocks (the + in REDD+).
3. More information on JNR and AFOLU can be found at v-c-s.org/sites/v-c-s.org/files/FactSheet%20JNRI%202012%20-%20MidRes.pdf and v-c-s.org/node/286, respectively.
4. The reference level that Guyana ultimately submits to the UNFCCC might not be the same as that used under its bilateral arrangement with Norway.
5. The Annex is at the end of Decision 2/CP.13.
6. Decision 4/CP.15.
7. Section III C of Decision 1/CP.16.
8. Decision 12/CP.17.
9. These are very simplified presentations, and most terms and equations can be further elaborated. However, by using these simple equations the reader may be able to appreciate the subsequent discussions of the key issues RLs must address. It should also be noted that some countries may choose to report only RLs for deforestation and not estimate emissions from degradation. Countries may also choose, in other RLs, to include sequestration and storage of carbon through afforestation, reforestation or carbons stock enhancement.
10. The question of adjustments to historical data will be discussed later.
11. This conundrum raises an important question of overall integrity of REDD+ RLs. Given that the UNFCCC did not make hard and fast rules for what periods could be considered, it is possible that with each country selecting the most advantageous period of time (times that capture the highest rates of deforestation), a global aggregate of REDD+ RLs some years down the road could yield inflated estimates of emissions from deforestation and degradation
12. REDD+ includes five activities, but SFM and conservation are essentially the inverse of degradation and deforestation.
13. This was established using the proposal known as the combined incentives approach developed by Strasburg et al., 2009.
14. awsassets.panda.org/downloads/rl_external_brief_11_12_1.pdf.
15. unfccc.int/methods_science/redd/redd_web_platform/items/4531.php.
16. awsassets.panda.org/downloads/wwf_redd2_paper_web.pdf.
17. www.forestcarbonpartnership.org/sites/forestcarbon-partnership.org/files/Documents/PDF/Jan2013/WWFsubmission_CFissuepaper2.pdf.

WWF GUIDE TO BUILDING REDD+ STRATEGIES

Tracking REDD+

REDD+ REGISTRIES

DOWNLOAD THIS CHAPTER

Key Messages

■ A national or subnational REDD+ registry is a necessary component of tracking emission reductions and finance for REDD+. Beyond the biannual country reporting to the United Nations Framework Convention on Climate Change (UNFCCC), there are many instances in which registering national and subnational REDD+ activities will be necessary to implement a REDD+ strategy, including: tracking REDD+ programmes and projects, recording carbon emissions reduction achievements, tracking and recording compliance with social and environmental safeguards, facilitating international and national results-based payments, facilitating the operation of carbon markets, and more.

■ As in other areas of the climate agenda, it is not yet clear what functions of a REDD+ registry will be performed by the UNFCCC at an international level and what REDD+ registry functions will be the responsibility of national or subnational registries. Yet, currently many REDD+ funders require, and many REDD+ countries find necessary, the implementation of REDD+ national registries to track the multiple on-the-ground REDD+ actions that have launched in recent years.

■ For REDD+ countries looking for guidance and best practices, the UNFCCC is a good starting point (e.g. the International Transaction Log and the recently approved voluntary climate registry). Beyond the UNFCCC, there are a good number of international climate-related registries, both public and private, including a few REDD+ registries (e.g. the REDD+ database) that can provide valuable lessons for building national or subnational REDD+ registries.

■ Developing and implementing a national or subnational REDD+ registry will require making many choices, including:

› Purpose and scope: should it be a nationally appropriate mitigation actions (NAMAs) registry that includes REDD+ actions, or should it be an exclusive REDD+ registry. Should it be national or subnational in scale;

› Functions: what to register;

› Data management: what to do in-house and what to outsource, and the detail of information to collect;

› Governance: how the registry should be managed and where the registry should be institutionally located;

› Technology: which technology to use to capture and store the data.

All of these decisions will affect the efficiency, transparency and accuracy of the registry as well as its cost. Again, early examples of registries can inform a country choice.

INTRODUCTION

A registry is, in essence, a platform—in the past a ledger and nowadays an electronic platform—that gathers and makes available information on particular issues or programmes. Two of the most ancient and still enduring examples are civil registries that track births, marriages, divorces, deaths and other vital changes, and property registries that track the ownership and transfer of land and other major assets.

Depending on their purpose, registries may function at a local, national and/or international scale. And depending on their legal status, the information they compile may be information only, or may carry a legal status.

For some time now the UNFCCC and the broader climate change and REDD+ community have been discussing and attempting to put up climate registries to help with one or more of the functions described in Table 1.

The breadth and depth of the few existing climate-related registries and the many being considered vary widely, from registries managed by an international secretariat to national and subnational ones—from global (e.g. a NAMAs registry) to sectoral (e.g. a REDD+ registry) and from multifunctional (e.g. the NAMAs registry endorsed in Cancun) to a specialized registry like an emissions trading registry.

Regarding the development of a national or subnational REDD+ strategy, a registry is a logical and necessary component of tracking REDD+. The chapter on MMRV discusses reporting in terms of the biannual country reporting to the UNFCCC. But there are many other instances where systematically registering REDD+ activities would be necessary to: keep track of REDD+ programmes and projects, record achievements, record ERs and track their trade, track and record compliance with social and environmental safeguards, and more.

As in other areas of the climate agenda, it is not yet clear what functions of a REDD+ registry will be performed by the UNFCCC at an international level and what REDD+ registry functions will be the responsibility of national or subnational registries. Yet, currently many REDD+ funders require, and many REDD+ countries find necessary, the implementation of REDD+ national registries to track the multiple on-the-ground REDD+ actions that have sprang in recent years. In this chapter we will review the international and national experience with climate registries focusing on what is applicable to a country-level REDD+ registry.

TABLE 1: POSSIBLE FUNCTIONS OF A CLIMATE REGISTRY

A CLIMATE REGISTRY COULD PERFORM ONE, SOME OR ALL OF THE FOLLOWING FUNCTIONS:	
Register information on climate change actions	A climate registry may keep track of countries' climate change strategies, policies, specific projects or emissions reductions. These could be unilateral (self-financed) actions, actions seeking international support and/or actions aiming to sell emission reductions in a carbon market.
Register information on climate change funding	A climate registry may keep track of climate change funding commitments from public, bilateral and multilateral funders, as well as climate funding offered by businesses and NGOs.
Facilitate fund matchmaking	If a registry tracks both funding needs and funding opportunities, it could play a role in matching those needs with funding sources. This could be done at a minimum by simply making available to anyone the information it collects on demand and supply of climate funds. But it could entail more proactive actions, including targeting information, facilitating initial contacts and conveying funding roundtables.
Register advances in climate change actions	As climate change actions may take years to produce results, there may be a need to register intermediate steps or advances. A registry could periodically (annually or at longer intervals) track the advances and accomplishments of climate change actions and climate change funding, using a set of standards and methodologies that facilitate comparability of both the actions' advances and the funding provided.
Register greenhouse gas (GHG) emission reductions and other results	With this function a climate registry would acknowledge and certify the GHG emission reductions of mitigation activities (e.g. issuing and/or registering emission reductions (ERs) for countries, programmes or projects) and could do the same regarding other environmental and social results (e.g. safeguards, benefit sharing). This is a critical function to facilitate results-based payments (whether domestic or international), payments for ecosystem services or benefit-sharing schemes.
Register emissions trading	This function is strongly linked to registering GHG emission reductions but would additionally include tracking the transfer and retirement of ERs and also tracking and registering other operations that may be needed to ensure the market integrity (e.g. tracking a buffer account).

INTERNATIONAL POLICY CONTEXT

A UNFCCC registry for NAMAs

At the 16th Conference of the Parties (COP) to the UNFCCC (Cancun, 2010), countries agreed to set up a registry "to record nationally appropriate mitigation actions (NAMAs) seeking international support and to facilitate matching of finance, technology and capacity-building support for these actions" as detailed in the Focus, right.

The Cancun Agreement opted for a climate registry limited to the first three functions listed in *Table 1*: registering mitigation initiatives, registering funding opportunities and facilitating fund matchmaking. It also opted for a global registry under the UNFCCC, encompassing all mitigation activities but not adaptation activities.

COP 17 (Durban, 2011) further advanced decisions on the UNFCCC climate registry, indicating, for instance, that (a) the registry should be developed as a dynamic web-based platform managed by a dedicated team in the UNFCCC Secretariat; (b) participation in the registry would be voluntary, and only information submitted expressly for inclusion in the registry should be recorded; and (c) the registry should be structured in a flexible manner that clearly reflects the full range of the diversity of NAMAs and the range of types of support. The COP 17 agreements on the climate registry (Articles 45 to 55 of the Durban Road map) also:

- Listed the type of information that developing and developed countries would be asked to submit to the UNFCCC climate registry;

- Asked the UNFCCC Secretariat to accelerate the collection of information to begin building a registry;

- Asked the UNFCCC Secretariat to solicit the views of the Parties regarding the future registry functions and operation.[2]

The COP 16 and COP 17 resolutions on the UNFCCC registry talk about "nationally appropriate mitigation actions" without restricting them to any particular type of mitigation activity, so it follows that REDD+ would be included. Still, much remains to be decided regarding specific characteristics of the UNFCCC registry, including its structure, functioning and governance. It is also noteworthy that, per decisions at COP 16 and COP 17, the UNFCCC registry would not pick up the functions of registering emission reductions, tracking payments for results or facilitating the functioning of carbon markets.[3]

International experiences with climate registries

Voluntary information-sharing registries

The North America Climate Registry is an information- and knowledge-sharing registry with members in 13 Canadian provinces, 40 US states, six Mexican states and four US Native Sovereign Nations. Its purpose is to provide information to reduce GHG emissions by establishing consistent and transparent standards throughout North America for businesses and governments to calculate, verify and publicly report their carbon footprints in a single, unified registry (see *www.theclimateregistry.org*).

FOCUS

THE CANCUN AGREEMENT (COP 16, CANCUN, MEXICO, 2010) OPTED FOR A GLOBAL, MULTIFUNCTIONAL CLIMATE MITIGATION REGISTRY, UNDER THE AUTHORITY OF THE UNFCCC.

According to Articles 53 to 59 and Article 66 of the Cancun Agreement[1] the Conference of the Parties:

53. Also decides to set up a registry to record nationally appropriate mitigation actions seeking international support and to facilitate matching of finance, technology and capacity-building support for these actions;

54. Invites developing country Parties to submit to the Secretariat information on nationally appropriate mitigation actions for which they are seeking support, along with estimated costs and emission reductions, and the anticipated time frame for implementation;

55. Also invites developed country Parties to submit to the Secretariat information on support available and provided for nationally appropriate mitigation actions;

56. Requests the Secretariat to record and regularly update in the registry the information provided by Parties on:

(a) Nationally appropriate mitigation actions seeking international support;

(b) Support available from developed country Parties for these actions;

(c) Support provided for nationally appropriate mitigation actions;

57. Agrees to develop modalities for the facilitation of support through the registry referred to in paragraph 53 above, including any functional relationship with the financial mechanism;

58. Decides to recognize nationally appropriate mitigation actions of developing countries in a separate section of the registry;

59. Requests the Secretariat to record, and regularly update, in a separate section of the registry, information submitted by Parties on the following:

(a) Mitigation actions contained in document FCCC/ AWGLCA /2011/INF.1;

(b) Additional mitigation actions submitted in association with paragraph 50 above;

(c) Once support has been provided, internationally supported mitigation actions and associated support;

66. Agrees on a work programme for the development of modalities and guidelines for: facilitation of support to nationally appropriate mitigation actions through a registry; measurement, reporting and verification of supported actions and corresponding support; biennial reports as part of national communications from Parties not included in Annex I to the Convention; domestic verification of mitigation actions undertaken with domestic resources; and international consultations and analysis.

The Carbon Cities Climate Registry is an international initiative that encourages local governments to regularly and publicly report on their greenhouse gas reduction commitments, GHG emissions inventories and climate mitigation/adaptation actions (see *www.citiesclimateregistry.org*).

The Voluntary REDD+ Database, put up by the REDD+ Partnership (an international forum of REDD+ countries and donors), is an international information-sharing registry fully dedicated to REDD+ that describes its activities as follows:

> The Voluntary REDD+ Database (VRD) provides information on REDD+ financing, actions and results that has been reported to the REDD+ Partnership. It aims to improve effectiveness, efficiency, transparency and coordination of REDD+ initiatives; and to support efforts to identify and analyse gaps and overlaps in REDD+ financing (see *www. reddplusdatabase.org*).

Matchmaking registries

The **CDM Bazaar**, operated by UNEP, facilitates the transaction of Clean Development Mechanism (CDM) certified emissions reductions (CERs) through the exchange of information on CDM project opportunities. The CDM Bazaar has three main market corners highlighting sellers, buyers and service providers.

In the Seller section, you can view seller entries and find projects at various stages, from project ideas to issued CERs for sale. In the Buyer section, you can view entries and purchasing profiles of buyers in the carbon market. The Service Provider section shows profiles of companies that offer carbon market technologies and services (see *www.cdmbazaar.net*).

Emissions trading registries

The purpose of emissions trading registries, whether public, private or NGO-driven, is to track emission reductions and to facilitate the certification and trade of emission reductions (the last two functions listed in Table 1).

To do so, GHG emission reductions registries often establish requirements and standards regarding measurement, accounting and reporting of GHG emissions, including baseline methodologies, all of which may also be entered in the registry's records. In that sense, emissions trading registries may also track other aspects of the design and operation of REDD+ programmes and projects, beyond emission reductions.

An emissions trading registry requires transparent and reliable operation methods to ensure the credibility of the trading system it supports. These methods include, among others, (a) clear standards for the quality of the emission reductions it accepts, (b) a system to serialize each tonne of emission reductions that is registered in order to track its origin and path through the registry system, and (c) user access to information on the registry processes and the data registered.

Public emissions trading registries

The largest emissions trading registry is the International Transaction Log (ITL) operated by the UNFCCC Secretariat for the Kyoto Protocol, which connects to a network of national registries from Kyoto Protocol signatory countries. Country registries linked to the ITL are managed by each government and are designed to carry out the issuance, transfer, acquisition, cancellation, replacement, retirement and carryover of Kyoto units.[4]

Linked to the ITL, the Clean Development Mechanism (CDM) registry tracks the issuing and facilitates the transfer of CERs issued to CDM projects in developing countries (see *unfccc.int/kyoto_protocol/registry_systems/items/2723.php*).

The European Union Emissions Trading System (EU ETS) also has a sophisticated registry arrangement in place to support the operation of the EU-wide cap-and-trade system and to track thousands of emissions points distributed in 31 countries. Up to 2012, each EU country member operated its own ETS registry but, as of mid-2012, these national registries have been replaced by a single regional EU registry that contains the accounts, verified emissions and surrendered allowances for each regulated source of emissions in the 31 countries (see Ecofys, 2013).

Business-driven GHG emissions trading registries

The Verified Carbon Standard (VCS) was created in 2005 by a group of environmentally concerned business-related institutions, including the Climate Group, the International Emissions Trading Association (IETA), the World Economic Forum and the World Business Council for Sustainable Development (WBCSD). In 2009, the VCS was incorporated as a US non-profit, focused on providing technical standards to the international voluntary carbon market (see *www.v-c-s.org*).

The methodologies and standards developed by the VCS are in the public domain. However, the VCS charges a fee to users who want to be accredited and have their emission reductions verified, certified and registered in the VCS Registry System, described as follows:

> The VCS Registry System is a secure platform where [carbon] credits can be assigned unique serial numbers allowing any project and any credit to be searched for and tracked online. In order to maintain quality assurance, VCS registries must adhere to strict conflict of interest policies and maintain sufficient financial resources to ensure ongoing market support and guarantee uninterrupted access to the accounts.

Operation of the VCS Registry System is outsourced to two business service companies: Apex and Markit.[5]

NGO-driven GHG emissions reduction registries

Non-government organizations (NGOs), including WWF, have participated in the creation of several environmental standards and associated verification and registry platforms. The best example is the Gold Standard (*www.cdmgoldstandard.org*) established in 2003 by WWF and now endorsed by more than 80 NGOs worldwide. The Gold Standard Registry (*www.cdmgoldstandard.org/our-activities/project-registry*), which is operated by Markit, describes itself as:

> ... a web-based software application that creates, tracks and enables the trading of Gold Standard Voluntary Emission Reduction (VER) credits around the world. All Gold Standard VER credits are issued and tracked within the Registry via unique serial numbers.

Using the proven and trusted Markit Environmental Registry infrastructure, the registry manages the full lifecycle of a VER carbon credit from creation to retirement. In accordance with the Gold Standard Foundation's premium standards, the registry ensures the transparency, quality, reliability and security of these carbon commodities for the marketplace.

The Registry also serves as The Gold Standard Clean Development Mechanism and Joint Implementation project data-base, tracking the certification of Certified Emission Reductions (CERs) and Emission Reduction Units (ERUs).

Key functions of the registry:

- To maintain and manage project accounts for Gold Standard VER certification and provide an up-to-date list of GS-CER projects registered with the UNFCCC CDM.

- Project Developers are required to use this registry to upload project documen-tation and review/implement required revisions during project design and validation stages ... [Auditors] are required to use this system to upload their validation and verification reports.

- Registered users can gain detailed information about Gold Standard carbon credits on offer in the voluntary offset market and the conditions of sale.

- The open-access section of the Registry is used by NGO Supporters during stakeholder review periods following the submission of validation and verification reports.

- Un-registered users can track the progress of an application and read project documentation that has been released to the public.[6]

NATIONAL AND SUBNATIONAL OPTIONS

All countries that plan to undertake significant REDD+ activities will eventually need a REDD+ registry, and, in the absence of an international REDD+ registry, several countries are already developing their own. Here is a short list of some of the options to be considered when building a national or subnational REDD+ registry:

- **A REDD+ or climate change registry:** Each REDD+ country may need to decide whether it makes sense to establish a stand-alone REDD+ registry or to fold it into a broader NAMAs or climate change registry that includes a section for REDD+. Early REDD+ movers seem to have opted for a REDD+ registry, keeping open the possibility of integrating it into a broader NAMAs or climate change registry in the future.

- **Geographical scope:** Some countries are opting for a single countrywide REDD+ registry (see *Focus*) while others (e.g. Indonesia, Brazil) also include several subnational registries. The choice may be made based on the size of the country and the level of authority and initiative that subnational jurisdictions (e.g. states, provinces) have on forest and REDD+ related issues.

- **Outsourcing the registry:** So far, forest countries are building REDD+ institutional systems mostly within public agencies, but they outsource some functions to academic, not-for-profit or business providers. The same may happen with all or some functions of a REDD+ registry. For example, in mid-2012 the state of Acre, Brazil, signed an agreement with Markit (a private international financial information company) for Markit to provide registry services for Acre's REDD+ programme, including: "infrastructure and technical support to jointly develop a customized, secure online registry facility for efficient and transparent issuance of credits and for tracking ownership and retirement of credits. In addition, the Markit Environmental Registry will establish connectivity to link Acre's numerous partners and facilitate transactions in Brazil and internationally." (from Markit 6/20/2012 press release, available on the web).

According to some experts, Acre's decision to move forward with a state-level REDD+ registry and outsource it to an international financial service company reflects its interest in California's emerging GHG regulations, which would include a large market for international forest carbon offsets but are likely to require a credible REDD+ registry.[7]

- **Institutional location:** If the registry is not outsourced, an obvious institutional home would be the leading national REDD+ agency or the MRV agency. It could also be located in the national natural resources statistics or census agency, which would bring it closer to where the technical experience may be available. Some experts suggest that a broader climate registry may be located under the ministry of finance or economics or development, which would bring it closer to where national economic decisions are made.

- **Governance:** Whatever the registry's institutional location, its effectiveness may depend on its capacity to elicit information and collaboration from a large array of public and private stakeholders and to be viewed by them as transparent, account-able and trustworthy. Putting in place a multi-institutional board and/or building up a network of reference points or correspondents in key public and private entities may help achieve this buy-in.

- **Technology:** There is the option of using open-source or proprietary software. The former is available free of charge but still requires investing in adapting it to local needs and in training local staff. The price of proprietary systems can be high, but may include installation, adaptation, and training and maintenance costs. Most experts favour using open-source technol-ogy and readiness financing to pay for the costs of adaptation and training of local operators.

- **Functions:** Which of the six functions listed in *Table 1* should the registry perform and when? There is a strong rationale to begin with a simple approach and expand incrementally. For example, a REDD+ registry could focus initially on tracking REDD+ activities and funding, and slowly add the more demanding functions of tracking emission reductions and emissions trading.

- **Information to be requested from REDD+ Parties:** The type and format of the information to be collected by the registry will depend on the functions that it

FOCUS

EARLY EXPERIENCES WITH A NATIONAL REDD+ REGISTRY IN THE DEMOCRATIC REPUBLIC OF CONGO (DRC)

Since mid-2012 the DRC government has worked to put in place a national REDD+ registry and national forest monitoring system (NFMS)—the first in Africa—to track the effectiveness of the country's REDD+ projects as well as their social and environmental impacts. According to a 2012 news release from DRC's Ministry of the Environment, Nature Conservation and Tourism:

Many REDD+ projects aiming to value emissions reductions through voluntary or emerging compliance markets are currently in development in DRC. These projects are being implemented by consortia usually involving a variety of stakeholders ranging from civil society organization, church groups, international NGOs, private sector and specialized services of the public administration. In order to ensure that i) eligibility criteria and ii) social and environmental standards and safeguards are met, the government is currently developing an approval procedure for these REDD+ projects. This regulatory project approval should help to promote transparency, synergy and learning in the implementation of REDD+. For this purpose a Ministerial decree accompanied by a number of complementary documents including a detailed procedures manual were signed into force on February 15th 2012, [that include the creation of] a National REDD+ Registry that will be publicly available online… The registry will also enable the monitoring of a range of "initiatives" being implemented by government, civil society, donors or private sector which are relevant for REDD+ but not aiming to generate carbon assets (such as investments in agriculture, forestry, energy sectors, etc.). The registry will become a dynamic tool by which the administration will follow up the daily receipts of investments in REDD+ projects and initiatives and their environmental and social impacts. This registry will also ensure transparency

and sharing of data generated by the projects and their monitoring and verification by all stakeholders. In doing so, it should help ensure that local communities in the project area fully take part in these projects and initiatives and reap their benefits in various ways.

Regarding the technical operation of the DRC Registry, according to Ashley et al. (2013):

The DRC REDD Registry is managed by a Technical Commission under the National REDD Committee, at the Ministry of the Environment. The Technical Commission has arrangements with ProCredit Bank DRC (part of the International ProCredit Group) to conduct due diligence checks on all prospective REDD+ project developers. Additionally it requires that any project meets both national and international standards, including VCS validation and verification for projects, and CCBA for social and biodiversity co-benefits.

Forest monitoring to support the DRC REDD+ Registry is carried out by the DRC National Forest Monitoring System, still being developed as of early 2013 by FAO/UN-REDD and partners. This system uses Brazil's open-source TerraAmazon platform (renamed TerraCongo in DRC) to provide GIS, image processing, database management and data access functionalities. TerraAmazon is a remote sensing and GIS based information system that uses Brazil's TerraLIB GIS (www.terralib.org) and SPRING software (www.spring.org.br). Both of these Brazilian systems can be downloaded and used free of charge.

performs and the technical platform it uses. In the reference section at the end of this chapter there are links to several registries that will show the information they collect and the forms they use to collect it.

An important consideration when designing information requests is to minimize costs. Examples include maximizing synergies, avoiding duplications and not requesting irrelevant or redundant information (e.g. be aware of report requirements of other agencies that could complement the information collected by the REDD+ registry). There is the additional issue of "information quality" and, as such, it will need to be determined whether a registry demands certain quality standards or checks to ensure the accuracy of the information that it receives.

■ **Staffing the registry:** A small team may be all that is needed to operate the registry, provided that it includes (a) strong information technology capabilities, because all the information will be captured and posted electronically; (b) one or two people on the team familiar with the forest sector and REDD+; and (c) a team leader with access to the REDD+ agency high-level management, because the registry requires that the information arrives at the decision-making table in a timely manner and in a useful format.

■ **How to ensure efficiency, transparency and accuracy:** A registry is only worthwhile if people use it and trust it. This will be determined by the registry's (a) efficiency: cost to users versus information and services that it provides; (b) transparency: what and how much information is accessible to the various users; (c)

accuracy: how the registry ensures the quality of its information; and (d) the accountability mechanisms in place, should someone want to challenge some of the registry information. Options to address these issues may need to be considered while designing the registry. For example, transparency and accountability can be factored into the governance options.

■ **Paying for the registry:** Securing the long-term funding to maintain a registry is essential to its operation. Initial funding to build up the registry may come from international readiness funds, while medium- and long-term costs may be covered by user fees. As an example, Ponzi, 2012, discusses the operation and cost of Ireland's National Emission Trading Registry.

WWF'S VIEWPOINT

As of mid-2013 WWF has not produced a specific policy position regarding REDD+ registries (see links to WWF REDD+ policy positions and briefs in the WWF REDD+ Resources chapter). Still, at a technical level, WWF REDD+ practitioners recognize that a REDD+ registry is a necessary part of any national REDD+ strategy.

Regarding the options to put a REDD+ registry in place, WWF suggests:

■ Moving forward, step-wise and cost-wise, with a national REDD+ registry that can eventually be merged into or cooperate with a future national climate-wide registry, and with the UNFCCC existing or future international registry platforms;

- Developing national-level registries, to ensure that standards and quality are consistent countrywide; however, as in the case of MMRV and RL there may be practical reasons to develop registries subnationally in the regions of the country that are more advanced in their REDD+ programmes, but only as a transition to a countrywide registry system;

- Defining the purpose and scope of a national REDD+ registry to begin modestly around information activities, building up as needed to eventually encompass the more demanding and costly activities of registering emission reductions and supporting emissions trading;

- Taking on board international experiences and best practices to ensure credibility and comparability.

FURTHER RESOURCES

Publications
Ashley, R. et al. 2013. "Ghana's REDD+ Registry Pathways to Development". AFC, NCRC, FT.

O'Sullivan, R. et al. 2011. "National REDD+ Registries. An Overview of Issues and Design Options". KfW, Frankfurt, Germany.

Reed, D. et al. 2010. "A Registry approach for REDD+". Technical Working Group, Washington, DC.

Websites
Carbon Cities Climate Registry: *www.citiesclimateregistry.org*

CDM Bazaar: *www.cdmbazaar.net*

Gold Standard Registry: *www.cdmgoldstandard.org/our-activities/project-registry*

North America Climate Registry: *www.theclimateregistry.org*

REDD+ Partnership REDD+ Database: *www.reddplusdatabase.org*

UNFCCC CDM Registry: *unfccc.int/kyoto_protocol/registry_systems/items/2723.php*

VCS Registry: *www.v-c-s.org/how-it-works/vcs-registry-system*

BIBLIOGRAPHY

DRC, Ministry of the Environment. 2012. "The National Forest Monitoring System and the National REDD+ Registry: A contribution to managing and monitoring FIP investments in the Democratic Republic of Congo". Kinshasa, available at www.climateinvestmentfunds.org.

Ecofys. 2013. "Mapping Carbon Pricing Initiatives. Development and Prospects 2013". World Bank, Washington, DC, USA.

Indonesia REDD+ Task Force. 2012. "Strategy and Implementation Plan for REDD+ Measurement, Monitoring, Reporting, and Verification (MRV) in Indonesia". Jakarta, available at www.satgasreddplus.org.

Machfudh. 2011. "Design roadmap of Indonesia REDD+ funding and compliant benefit/incentives distribution system". UN-REDD, Jakarta, Indonesia.

Perez-Cirera, V. and Dabbagh Lina (ed.) 2012. "Advances in NAMAs and National Climate Registries: Opportunities to Scale Up Renewable Energy and Energy Efficiency in Mexico". Technical Working Group, Washington, DC, USA.

Ponzi, J. 2012. "Ireland's National Emission Trading Registry: experiences and lessons learned". EPA Ireland, presentation at the PMR Technical Workshop on Baselines and Registries, Cologne, Germany, 27 May 2012, available at www.thepmr.org/system/files/documents/12_Ponzi_Ireland_Registry.pdf.

Ronquillo Ballesteros and Y. Zhao. 2011. "State of Play of the Climate Registry. A Mapping of UNFCCC Discussions of a Climate/NAMAs Registry in the Eve of COP17". Technical Working Group, Washington, DC, USA.

Rosker, F. et al. 2011. Annual Status Report on Nationally Appropriate Mitigation Actions (NAMAs) Ecofys, ECN, CCAP, available at www.ecofys.com/en/publication/annual-status-report-on-namas-2012.

UNFCCC. 2011. "Report of the Conference of the Parties on its seventeenth session, held in Durban from 28 November to 11 December 2011 Addendum Part Two: Action taken by the Conference of the Parties at its seventeenth session. FCCC /CP/2011/9/Add.1. UNFCCC, Geneva, Switzerland.

UNFCCC. 2010. "The Cancun Agreement, Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010". FCCC/CP/2010/7/Add.1, available at www.unfccc.int/resource/docs/2010/cop16/eng/07a02.pdf.

END NOTES

1. For the UNFCCC NAMAs registry, see the Cancun Agreement, Articles 53 to 67, in UNFCCC. 2011. "Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010," FCCC/CP/2010/7/Add.1. Available online at www.unfccc.int/resource/docs/2010/cop16/eng/07a02.pdf.
2. See Articles 45 to 55 in the Report of the Conference of the Parties on its seventeenth session, held in Durban from 28 November to 11 December 2011 Addendum Part Two: Action taken by the Conference of the Parties at its seventeenth session. FCCC/CP/2011/9/Add.1. No further advances were made on this subject at COP 18 (Doha 2012).
3. For the ongoing UNFCCC discussion regarding scope and modalities of an international registry, see A. Ronquillo Ballesteros and Y. Zhao. 2011. "State of Play of the Climate Registry. A Mapping of UNFCCC Discussions of a Climate/NAMAs Registry in the Eve of COP 17." Technical Working Group, Washington, DC.
4. A "Kyoto unit" is one unit of the emission allowance under the Kyoto protocol expressed in metric tonnes of CO2e.
5. All quotes are from the VCS website www.v-c-s.org; for a description of VCS registry, visit www.v-c-s.org/how-it-works/vcs-registry-system; for VCS registry operators, visit www.v-c-s.org/registry-system-contacts.
6. All quotes are from GS websites www.cdmgoldstandard.org and www.cdmgoldstandard.org/about-us/who-we-are.
7. stateredd.org/recommendations

ACHIEVING REDD+

WWF GUIDE TO BUILDING REDD+ STRATEGIES

Achieving REDD+

INTERVENTION STRATEGIES TO ADDRESS THE DRIVERS OF DEFORESTATION AND FOREST DEGRADATION

DOWNLOAD THIS CHAPTER

Key Messages

- Addressing the drivers of deforestation and forest degradation will make or break a country's REDD+ strategy. All other REDD+ building blocks may be in place, and still, if we are not successful in addressing drivers, no REDD+ will be achieved.

- National and subnational intervention strategies to reduce deforestation and forest degradation (DD) should begin now, based on current knowledge, while, at the same time, we should make concerted efforts to scale up our understanding of drivers. This should include understanding how they work, as well as understanding the costs and effectiveness of different intervention strategies to address them.

- Intervention strategies should be developed and applied in a participatory way involving all relevant sectors and recognizing local and regional contexts.

- Governments have a major responsibility in forging solutions and in identifying and undertaking effective intervention strategies, including the harmonization of agriculture, energy and forest policies and addressing cross-sectoral conflicts among public policies and among sectoral priorities and activities.

- A range of intervention strategy best practices are already available. Many of these intervention strategies have been used extensively in forest conservation activities in the past, whereas some are more innovative in their approach. Matching these practices to local contexts is the primary job in developing effective REDD+ intervention strategies.

INTRODUCTION

Perhaps the simplest way of looking at drivers of deforestation and forest degradation (DD) is through two broad categories (adapted from Geist and Lambin, 2002). **Direct drivers** are activities or actions at the forest frontier that directly impact forest cover. **Indirect drivers** are socioeconomic processes that shift the way in which people behave at a macro level, and would affect the direct driver (see Table 1).

Some activities can act as both direct and indirect drivers. For instance, it has long been known that opening new roads into remote forested areas accelerates deforestation. At work here is a modest direct driver impact, due to the road construction, plus a much larger indirect driver impact as the new roads give logging and agriculture access to areas previously isolated.

WEBINAR VIDEO: A FRAMEWORK FOR DEFINING AND MONITORING FOREST DEGRADATION

LEARNING SESSION 14

▶

TABLE 1: DIRECT AND INDIRECT DRIVERS OF DEFORESTATION (ADAPTED FROM GEIST AND LAMBIN, 2002)

DIRECT DRIVER: LAND-USE CHANGES	EXAMPLE
Agricultural	Permanent cultivation, Shifting cultivation, Cattle ranching
Wood extraction	Timber, Pulp, Fuelwood, Charcoal
Infrastructure	Transport (e.g. roads, rail), Settlements, Mining, Hydropower
INDIRECT DRIVER: LAND-USE CHANGES	**EXAMPLE**
Demographic	Population growth, Migration, Cultural attitudes
Economic	Market growth, Economic structures (e.g. agricultural subsidies)
Technological	Agro-technical change
Policy/Institutional	Formal policies, Policy climate, Property rights, Land tenure
OTHER	**EXAMPLE**
Other	Biophysical drivers, Social drivers (e.g. war), Environmental factors

TABLE 2: MAIN DIRECT DRIVERS OF DEFORESTATION AND FOREST DEGRADATION: LAND-USE CHANGES AND LAND-USE ACTIVITIES (ADAPTED FROM HOUGHTON, 2010)
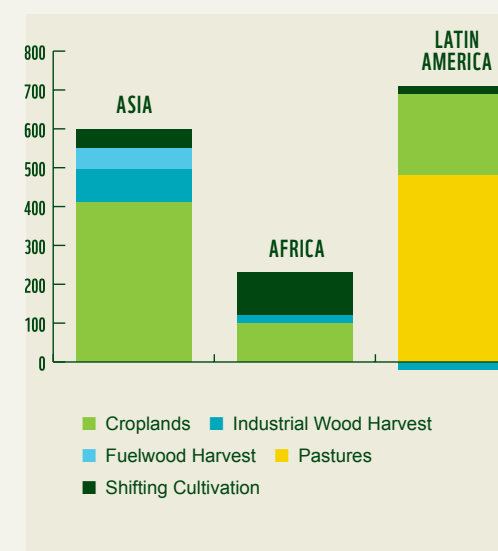
DIRECT DRIVER: LAND-USE CHANGES	IMPACT ON FORESTS AND EMISSIONS
Croplands	The conversion of forests to croplands has been responsible for the greatest emissions of carbon from land-use change. With growing demand for agricultural commodities (primarily soy and palm oil) the area of land used for crops may keep growing in the future.
Pastures	The conversion of forests into pastures is also a major source of carbon emissions, although in some cases pastures have expanded into savannahs with lower emissions. Once pastures are established, emissions per hectare from cattle ranching are lower than emissions per hectare from croplands because pastures are generally not cultivated, and thus little soil carbon is lost to the atmosphere.
Shifting cultivation	Shifting cultivation is a rotational form of cropping, where crops alternate with periods of forest recovery (fallow). On average, the carbon stocks per hectare are smaller under shifting cultivation than in forests but larger than in permanent croplands. Thus, the emissions of carbon per hectare of shifting cultivation are less than they are for conversion of forest to cropland or pasture.
Industrial wood harvest	The net annual emissions of carbon from wood harvest include both the emissions from commercial wood and fuelwood harvest and the uptake of carbon in forests recovering from harvests.

From drivers to deforestation, forest degradation and GHG emissions

Several studies have aimed to quantify the impacts of the different drivers of deforestation both on forests and on greenhouse gas (GHG) emissions (Geist and Lambin, 2002, Union of Concerned Scientists, 2011, DeFries et al., 2010). These studies focus on direct drivers, because direct drivers, particularly land uses and land-use changes, can be measured both spatially and temporally. Using this approach, the dominant drivers of DD at global and regional scales are listed in Table 2.

Using these four categories, Figure 1 shows the carbon emissions from tropical deforestation across Asia, Africa and Latin America.

FIGURE 1: CARBON EMISSIONS FROM TROPICAL DEFORESTATION AND FOREST DEGRADATION IN ASIA, AFRICA AND LATIN AMERICA AVERAGED OVER THE PERIOD 1990-2005. UNITS ARE IN $MTCO_2$ PER YEAR (UNION OF CONCERNED SCIENTISTS, 2011).

Legend: Croplands, Industrial Wood Harvest, Fuelwood Harvest, Pastures, Shifting Cultivation

Emissions from DD vary significantly by region. Deforestation in Latin America is being driven primarily by large-scale (commercial) expansion of pastureland, with cattle ranching historically being the single greatest driver of forest conversion, accounting for around 500 MtCO$_2$/year (Houghton, 2010). A second significant driver of deforestation in Latin America is large-scale agricultural expansion, with commercial crop production dominated by soy for oil and livestock feed. In the future, demand for biofuels (derived from soy and other crops) may also become a growing DD factor in Latin America.

Of the three regions, Asia has the least total forest cover but has the highest rate of deforestation (Hansen et al., 2008). Much of the forest loss in Asia is being driven by large-scale croplands (primarily palm oil) and timber plantations. Palm cultivation, in particular, is significant in Indonesia and Malaysia; together these countries accounted for nearly 85 per cent of 2010 global production (Union of Concerned Scientists, 2011). In Indonesia, palm cultivation and timber extraction are to some extent undertaken by the same companies, for whom timber supplies an early source of profit from land on which palm plantations will take years to grow. As such, these drivers are considered to be tightly linked in this region (Gaudioso and Magrini, 2011, Fisher et al., 2011).

In contrast to other developing regions, the primary driver of deforestation in Africa is shifting cultivation (responsible for approximately 60 per cent of deforestation on the continent), and estimates suggest larger-scale cropland is responsible for another 10 per

cent (Rademaekers et al., 2010). The second major driver of deforestation in Africa is wood extraction for timber, fuelwood and charcoal production. Timber production is growing, with some estimates placing logging concessions at nearly 30 per cent of central Africa's land area (Rademaekers et al., 2010), including 45 per cent of Gabon's territory. In the Democratic Republic of Congo, UN-REDD (2012) finds that the most important direct drivers of deforestation include slash-and-burn agriculture, artisanal logging, firewood collection, charcoal production and mining activities.

Looking forward, drivers of deforestation in tropical Africa seem poised to change, and a recent study of deforestation trends in the Congo Basin (*Megevand et al., 2013*) suggests that new drivers of deforestation in the Congo Basin will include improved transportation infrastructure, improved agriculture technology, increased international demand for meat and biofuels, and a decrease in woodfuel consumption.

It is also important to note that there are significant differences between what drives deforestation and what drives degradation. As already mentioned, agriculture (both commercial and subsistence), ranching, mining, infrastructure and urban expansion are all major direct drivers of deforestation.

Drivers of forest degradation, on the other hand, include logging for commercial and subsistence use, uncontrolled fires, livestock grazing, fuelwood collection and charcoal production. For example, timber extraction and logging account for more than 70 per

cent of total degradation in Latin America and Asia, whereas fuelwood collection and charcoal production are the main degradation drivers in Africa (*Hosonuma et al., 2012*).

Studies such as those quoted above serve as broad estimates of regional drivers of DD across the tropics, but more spatially explicit data using image classification and GIS analysis will be needed to develop a full assessment of drivers and to support the design of intervention strategies to address

them at national or subnational levels. Many countries have already begun to identify and assess national drivers of deforestation as part of their national REDD+ readiness plans. These efforts will need to be scaled up and reinforced in the coming years to provide a coherent, cross-sectoral and scientifically rigorous basis for policy interventions to address the drivers of DD—not only national and direct drivers but also international and indirect drivers (*Kissinger et al., 2012*).

© JULIE PUDLOWSKI / WWF

© MAURI RAUTKARI / WWF-CANON

INTERNATIONAL POLICY CONTEXT

In 2010, at the 16th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 16) in Cancun, it was decided that parties should find "effective ways to reduce the human pressure on forests that results in greenhouse gas emissions, including actions to address drivers of deforestation".[1] Developing countries were also asked to "address, inter alia, the drivers of deforestation and forest degradation" when developing and implementing their national strategies or action plans.[2]

Recognizing that very little information is available on how to address these drivers, a work programme was established at COP 16 to:

Identify land use, land-use change and forestry activities in developing countries, in particular those that are linked to the drivers of deforestation and forest degradation; identify the associated methodological issues to estimate emissions and removals resulting from these activities; and assess the potential contribution of these activities to the mitigation of climate change.

While it was originally envisaged that this programme of work would conclude at COP 18 in Doha, in December 2012, this agenda item has been prolonged through 2013.

A further round of submissions was requested from parties and observers regarding their views on this issue, and several parties met again in Bonn in June 2012. But beyond distributing some important analytical work commissioned (e.g. *Kissinger et al., 2012*), little further guidance was forthcoming in this process. There remains a tension in the negotiations regarding the need to address the drivers of DD and concerns among some countries that doing so may negatively impact their economic prospects.[3]

NATIONAL AND SUBNATIONAL OPTIONS

The first step in addressing the drivers of DD is to understand where these drivers are occurring within the national and subnational contexts and how they tie into the broader development agenda of the country. Many forest countries are now undertaking strategies to assess the drivers of DD and to develop intervention strategies to address them. Undertaking action to address the drivers of DD, however, can begin immediately. A great deal of experience and literature exists on intervention strategies, and REDD+ practitioners can begin to apply this information while refining their understanding of the drivers within their regional context.

In light of the many uncertainties and complexities of a REDD+ strategy, adaptive governance frameworks will be important in allowing for continuous improvement of intervention strategies as well as embracing a participatory process that involves all relevant sectors and stakeholders (Graham, 2011a).

Options and criteria for addressing the drivers of DD

Options for addressing the drivers of DD can be classified in many different ways and be prioritized following different criteria.

Here are five complementary ways to classify and analyze intervention strategies:

- By the drivers of deforestation they target, namely, intervention strategies that aim to address the direct drivers of DD, and on the other hand, intervention strategies that aim to address the indirect driver;

- By geographical scale, as intervention strategies may be needed at different scales—from local to national and international;

- By the lever they use to achieve REDD+, which could either be an incentive, a disincentive or a change in the enabling conditions;

- By whether they are either supply-side or demand-side;

- By the stakeholder who needs to lead the intervention strategies, be it the public sector, the private sector or a combination of both.

When prioritizing different intervention strategies, a country should consider that:

- The golden rules should be effectiveness and efficiency. One criterion for effectiveness could be the capacity of the government to actually implement the intervention strategy; another could be the degree of political and social complexity and acceptability of the intervention strategy. One criterion for efficiency could be the cost-effectiveness ratio, namely, how much it will cost compared to how much it can achieve.

- While a country is refining its data on drivers of DD and analyzing possible response measures, the simplest priority criterion may be to focus initial efforts on the intervention strategies that can address one or two key drivers in priority regions, as that may be enough to have a large impact.

Intervention strategies according to direct or indirect drivers of DD

Table 3 gives some examples of options for addressing the direct and indirect drivers of DD.

From *Table 1*, the direct drivers of DD act on the ground (e.g. logging [both legal and illegal], fuelwood collection, charcoal production, agricultural expansion, mining, infrastructure and more). Because these drivers are, by definition, at the forest frontier, intervention strategies to address them are often the first tabled when discussing an REDD+ intervention strategy.

Indirect drivers of DD, on the other hand, include broader socioeconomic processes, many of them happening outside the REDD+ area (e.g. migration from other regions toward the forest frontier, unsustainable national and international demand for rural products, and more). Addressing these drivers of DD may be as important as addressing the direct drivers and may require the implementation of policies and measures far outside the forest sector or even outside the country in question.

On the positive side, there are intervention strategies—such as increasing the market for certified sustainable rural products— that have the potential to address both direct and indirect drivers in the forest frontier and in places far removed from it.

TABLE 3: EXAMPLES OF INTERVENTION STRATEGIES TO ADDRESS THE DIRECT AND INDIRECT DRIVERS OF DD

DRIVERS OF DD	EXAMPLES OF INTERVENTION STRATEGY OPTIONS
Direct, such as » Agriculture » Ranching » Logging » Infrastructure » Mining	» Production intensification that reduces the need for forest conversion » Increase sustainable production through certification (e.g. FSC, RSPO, Bonsucro) » Law enforcement » Put forests off-limits (e.g. new protected areas, deforestation moratorium) » Land-use planning to minimize impact of infrastructure development
Indirect, such as » National demand for rural products » International demand for rural products » Urban and transport growth	» Improved end-user technologies (e.g. biogas, improved cookstoves) that reduce demand for unsustainable rural products » Ban the import of unsustainable forest products (e.g. Amazon soy moratorium, US Lacey Act and EU FLEGT) » Increase the market for sustainably produced rural products (certification)

TABLE 4: EXAMPLES OF OPTIONS TO ADDRESS LOCAL, NATIONAL/SUBNATIONAL, AND INTERNATIONAL DRIVERS OF DEFORESTATION AND FOREST DEGRADATION

SCALE OF THE DRIVER OF DD	EXAMPLES OF INTERVENTION STRATEGY OPTIONS
Local, such as » Agriculture » Ranching » Logging » Infrastructure » Mining	» Direct PES (e.g. payments for watershed protection) » Improved rural producers technologies » Gazette new protected areas
National/Subnational, such as » National demand for rural products » Urban and transport growth	» Change demand (e.g. electrification to reduce demand for fuelwood and charcoal) » Increase economic opportunities in traditional rural areas to discourage migration to the forest frontier » Improve enforcement against illegal trade in unsustainable rural products
International, such as » International demand for rural products	» Import restrictions (e.g. US Lacey Act, EU FLEGT) » Increase sustainable demand (e.g. international standards on biofuels feedstock for EU, voluntary certification)

Local, national/subnational or international intervention strategies

Another way to look at an intervention strategy is to consider its scale of implementation. Because the drivers of DD can act at multiple scales—from local to international— the intervention strategy would have to do the same. Starting at the smallest scale, **local-level** strategies will act at the project level by changing the behaviour of land users. Typically these strategies will target the direct drivers of DD (e.g. through alternative livelihoods or law enforcement). **National-** and **subnational-level** intervention strategies are policies and measures that promote sustainable natural resource management. These can be a combination of direct and indirect intervention strategies. For example, policies can be established to direct plantations toward degraded lands or to support the development of a sustainable fuelwood sector, or governments can develop rural electrification programs that reduce consumption of fuelwood. Finally, international-level intervention strategies act outside the borders of tropical forest countries and would typically address indirect drivers of deforestation (e.g. import restrictions on deforestation commodities or voluntary commitments to procure sustainable produce). Table 4 gives some examples of intervention strategies at local, national and international levels.

TABLE 5: EXAMPLES OF INCENTIVES AND DISINCENTIVES EMBEDDED IN THE INTERVENTION STRATEGY

TYPE OF INCENTIVES	EXAMPLES
Incentives	» Financial (e.g. subsidies for sustainable agriculture or forestry, PES schemes) » Non-financial (e.g. access to land tenure in return for sustainable management of forests)
Disincentives	» Financial (e.g. fines, taxes and production quotas) » Non-financial (e.g. enforcing existing or new laws that clamp down on deforestation practices)
Enabling conditions	» Enlarge and effectively manage protected areas » Minimize infrastructure developments that encourage deforestation

TABLE 6: EXAMPLES OF INTERVENTION STRATEGIES TO ADDRESS THE SUPPLY OR DEMAND OF DRIVERS OF DD

CRITERIA	EXAMPLES OF INTERVENTION STRATEGIES
Supply-side	» Commodity certification schemes » Support for sustainable forest management
Demand-side	» Fuel switching (e.g. biogas stoves) » Import and trade restrictions (e.g. FLEGT, US Lacey Act) » Increase demand for sustainably produced rural products (e.g. by greening public sector procurement)

TABLE 7: EXAMPLES OF MOSTLY PUBLIC-DRIVEN AND MOSTLY PRIVATE-DRIVEN INTERVENTION STRATEGIES

MOSTLY	EXAMPLE OF INTERVENTION STRATEGIES
Public-sector driven	» Integrate REDD+ into national development strategies » Landscape level planning » Improve inter-institutional coordination » Address corruption and limited law enforcement
Private-sector and NGO driven	» Sustainable management and certification of forest products » Voluntary carbon markets » Private responsible investment schemes
May be driven by a partnership of public sector, private sector and NGOs	» Responsible investment using preferential loans and grants to support REDD+ and other environmentally sustainable rural activities (e.g. FIP private sector tranche) » Bilateral and multilateral programs with participation of businesses and NGO (e.g. OPIC, Global Alliance for Clean Cookstoves)

Incentives, disincentives or enabling conditions (table 5)

A third way in which intervention strategies can be analyzed and prioritized is by considering whether they provide either incentives (carrots) to motivate land users or disincentives (sticks) to those who cause DD. Incentives and disincentives can be provided through a variety of means: financially (e.g. through payments or fines) and non-financially (e.g. through technical support to move producers to more sustainable production practices). Enabling conditions create an environment in which deforestation is less likely to occur (e.g. land-use planning, changes to infrastructure design and new protected areas).

Supply-side or demand-side intervention strategies (table 6)

A fourth way to look at intervention strategies is to consider whether they aim to influence the supply or demand of forest-risk commodities. As shown in Figure 1, demand for land for croplands, pastures, shifting cultivation and wood harvest is responsible for the release of ~1.5 $GtCO_2$ per year.

Supply-side intervention strategies would aim to improve the sustainability of rural production and natural resource management. These interventions can range from certification schemes for sustainable commodities (e.g. FSC or Roundtable on Sustainable Palm Oil) to moving agriculture out of the forest frontier and into degraded or non-forest lands.

Demand-side interventions, on the other hand, would reduce the demand for unsustainably produced rural goods and services by promoting switching fuel away from firewood and charcoal to biogas stoves and electricity, by expanding the market for certified sustainable products, by restricting the trade of non-sustainable products, or by promoting lifestyle changes to reduce the rich consumer's ecological footprint. While supply-side interventions will end up being implemented on the ground at local or subnational scales, demand-side interventions can be implemented at the local, national or international levels.

Public or private sector (table 7)

A fifth and final way of considering intervention strategies is to understand whether the intervention strategy requires the **public sector** to lead it or whether it can be led by the **private sector**, non- governmental sectors or a combination of these. The public sector will have a significant role to play in establishing policies, laws and institutions to achieve REDD+. Publicly led intervention strategies include national-level strategies such as tenure reform, positive incentives (see chapter on benefit sharing), and rehabilitation of degraded land (Kissinger et al., 2012), up to international interventions (e.g. import restrictions, as outlined above). Moreover, public-sector interventions can address both the direct and indirect drivers of deforestation.

There are now several examples of purely private-sector interventions that aim to address DD. These include sustainable procurement of certified commodities (e.g. RSPO, RTRS), environmentally responsible investment (i.e. impact investment), and forest carbon markets.

TABLE 8: OVERVIEW OF CREDIBLE THIRD-PARTY STANDARD SCHEMES SUPPORTED BY WWF (ADAPTED FROM WWF, 2012)

COMMODITY	MULTI-STAKEHOLDER INITIATIVE/ STANDARD SETTING SYSTEM	WEBSITE	LAUNCH OF ORGANIZATION	LAUNCH OF STANDARDS	LOGO
Timber	Forest Stewardship Council (FSC)	fsc.org	1994	1994	FSC
Pulp and Paper	Forest Stewardship Council (FSC)	fsc.org	1994	1994	FSC
Soy	Roundtable on Responsible Soy (RTRS)	responsiblesoy.org	2004	2010	RTRS
Palm Oil	Roundtable on Sustainable Palm Oil (RSPO)	rspo.org	2003	2008	RSPO
Cotton	Better Cotton Initiative (BCI)	bettercotton.org	2005	2007	BCI Better Cotton Initiative
Sugar	Bonsucro	bonsucro.com	2004	2010	BONSUCRO
Biofuels	Roundtable on Sustainable Biofuels (RSB)	rsb.org	2007	2011	RSB
Livestock	Global Roundtable on Sustainable Beef (GRSB)	sustainablelivestock.org	2012	—	

Finally, many intervention strategies will use a combination of public-private partnership. These can be coordinated efforts within entire sectors or focused on key commodities, such as the Dutch Sustainable Trade Initiative's efforts to promote sustainable approaches to agricultural commodity production or the US government alliance with the Consumer Goods Forum (Kissinger et al., 2012).

Examples of intervention strategies

As outlined in the previous section, there are many intervention strategies for addressing the drivers of DD, and to be successful, national and subnational REDD strategies will need to consider the range of intervention strategies presented in the previous section and select the combination that looks most promising to address the DD in the specific national or subnational context. To help such selection process, this section discusses in more detail several key intervention strategies.

Certification

One of the primary options for addressing forest loss is through the certification of commodities that cause forest loss using metrics of environmental sustainability. According to FAO (2012), by 2011, some 13 per cent of the world's productive forests were certified as sustainably produced, and the figure was 17 per cent for coffee (*Agnew et al., 2006*). Dominant examples of environmentally friendly certification schemes are listed in Table 8.

Although there is a dearth of detailed studies of how much REDD+ can be achieved through commodities certification in different landscapes and countries (Agnew et al., 2006),

certification schemes are likely to be a part of the institutional and political REDD+ strategy of any tropical country, and we therefore need to work to fill in the gaps of our understanding about the long-term impact of these schemes.

Improved technologies

Improved technologies as part of the country's low emission development strategies could be a key intervention strategy to address DD. Certain activities such as cooking and heating have a large forest footprint in the least developed countries, and the dissemination of alternative technologies will be essential to reducing their emissions. For example, dissemination of fuel-efficient cookstoves and alternative cooking technologies such as biogas have been shown to significantly reduce DD in the least developed countries.

Likewise, more efficient processing and manufacturing of wood products, such as advances in engineering for paper that enable the near limitless reuse of short recycled fibres, or engineered wood products that can be manufactured from fast-growing, underused and less expensive tree species, can also help reduce the amount of wood taken from forests. Dissemination of these technologies is a promising intervention strategy to address the drivers of deforestation.

Law enforcement

At the national and subnational levels, REDD+ needs to involve a broad set of policies, including direct regulations in the form of enforcement of forest laws, appropriate management of protected areas, and better land-use planning and resource concession policies (Angelsen et al., 2009).

© MICHEL ROGGO / WWF-CANON

RECENT LAW ENFORCEMENT ACHIEVEMENTS IN REDUCING DEFORESTATION IN THE LEGAL AMAZON

from (Assunção et al., 2012)

After gradually increasing to over 2.7 million ha / year in 2004, the deforestation rate in Brazil's Legal Amazon decreased almost continuously over the following years to about 0.7 million ha / year in 2009.

What were the intervention strategies that achieved this remarkable outcome? Two alternative explanations have been proposed for this shift. On the one hand, unfavourable market conditions and downward prices for rural commodities may have discouraged deforestation for farmland expansion. On the other hand, conservation policies aimed at controlling and preventing deforestation in Brazilian Amazon underwent significant revisions during the 2000s, marked by two relevant turning points. First, the launch of the Plan for the Prevention and Control of Deforestation in the Legal Amazon (PPCDAm) in 2004 integrated actions across different government institutions and introduced innovative procedures for monitoring, environmental control, and territorial management. Second, and thanks to Brazil's sophisticated forest monitoring system, novel policy

measures were implemented beginning in 2008 that targeted municipalities with critically high rates of deforestation. Together with increased law enforcement, the new measures made bank credit to rural producers conditional upon proof of the borrower's compliance with environmental regulations.

Results of this study indicate that the conservation policies associated with the two turning points were effective at curbing deforestation rates in Brazil. The results suggest that these conservation policies avoided 6.2 million ha of deforestation or around half of the total deforestation that would have occurred from 2005–2009 if policies had not been adopted.

These days, in many developing countries, inadequate enforcement of existing forest regulation is the key driver of DD. For example, it has been estimated that in Indonesia and Brazil illegal logging was responsible for around 75 per cent of deforestation until early in 2000 when stringent law enforcement significantly reduced these figures (*Lawson and MacFaul, 2010*). See Focus (left) for a brief on recent successes of law enforcement in Brazil's Amazon.

Combating the trade on illegal forest products is also a major intervention strategy, both at national and international scales. Approximately 15–30 per cent of the volume of wood traded globally has been obtained illegally, with some estimates as high as 20–50 per cent when laundering of illegal wood is included (*UNEP-Interpol, 2012*).

Last but not least, well-managed protected areas can be an important deterrent of deforestation and forest degradation. Over 12 per cent of the planet's land surface is now under protected areas status (World Database of Protected Areas, 2010), and although more studies are needed, research has found that protected areas do reduce deforestation (*Clark et al., 2008, Nelson and Chomitz, 2009*).

Reducing unsustainable demand

Where feasible, reducing the demand for forest-risk commodities will be a key intervention strategy in addressing DD. Demand-side reductions can come from either the private sector, through moratoria or sustainable procurement, or the public sector, through legislation such as import regulations in importing countries. These initiatives, while reducing the indirect driver of deforestation, will need to be matched with activities on the

ground (e.g. certification of supply) to ensure that demand can be met.

Moratoria

The most well-documented examples of moratoria on forest-risk commodities are the 2006 soy moratorium and the 2009 cattle moratorium, both of which were implemented in the legal Amazon biome (Walker, 2007). By vetoing unsustainable practices, moratoria create a demand for zero deforestation commodities.

Under the soy moratorium, which began with a Greenpeace campaign connecting deforestation with demand for soya in Europe (Greenpeace International, 2006), the Brazilian Vegetable Oil Industry Association —whose members included the majority of Brazilian soy traders—agreed to not purchase soy from newly deforested areas of the Brazilian Amazon. Similarly, the cattle moratorium was an agreement by four meatpacking giants— JBS, Bertín, Marfrig and Minerva—following another Greenpeace report about the impacts of cattle ranching on the Amazon—to only buy beef from ranches that could demonstrate zero deforestation after 5 October 2009 (Walker, 2007).

Sustainable procurement

Many companies are now making voluntary efforts to ensure that their supply chains contain only responsibly sourced products. All companies participating in the Global Forest & Trade Network (*gftn.panda.org*) publicly issue responsible wood and fibre procurement policies and make a commitment to eliminating any unknown or unwanted sources of wood in their supply chains over time while progressively increasing the amount of Forest Stewardship Council

(FSC)-certified or recycled material in their supply chains. Supplier engagement, traceability and transparency have become essential for companies managing supply chain and brand risks. Companies such as IKEA, Kimberly-Clark and Hewlett-Packard have made their FSC targets public and are communicating their progress toward those goals.

Coalitions of companies are also driving positive change in procurement practices. The Consumer Goods Forum and the 400 companies that it represents have made a commitment to eliminate deforestation in their supply chains by 2020.

International public regulation

Demand-side measures can also be implemented internationally through import restrictions. Few examples exist of government-driven regulation for sustainable commodities, and these are predominantly centred on timber. They include the EU's green public procurement legislation; the US Lacey Act, which makes it a criminal offense to import, handle or sell illegally sourced wood products; the EU Timber Regulation, which requires those placing wood products in the EU to exercise due diligence to ensure that the wood was legally sourced; and recent FLEGT EU legislation that only allows public procurement of timber from sustainable sources (Parker et al., 2012).

Increasing sustainable supply

Global demand for forest-risk commodities is projected to increase significantly over the coming decades. One way to address this indirect driver of deforestation and forest degradation is by increasing the sustainable supply of these commodities. Various intervention strategies will be needed, including shifting production onto degraded lands and intensification in current areas, including expanding production in well-managed natural forests. Certification, as well as law enforcement, will also help to increase sustainable supply and reduce illegal encroachment into forest areas.

Shifting production to degraded lands

Several initiatives are aiming to shift production of forest-risk commodities to degraded lands. Project POTICO by WRI has been seeking to divert up to 0.5 million hectares of oil palm plantations onto degraded land, which could avoid the emission of around 450 MtCO$_2$. Similarly, creating forest plantations on degraded lands will help replace supplies of timber, paper and pulp that would otherwise lead to deforestation of natural forests. WWF's work in New Generation Plantations (see Focus, right) is an example of this work in action.

Intensification of production

Increasing the productivity of agriculture on existing farmland (intensification) can help meet the global demand for forest-risk commodities without causing deforestation on additional lands (extensification). Still, research has shown that intensification of production to reduce deforestation, known as the Borlaug hypothesis, needs to be coupled with land use conservation policies to reduce renewed conversion of tropical

---

FOCUS

VERACEL CELLULOSE: FOREST RESTORATION, CARBON STORAGE AND INCOME GENERATION: MONTE PASCOAL— PAU BRAZIL ECOLOGICAL CORRIDOR

WWF's Living Forests Report model predicts that 4–6 million hectares of new plantations will be needed every year between now and 2050 to meet the growing demand for timber, fibre and biomass for energy. However, we recognize that in some areas, without significant changes in policies and practices, expanding intensively managed plantations will cause controversy— for instance, by threatening the rights or livelihoods of forest-dependent peoples or valuable ecosystems and biodiversity.

In 2007, WWF set up the New Generation Plantations project, in partnership with private forestry companies and government agencies. New Generation Plantations are forest plantations that:

- Maintain ecosystem integrity;
- Protect and enhance high conservation values;
- Are developed through effective stakeholder involvement processes;
- Contribute to economic growth and employment.

The goal of the New Generation Plantations project is to identify, promote and communicate better practices for plantation design and management.

The Monte Pascoal–Pau Brazil Ecological Corridor project aims to restore Atlantic rainforest on suitable areas belonging to local landowners, especially cattle ranchers. The project goal is to connect isolated fragments of the Atlantic Rainforest and form a native forest corridor between two national parks, Monte Pascoal and Pau Brazil.

The project supports social development in the region by providing concrete jobs and income opportunities for the local community. A local cooperative, Cooplantar (Cooperative of Reforestation Workers of Far Southern Bahia), carries out the practical planting and restoration work. There are several ongoing ecological corridor projects in Brazil. Success depends strongly on how they are financed. All ecological corridor projects are carried out within the broader governmental effort to find resources to connect rainforest fragments in coastal Brazil.

More information on New Generation Plantations at **bit.ly/15FV1Kx**

More information on the Monte Pascoal-Pau project at **bit.ly/166jPv5**

forests, now motivated by the increased profitability of intensified agriculture, the so-called Jevons paradox (*Gutierrez-Velez et al., 2012, Barreto et al., 2012*).

Expanding production in well-managed natural forests can also help to sustainably meet rising global demand for forest products. Well-managed forests can play an increasingly important role in deterring destructive and illegal logging and outright deforestation. Research shows that managed forests may be as effective, or more effective, in reducing deforestation in comparison to protected areas. Well-managed forests provide carbon benefits together with streams of social, economic and environmental benefits while being more resistant to fire and more resilient to climate change than conventionally logged forests. The WWF Living Forests Report models show that another 200–300 million hectares of forest would need to be managed responsibly for commercial harvesting by 2050 to meet increased demand for food, fuel and fibre (WWF, 2012b).

WWF VIEWPOINT

In February 2012, WWF supported the CAN International submission to the UNFCCC on drivers of deforestation.[4] This submission recommended the following steps:

For REDD+ countries:

- Address drivers of forest area and carbon loss in multi-sectoral low emissions development strategies and in national low carbon development plans.

- Encourage parties to UNFCCC to reform ineffective legal and governance frameworks, monitor drivers and clarify land-use rights and responsibilities.
- Request that NAMAs integrate climate mitigation goals with land-use policies across different sectors, including agriculture, mining, public infrastructure, urban development and forestry.
- Encourage parties to UNFCCC to identify and utilize existing abandoned and degraded land for production.

For all countries:

- Note the importance of and invite parties to UNFCCC to assess policy instruments to reduce the footprint of national and international markets and trade through enforcement of laws and governance, by developing and implementing sustainable and responsible procurement, and by promoting credible certification.
- Invite parties to UNFCCC to adopt policies to encourage the private sector to take actions that reduce its contribution, whether direct or indirect, at home or abroad, to deforestation and forest degradation.
- Invite parties to UNFCCC to address leakage prevention through international coordination and active participation by developed countries and major emerging economies that play a key role in the demand for commodities such as palm oil, beef and soy.
- Encourage all parties to UNFCCC to implement policies and develop incentives to reduce wasteful consumption.

- Encourage all parties to UNFCCC to remove perverse incentives that drive deforestation and degradation and ensure responsible finance, including consideration of taxes, subsidies and investment.

In November 2010, in advance of COP 16, WWF also produced a position paper on the international drivers of deforestation. This position paper made three key points:

- Uniform policies are needed across markets to promote, track and label legal and sustainable products.
- International policies need to account for direct and indirect drivers of deforestation, including land-use change, and robust sustainability safeguards need to be implemented in order to avoid counterproductive policies.

- Countries should take steps to put a price on carbon emissions to internalize the cost of damages and incentivize better forest management practices.

Finally, around the issue of certification, WWF participates actively in many of the roundtables and certification schemes governing sustainable production of forest-risk commodities (e.g. FSC, RSPO, RTRS and Bonsucro). See Annex 1 for a list of key experts and contacts in these roundtables and the further resources section below for links to WWF initiatives acting in these areas.

© JULIE PUDLOWSKI / WWF

FURTHER RESOURCES

- WWF Global Forests and Trade Network: *bit.ly/13thhna*
- WWF Market Transformation Initiative: *bit.ly/15FWDEa*
- New Generation Plantations: *bit.ly/15FV1Kx*
- Biogas stoves (Gold standard): *bit.ly/10u0ATz*
- Global Alliance for Clean Cookstoves: *www.cleancookstoves.org*
- Illegal logging and FLEGT: *loggingoff.info*

BIBLIOGRAPHY

AGNEW, D., GRIEVE, C., ORR, P., et al. 2006. *Environmental benefits resulting from certification against MSC's principles and criteria for sustainable fishing*. Marine Resources Assessment Group U.K. and Marine Stewardship Council, London, UK.

ANGELSEN, A., BROCKHAUS, M., KANNINEN, M., et al. 2009. *Realising REDD+: national strategy and policy options*. CIFOR, Bogor, Indonesia.

ASSUNÇÃO, J., GANDOUR, C. C. and R. ROCHA. 2012. *Deforestation Slowdown in the Legal Amazon: Prices or Policies?* Climate Policy Initiative, Rio de Janiero, Brazil.

BARRETTO, A., BERNDES, G., SPAROVEK, G. et al. 2013. Agricultural intensification in Brazil and its effects on land use patterns: An analysis of the 1975–2006 period. *Global Change Biology*, in press.

BÖRNER, J., WUNDER, S., WERTZ-KANOUNNIKOFF, S., et al. 2011. REDD. *Sticks and carrots in the Brazilian Amazon: Assessing costs and livelihood implications*. In: CGIAR RESEARCH PROGRAM ON CLIMATE CHANGE, A. A. F. S. C. (ed.) CCAFS Working Paper no. 8. Copenhagen, Denmark.

CLARCK, S. et al. 2008. *Protected areas: an effective tool to reduce emissions from deforestation and forest degradation in developing countries?* UNEP ECMC, London, UK.

DEFRIES, R. S., RUDEL, T., URIARTE, M., et al. 2010. Deforestation driven by urban population growth and agricultural trade in the twenty-first century. *Nature Geoscience*, 3, 178-181.

FAO. 2013. *Forest Products Annual Market Review 2011–2012*. FAO, Rome, Italy.

FISHER, B. et al. 2011. The high costs of conserving Southeast Asia's lowland rainforests. The Ecological Society of America. *Frontiers in Ecology and the Environment* 2011; 9(6): 329-334.

GAUDIOSO, D. and MAGRINI, A. 2011. *Tropical deforestation: current trends and potential sustainable policies*. ENEA, Rome, Italy.

GEIST, H. J. and LAMBIN, E. F. 2002. Proximate Causes and Underlying Driving Forces of Tropical Deforestation. *Bioscience*, 52, 143-150.

GRAHAM, K. 2011a. *Making REDD+ cross-sectoral: why, how, and what are the potential socio-economic impacts?* In: INSTITUTE, O. D. (ed.) REDD-Net Policy Brief. REDD-Net, London, UK.

GRAHAM, K. 2011b. *REDD+ and energy: a crosssectoral approach to REDD+ and implications for the poor*. In: INSTITUTE, O. D. (ed.) REDD-Net Policy Brief. REDD-Net, London, UK.

GREENPEACE INTERNATIONAL. 2006. *Eating up the Amazon*. Greenpeace, London, UK.

GUTIERREZ-VELEZ, V.H., DEFRIES, R.S., PINEDO-VASQUEZ, M., et al. 2011. High-yield oil palm expansion spares land at the expense of forests in the Peruvian Amazon. *Environmental Research Letters* 6(4).

HANSEN, M., STEHMAN, S. V., POTAPOV, P. V., et al. 2008. Humid tropical forest clearing from 2000 to 2005 quantified by using multitemporal and multiresolution remotely sensed data. *PNAS*, 105, 9439-9444.

HOUGHTON, R. A. 2010. How well do we know the flux of CO2 from land-use change? *Tellus*, 62B, 337-351.

HOSONUMA et al 2012. An Assessment of Deforestation and Forest Degradation Drivers in Developing Countries, *Environmental Research Letters* 7 044009.

KISSINGER, G., HEROLD, M. & DE Sy, V. 2012. *Drivers of Deforestation and Forest Degradation: A Synthesis Report for REDD+ Policymakers*. Lexeme Consulting, Vancouver, Canada.

MEGEVAND, C., et al 2013. *Deforestation Trends in the Congo Basin. Reconciling Economic Growth and Forest protection*. The World Bank, Washington, DC.

NELSON, A. and CHOMITZ, M. 2009. *Protected Area Effectiveness in Reducing Tropical Deforestation. A Global Analysis of the Impact of Protection Status*. IEG—World Bank, Washington, DC, USA.

PACHECO, P., PUTZEL, L. and K. OBIDZINSKI. 2012. *REDD+ and the global economy: Competing forces and policy options*. CIFOR, Bogor, Indonesia.

SCHONEVELD, G. In: ANGELSEN, A. (ed.) 2012. *Analysing REDD+: Challenges and choices*. CIFOR, Bogor, Indonesia.

PARKER, C., CRANFORD, M., OAKES, N., et al. 2012. *The Little Biodiversity Finance Book*. 3rd Edition. Global Canopy Programme, Oxford, UK.

RADEMAEKERS, K., EICHLER, L., BERG, J., et al. 2010. *Study on the evolution of some deforestation drivers and their potential impacts on the costs of an avoiding deforestation scheme*. Ecorys, Rotterdam, The Netherlands.

RUDORFF, B. F. T., ADAMI, M., AGUILAR, D. A., et al. 2011. The soy moratorium in the Amazon biome monitored by remote sensing images. *Remote Sensing*, 3, 185-202.

UNEP-INTERPOL. 2012. *Green carbon, black trade. A rapid response assessment illegal logging, tax fraud and laundering in the world's tropical forests*. UNEP, Nairobi, Kenya.

UNION OF CONCERNED SCIENTISTS. 2011. *The Root of the Problem: What's Driving tropical Deforestation Today*. Union of Concerned Scientists, Cambridge, MA, USA.

UN-REDD 2012. *Synthèse des études sur les causes de la déforestation et de la dégradation des forêts en République Démocratique du Congo*. UN-REDD, Kinshasa, DRC.

WALKER, N. 2007. *Agribusiness in the Brazilian Amazon and the Establishment of a Moratorium on Deforestation for Soya* (unpublished).

WWF. 2012. *Better Production for a Living Planet*. WWF-International, Gland, Switzerland.

WWF 2012b. *Living Forest Report*. WWF-International, Gland, Switzerland. bit.ly/18Z0xVI

ENDNOTES

1. Decision 1/CP.16 para. 68
2. Decision 1/CP.16 para. 72
3. For an example, see bit.ly/10u49ZG
4. bit.ly/166sIEQ

WWF GUIDE TO BUILDING REDD+ STRATEGIES

Achieving REDD+
ACCESSING FINANCE

DOWNLOAD THIS CHAPTER

© SIMON RAWLES / WWF-CANON

Key Messages

- International and national REDD+ finance will need to be scaled up significantly if we are to address the drivers of forest loss and achieve zero net emissions from deforestation and forest degradation (ZNEDD).

- The sources and disbursement modalities of REDD+ finance may vary as REDD+ moves through planning and initial implementation (phases 1 and 2) to performance-based results (phase 3). Currently, the majority of REDD+ finance for phases 1 and 2 comes from domestic, bilateral and multilateral investments; while finance for phase 3 requires scaling up current sources and adding a variety of new sources both public and private.

- Private sources may play an increasing role in the future of REDD+ finance if strong emissions caps create a large market for carbon offsets. Thus far, current climate mitigation policies provide limited incentives for private-sector investment in REDD+.

© WWF-US / DEBORAH GAINER

INTRODUCTION

This chapter discusses how tropical forest countries can engage at the multilateral and bilateral levels to access international sources of funding for REDD+ as well as how they can mobilize national and subnational sources of REDD+ funding.

Achieving zero net emissions from deforestation and forest degradation (ZNEDD) by 2020 will only be possible with a significant and immediate scaling up of investment to counter the drivers of forest loss (*WWF, 2011*). While it is currently impossible to accurately predict the cost of achieving ZNEDD in any particular country, various estimates of the global finance needed have been attempted. For example, the Eliasch Review (2008) estimated that reducing world deforestation by 50 per cent by 2020 would require up to US$33 billion per year in 2020, whereas according to another study, an elimination of deforestation by 2100 could cost as much as US$185 billion per year in 2100 (Parker, Brown et al., 2009). In 2010 WWF supported an NGO estimate of a minimum US$42 billion per year by 2020 (Streck and Parker, 2012).

Given that the total amount of public REDD+ finance currently pledged is about US$14.5 billion, it is clear that the finance gap is immense. A delay of even one decade in reaching ZNEDD would sacrifice another 69 million hectares of forest worldwide, emitting at least an additional 24 $GtCO_2$ into the atmosphere (WWF, 2011). The urgency of REDD+ finance is clear.

Finance for REDD+ can come from a variety of sources, including public and private, national and international. The mechanism to deliver these funds also may vary, including grants, loans, market-based mechanisms and innovative mechanisms such as payments for ecosystem services. Sources and delivery mechanisms for REDD+ finance may also vary as REDD+ moves through its three phases—readiness, implementation and verified emissions reductions. Phases 1 and 2 may be largely funded by bilateral and multilateral sources, whereas phase 3 may require additional types of financing, including innovative public and private sources.

As stated before, this chapter discussion is about accessing international and national funding for REDD+. For a discussion on what to expend the REDD+ funds on, see the chapter on addressing the drivers of deforestation. For a discussion on how to distribute the funds, see the chapter on *Benefit Sharing*. For a discussion on the national costs of REDD+, see the chapter on the economics of REDD+.

INTERNATIONAL POLICY CONTEXT

International finance for REDD+ is being addressed at multiple levels, most significantly at the level of the United Nations Framework Convention on Climate Change (UNFCCC). Since 2007, at the 13th Conference of the Parties (COP 13) to UNFCCC in Bali, REDD+ finance has been discussed. As part of these discussions, the UNFCCC financing mechanisms—currently the Global Environment Facility (GEF) and the Clean Development Mechanism (CDM)—have been thus far a minor source of REDD+ funding, but this situation may change when the Green Climate Fund (GCF) of the UNFCCC becomes operational.

In the meantime, several multilateral funds have been the major sources of international financing for REDD+, notably the Forest Carbon Partnership Facility (FCPF), the Forest Investment Program (FIP), and the UN-REDD Program, capitalized by grants from developed countries, as well as several developed countries' bilateral programs such as Norway's International Climate and Forest Initiative.

Following is an outline of the international policy that has been developed to date under the UNFCCC to guide the delivery of REDD+ finance. How to access multilateral and bilateral funds will be discussed in the next section on national and subnational options.

COP 13: Bali, 2007
In 2007, at COP 13 in Bali, parties to the UNFCCC, in particular Annex II parties,[1] were invited to "mobilize resources to support efforts in relation to [REDD+]."[2]

COP 15: Copenhagen, 2009
In 2009, at COP 15 in Copenhagen, developed country parties agreed to commit US$30 billion in fast-start finance for the period 2010–2012.[3] Parties also committed to raise US$100 billion per year by 2020, of which a significant portion may go toward REDD+. Parties also established the GCF, established, in part to provide "support to developing countries to limit or reduce their greenhouse gas emissions". Whether this fund will have a window to finance REDD+, however, is still under negotiation.

Although developed countries have committed significant mitigation funding during 2010–2012, observers have pointed out that there is neither transparency regarding the additionality and allocation of these funds nor any clarity regarding what will happen with climate financing after 2012 (see *Brown et al., 2011*).

COP 16: Cancun, 2010

The question of how REDD+ is going to be financed has always been a divisive subject among parties, and in 2010 at COP 16 in Cancun, parties failed to reach an agreement. It was eventually decided that, to fund mitigation actions more broadly, not just REDD+, "funds provided to developing country parties may come from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources."

COP 17: Durban, 2011

In 2011, at COP 17 in Durban, parties also took up the question of financing sources for REDD+, but once more they were unable to agree on it. COP 17 restated that results-based REDD+ finance could come from a variety of sources,[4] and parties agreed to a follow-up workshop in Bangkok.[5] In the broader finance negotiations, the GCF was launched.

COP 18: Doha, 2012

In 2012, at COP18 in Doha, a new series of studies related to REDD+ financing was commissioned and more technical meetings were scheduled, but no substantial advance on the issue was made.[6] Currently, as of mid-2013, the UNFCCC is still negotiating long-term financing options for a possible future global REDD+ mechanism (phase 3) as well as how REDD+ activities are going to be financed up to 2020 when it is expected that a new globally binding agreement will be in place.

Again, currently, as of mid-2013, most international REDD+ finance is going toward phases 1 and 2 activities to support countries in getting ready to undertake REDD+ at scale. Only a portion of the billion dollars of fast-start funds pledged at COP 15 have been made available, and a much smaller portion has actually been disbursed. Moreover, how the period between 2012 and 2020 will be financed is still not agreed upon.

It is expected that once a global REDD+ mechanism is in place, funds will be target to results-based actions (phase 3). The definition of results-based payments is still being negotiated under the UNFCCC and could be defined either as ex-post payments for tonnes of emissions reductions or as sustained funding to improve the design and implementation of policies addressing the drivers of deforestation and forest degradation (Karsenty, 2012). Either way, payment will be conditional on REDD+ countries providing quantifiable emissions reductions at the national or subnational level.

NATIONAL AND SUBNATIONAL OPTIONS

Developing countries have a dual agenda regarding accessing REDD+ financing: (a) to participate in the international discussion of REDD+ funding needs and sources and (b) to effectively and efficiently access existing sources of domestic, bilateral and multilateral REDD+ financing. This section focuses on the latter.

Domestic finance

Whereas international financing is essential for developing countries to achieve ZNEDD, it is equally important to explore in-country funding for REDD+. Although data on domestic finance for REDD+ is lacking, it is an important source of finance and often surpasses international contributions for REDD+ (Streck and Parker, 2012).

There are many examples of emerging economies—middle-income and even some low-income developing countries—financing domestic REDD+ activities. Depending on the country-specific economic conditions, there are a variety of options for domestically financing REDD+ (Parker, Brown et al., 2009), including the following:

- Public budgets: Many countries are already delivering large-scale domestic finance for REDD+ from their public budgets. In some cases finance has been directly targeted toward REDD+ activities, whereas in others finance is directed toward agricultural and forestry activities that can improve forest conservation. From 1999 through 2008 China's Grain for Green program paid Chinese farmers in erosion-prone areas US$44 billion to convert 8.2 million hectares of cropland to forest lands. All the funds for the Grain for Green program came from domestic budget allocation (Liu and Wu, 2010). Brazil has several domestically financed forest conservation programs. The best known of these is the Ecological Value Added Tax. The Ecological Value Added Tax is a federal tax implemented by the Brazilian Treasury. Under the tax, the size and management of protected areas was included in the calculation of the allocation of national VAT to states. This gave states an incentive to gazette and properly manage protected areas. (May, Gebara et al., 2012).

- Payments for ecosystem services (PES): Many REDD+ countries have implemented PES programs that pay for forest conservation to deliver ecosystem services (e.g. water conservation, erosion protection, biodiversity, carbon sequestration). Payments can be raised from direct users (e.g. industry, households, tourists) or through governments' taxation (e.g. a water fee, fuel tax). Costa Rica has had a successful PES program in place since 1997 for forest conservation that disburses US$15–20 million a year and has reached almost 15 per cent of the country's natural forests. During these 20 years, the country's forest cover grew from 42 per cent to 52 per cent. Costa Rican forest PES has received small grants from the GEF, the German government-owned development bank KfW and loans from the World Bank, but the majority of the funds are domestically sourced and come from a portion of the country's gasoline tax (Barton, Chacon et al., 2012).

- Unsupported nationally appropriate mitigation actions (NAMAs): Many developing countries have pledged to undertake voluntary, domestically supported mitigation targets that may also become a source of REDD+ finance. For example, Indonesia has committed to achieve a reduction of 672 million tonnes of CO_2 equivalent by 2020 through domestically financed action, and Brazil has committed to reduce its emissions by 36 per cent by 2020, half of which would come from REDD+ in the Amazon (see chapter on *Goals and Targets*).

Bilateral finance

After domestic sources, bilateral finance is, as of mid-2013, the second largest source of finance for REDD+ projects, accounting for two-thirds of all internationally supported

TABLE 1: SEVERAL BILATERAL FUNDS (AS OF EARLY 2013)

COUNTRY—FUND NAME	FUNDS PLEDGED (MILLIONS OF US DOLLARS)	ACTIVITIES SUPPORTED	SOME RECIPIENT TROPICAL FOREST COUNTRIES
Australia International Forest Carbon Initiative	216	REDD+	Indonesia
Germany International Climate Initiative	1,100	Adaptation and mitigation, including a strong REDD+ focus	Brazil, Ethiopia, India Indonesia, Kenya, Mali, Mexico, Peru, Thailand, Vietnam, Zambia, others
Japan Fast-Start Finance	15,000	Adaptation and mitigation, including REDD+	Brazil, Cambodia, Colombia, India Indonesia, Kenya, Mexico, Peru, Thailand, Vietnam, Zambia, others
Norway International Climate and Forest Initiative	1,600	REDD+	Brazil, Congo Basin, Guyana, Indonesia, Tanzania, Vietnam
UK International Climate Initiative	1,100	Adaptation and mitigation, including a strong REDD+ focus	Brazil, Ethiopia, Indonesia, Kenya, Uganda

Source: The Climate Funds Update www.climatefundsupdate.org

© JENNIFER FERGUSON-MITCHELL / WWF

A rescued bonobo at Lola ya Bonobo Sanctuary in the Democratic Republic of Congo. More information at: www.friendsofbonobos.org.

REDD+ activities, while multilateral sources fund the other third (Streck and Parker, 2012). Among the largest REDD+ donors to date we count Norway, Australia, UK, US, Germany and Japan,[7] as depicted in Table 1.

Multilateral finance

Currently there are more than 15 multilateral climate change funds and a growing number of regional funds. Among the multilateral climate funds solely dedicated to REDD+ funding, the largest by funding capitalization are the Forest Carbon Partnership Facility (FCPF) Readiness and Carbon funds, the Forest Investment Program (FIP) and UN-REDD+. Other funds include the Global Environment Facility (GEF) Sustainable Forest Management and REDD+ Investment Programme. Two large REDD+ focused regional funds are the Congo Basin Forest Fund and the Amazon Fund.[8] An overview of some of these funds is given in Table 2. See *Snapshot Case Study Developing an Emissions Reduction Programme Idea Note in the Democratic Republic of Congo*.

The FCPF is a multilateral fund operated by the World Bank that assists some 36 developing countries in getting ready for REDD+ and provides payments to countries for Verified Emissions Reductions (VERs). The FIP is one of the Climate Investment Funds (CIFs), also operated by the World Bank, that funds REDD+ work in developing countries on readiness reforms and public and private investments. The UN-REDD+ program supports national REDD+ readiness efforts in some 16 countries[9] and also funds the global development of action through common approaches, analyses, methodologies, tools, data and best practices for REDD+.

The GEF is the designated financing mechanism for several multilateral environmental agreements (MEAs), including the UNFCCC, the Convention on Biological Biodiversity (CBD), the Stockholm Convention on Persistent Organic Pollutants (POPS), and the United Nations Convention to Combat Desertification (UNCCD). It is also the largest global environmental fund, distributing approximately US$1 billion a year in environmental grants. Thus far the GEF has a small REDD+ program, the Sustainable Forest Management (SFM)/REDD+ program, which has disbursed, since 2007, approximately US$15 million a year for REDD+ focused projects and another US$80 million a year for SFM-focused projects.[10]

In the international REDD+ arena the FCPF and the FIP are particularly significant not only due to their size but also because they are important trendsetters regarding REDD+ policies and practices, including international modalities and criteria to disburse finance.

To gain better access to international funding, REDD+ countries and REDD+ practitioners should familiarize themselves with the operation of multilateral and bilateral funds and have an understanding of the following:

- **The mandate, programming and chronology of these multilaterals:** As shown in Table 2, each of the multilateral funds has a different mandate and programming chronology for disbursing finance. Familiarity of the overall objectives, processes and steps at which to engage with the various funds will be a key first step toward accessing these funds. The FCPF Readiness Fund, for example, provides approximately US$4 million

SNAPSHOT CASE STUDY

DEVELOPING AN EMISSIONS REDUCTION PROGRAMME IDEA NOTE IN THE DEMOCRATIC REPUBLIC OF CONGO

What

The development by the Government of the Democratic Republic of Congo (DRC) and partners of an Emissions Reduction Programme Idea Note (ER-PIN), based on a range of activities including community-level work in the Mai-Ndombe region of DRC, for submission to the Carbon Fund of the Forest Carbon Partnership Facility (FCPF) for funding of up to US$60 million to launch the largest forest carbon project in Africa.

Context

The DRC is one of six countries that form the Congo Basin, one of the most important areas of biodiversity on the planet, and the second-largest tropical rainforest in the world. Of the DRC's 71 million inhabitants, 94 per cent, or nearly 67 million of them depend on forests as an energy source. Of those, close to 40 million people depend directly on forests for their livelihoods including farming, timber and firewood. Due to these immense pressures, the rate of deforestation in the DRC is one of the highest in the world.

The future Mai-Ndombe Province of the DRC will encompass 12 million hectares, including nine million hectares of tropical forest. In Mai-Ndombe, household-scale slash-and-burn agriculture and exploitation of wood for fuel (including charcoal) and timber along with demand for fuel and timber in the capital city of Kinshasa are the major drivers of deforestation and forest degradation.

The DRC has been working since January 2009 on the REDD+ Readiness process under the leadership of the Ministry of the Environment, Conservation of Nature, and Tourism (MECNT), and in partnership with UN-REDD and the FCPF. A National REDD Committee, an Inter-ministerial REDD Committee, and the national REDD+ coordination agency CN-REDD were formed to ensure intersectoral and multi-stakeholder coordination and participation.

WWF began working on REDD+ in the DRC in 2010, through the establishment of the Mai-Ndombe REDD+ Readiness Project in partnership with national and local government and other stakeholders.

Expected changes

- Produce an ER-PIN collaboratively with a diverse group of stakeholders that would provide the roadmap for a large-scale, jurisdictional emissions reductions programme covering 12 million hectares, reaching 300,000 families and sustainably reducing deforestation and degradation by half;
- Establish and strengthen a public/private partnership;
- Develop social and environmental safeguard mechanisms;
- Align the DRC's REDD+ initiatives with the REDD+ Five Guiding Principles;
- Generate multilateral funding in support of DRC REDD+.

Achievements

- Key information has been compiled for Maï-Ndombe on such issues as divers of deforestation, reference levels, activities essential to REDD+ implementation, implementation costs, etc.
- Process provided an opportunity for key stakeholder concerns to be raised and addressed.
- Development by the DRC of an ER-PIN for on-time submission to the FCPF for potential funding of approximately US$60 million.
- Process was participatory and included input from government representatives, the private sector, international organizations, local non-governmental organizations and IPLCs.

If accepted, this ER-PIN will be the first jurisdictional REDD+ effort on the African continent and the first large-scale REDD+ programme of its type that incorporates government investment, corporate projects and community action. It will also set the bar for REDD+ not only in Africa, but globally.

Challenges

- REDD+ is a relatively new topic in the DRC, and it has been important to involve stakeholders at multiple levels of the decision-making process, which has led to decisions taking longer than may have been planned.
- The participatory process involved diverse stakeholders, including the private sector, with sometimes divergent views and priorities. It was often a challenge to build consensus due to these differences. In this case, it proved difficult to find a methodology that ensured the viability of the overall REDD+ programme while also aligning with the prior methodology approved for a Verified Carbon Standard (VCS) validated REDD+ project in the area.
- Community expectations of economic benefits have been high and have needed to be continually addressed.
- Changes in MECNT staff slowed the process.
- The DRC has many conflicting needs, which makes preparing for REDD+ difficult.
- Some government structures have a low capacity to lead and implement the process.
- Roles and responsibilities related to the decision-making process were not as clear as needed from the start of the process.
- Ensuring that local actors and governments participated fully in the process, as opposed to having overseas consultants and teams take on the majority of the work, was challenging.

Lessons learned

- Activities need to be officially recognized by the government to facilitate scaling them up.
- Define clear leadership, roles and responsibilities for each group at the start of the ER-PIN process.
- An inclusive and transparent process is important to build stakeholder trust and consensus.
- Third-party facilitation may make the process more efficient and effective.
- Establish alliances with private sector actors.
- Empower targeted stakeholders to participate fully in the ER-PIN process.
- Be prepared with flexible capacity on the ground.
- Seek early technical guidance from the FCPF Secretariat.

© JULIE PUDLOWSKI / WWF

toward phase 1 activities, and these awards can be augmented up to an additional US$5 million after a midterm progress review. The FCPF Carbon Fund, on the other hand, will administer US$30–50 million each to five to eight countries to pilot phase 3 payments for emission reductions. The FIP provides larger grants and loans but is currently only considering six pilot countries, and these are targeted toward transformational policy initiatives and demonstration activities (i.e. phase 2 activities).

■ **In-country status of multilateral and bilateral funds:** It is also important to know where your country stands in its relationship with the multilateral and bilateral funds. Is it a FIP pilot country? Has the country submitted its midterm progress report under the FCPF?

This knowledge is important not only to government negotiators. The planning steps that a country takes to access multilateral and bilateral REDD+ funding present some of the best opportunities for non-governmental organizations (NGOs) and civil society organizations (CSOs) to engage with the country's REDD+ process. This is due to the fact that multilateral and bilateral funds demand that governments seeking international REDD+ funding engage domestic stakeholders in the development and review of the REDD+ funding proposals. Furthermore, governments sometimes do not have adequate administrative and/or technical capacity to assemble the many elements required by bilateral and multilateral funds and welcome the technical support from NGOs and CSOs.

TABLE 2: AN OVERVIEW OF SOME REDD+ MULTILATERAL FUNDS (AS OF EARLY 2013)

	FCPF READINESS FUND	UN-REDD	FIP	FCPF CARBON FUND	GEF
Funds Pledged	US$259 million	US$151 million	US$644 million	US$398 million	~ US$1.4 billion per year total ~ US$15–20 million a year for REDD+
Funds Disbursed	< US$20 million	US$91 million	< US$10 million	—	~ US$1 billion per year total ~ US$15 million a year for sustainable forest management and REDD+
Focus on REDD+ Phase	1	1–2	2	2–3	1–2–3
Mandate	National REDD+ readiness (national strategy, RL and MRV plans, stakeholder engagement)	National REDD+ readiness (national strategy, RL and MRV plans, stakeholder engagement) and increased focus on demonstration activities for performance-based finance	Transformational change in forest-related sectors, including focus on engaging private sector and leveraging additional finance (includes private sector reserve and dedicated grant mechanism for indigenous peoples and local communities)	Piloting scaled up pay-for-performance, including payments for emissions reductions resulting from policies, regulations, forest management and land-use planning	On sustainable forest management: To maintain and enhance the economic, social and environmental value of all types of forests, for the benefit of present and future generations
Governance/ Secretariat	Participants Committee/ Facility Management Team	Policy Board/Secretariat	Sub-Committee/ Administrative Unit	CF Participants/Facility Management Team	GEF Board/GEF Secretariat/ Implementing (delivery) Partners
Fund Status	24/36 RPPs submitted, 9 grants signed; multiple pending 2013	16 Partner countries with approved funding for UN-REDD national programs	7–8 countries have endorsed investment plans	Accepting ER-PIN submissions; early awards expected 2014	More than 300 sustainable forest management projects funded since 1991
Programming Chronology	» Readiness proposal idea note (R-PIN) » Readiness preparation proposal (RPP) » Midterm progress report » Readiness package (R-package)	Joint program document	» Investment plan preparation grant » Scoping missions » Investment plan endorsement » Project approvals	» Emissions reduction program idea note (ER-PIN) » Readiness package approval » Emissions reduction program negotiation (pipeline) » Emissions reduction payment agreement (ERPA)	» The GEF grants allocation system (called STAR) defines the overall level of funding for each country, including funding for climate change mitigation and adaptation. » Country and delivery partners propose specific programs and projects
Delivery Partners	WB, IDB (pending), UNDP (pending)	FAO, UNDP, UNEP	AFDB, ADB, EBRD, IDB, IFC, WB	WB	WB, IDB, ASB, AfDB, FAO, UNDP, UNEP, WWF
Some Funds Recipient Countries	Colombia, DRC, Indonesia, Mexico, PNG, Peru, Nepal	DRC, Bolivia, PNG, Vietnam	Peru, DRC, Mexico, Brazil, Indonesia, Ghana	DRC, Nepal	Paraguay, Peru, Indonesia, Brazil, Thailand, India, Congo Basin, other
Website	www. forestcarbonpartnership. org/fcp	www.un-redd.org	www. climateinvestmentfunds. org/cif/node/5	www. forestcarbonpartnership. org/fcp	www.thegef.org

FOCUS

FINANCING FOREST CONSERVATION IN THE HEART OF BORNEO

The Heart of Borneo is a multilateral initiative led by the governments of Brunei, Indonesia, and Malaysia. In 2007 the three governments signed the Heart of Borneo Declaration, committing to conservation and sustainable development across 22 million hectares of transboundary tropical rainforests. WWF and several partners support the implementation of the regional plan of action as well as national programs of work in each of the three countries. The work spans five priorities: Protected Areas, Transboundary Conservation, Sustainable Forest Management, Ecotourism and Capacity Building.

Since 2010, WWF and partners have been working with the three governments to design strategies that will enable them to sustainably manage the vast natural capital of the Heart of Borneo as part of long-term economic development plans. In order to establish green economies in the Heart of Borneo, investments must be made to create the enabling conditions for long-term success. During the Rio+20 Summit, WWF and Indonesia's President Yudhoyono launched a report titled *Heart of Borneo: Investing in Nature for a Green Economy*. The first of its kind, the report outlines a pathway to achieving a future green economy in the Heart of Borneo, showcasing the vitally important values of the Heart of Borneo's ecosystems and biodiversity as well as highlighting environmental and social costs resulting from the current economy's failure to account for natural capital values. The work presents policy solutions and investment options, and analyzes on-the-ground opportunities for the forestry, agriculture and mining industries to contribute to a future green economy.

The Heart of Borneo is one of the four focal programs supported under WWF's partnership with the Asian Development Bank (ADB). WWF and the ADB have worked closely with other partners, including UN agencies and bilateral agencies, to help the Government of Indonesia use REDD+ fast-start financing to invest in capacity-building, institution strengthening, policy analyses and reform, and low-carbon and green development planning. The expectation is that REDD+ financing can support green and sustainable economic growth plans that seek to conserve natural capital and ecosystems as well as alleviate poverty. A tangible example of this approach is the Forest Investment Program (FIP) in Indonesia. As part of the US$70 million programs designed by the Government of Indonesia and multilateral partners (World Bank, IFC and ADB), a provisional allocation of US$23 million will be directed to address REDD+ and green growth in the Heart of Borneo. The program has been jointly designed by the Government of Indonesia, ADB and WWF and is aligned to the national action plan for the Heart of Borneo in Indonesia. The program will specifically support spatial planning, forest land use and poverty alleviation programs in forest-dependent communities across two districts in West Kalimantan Province, as well as broader REDD+ readiness activities that contribute to the provincial- and national-level plans in the country. The FIP program is expected to make a tangible contribution to the priorities outlined in the report *Heart of Borneo: Investing in Nature for a Green Economy*.

Private sector finance

Although the role of the private sector in financing REDD+ is currently limited, private sources of REDD+ finance could—and some say must—play an important role in the future. There are a variety of mechanisms through which the private sector could become a significant source of REDD+ funding (*Parker and Cranford, 2012*).

- **Private sector investment in an international carbon markets:** If large greenhouse gas emitter countries commit to strong national emission reductions and also agree that part of those reductions could be in the form of buying carbon offsets in an international carbon market, then tropical developing countries could bring their REDD+ verified emission reductions to that international carbon market and private investors could buy them, either for compliance purpose or to further trade with them. Nothing of this sort has happened as of mid-2013, and therefore, outside the EU, offset carbon markets remain small and forest carbon participation in them is minimal.

- **Private sector investment in national carbon markets in developing countries:** Some of the more advanced developing countries—including Brazil, Peru, Chile and China—are also beginning to develop national (often sectoral) cap-and-trade systems that could create national carbon markets, which could become sources of national private sector finance for REDD+.

- **Private sector investment in voluntary carbon markets and related biodiversity offsets:** Voluntary ecosystem services markets, where private buyers purchase carbon, biodiversity or other ecosystem services on a voluntary basis, remain

limited but may grow in the future, either through increased corporate responsibility or through consumers' demand (voting with your shopping cart). These schemes have the potential to be a source of funding for REDD+ and other conservation programs and are been explored and applied in several countries, but thus far are of very limited size.[11]

- **Green commodities:** Another source of private sector finance for REDD+ could come through the certification of supply chains of key commodities that currently are drivers of deforestation and degradation in many tropical forests. Some examples include the roundtables on responsible soy and palm oil (RSPO and RTRS) and the Forest Stewardship Council (FSC). WWF has been at the forefront of many of these certification schemes through its Markets Transformation Program.[12]

It is important to note that, thus far, certification schemes have been designed to secure the environmental quality of the outcomes but have not aimed to certify their quantity. With the advent of REDD+ there are growing efforts in the latter direction with the Forest Stewardship Council (FSC) motion 16, relating to REDD+, and the dialogue between FSC and Gold Standard (see *motions.fsc. org/motions*).

WWF VIEWPOINT

As of mid-2013, WWF has developed three important position papers on REDD+ finance. The first key paper is the *July 2009 Position Paper on Forests and Climate Change Mitigation*. It highlights the need for multiple sources of finance in a three-phased approach—with a mix of public and private funding dominant in phases 1 and 2, and finance through the demand for offset carbon from compliance markets allowed under strict conditions only once countries reach phase 3.

The second paper is the *February 2011 Position Paper on Crediting in Voluntary Markets in WWF REDD+ Early Actions and Programs*. It highlights the extent to which WWF offices can partner with private sector organizations that want to offset their emissions through WWF projects. The paper explains, *inter alia*, that this is acceptable only for companies that have already made significant efforts to reduce their own emissions and as long as credits derived from these projects are retired.

The latest position paper on REDD+ finance is the *November 2011 Position Paper on REDD+ Finance*. This paper addresses some of the REDD+ financing issues still being discussed at the UNFCCC negotiations, including scale, sources, delivery instruments and the REDD+ international finance architecture.

FURTHER RESOURCES

WWF REDD+ position papers

WWF position papers on REDD+ can be accessed at *wwf.panda.org/what_we_do/footprint/forest_climate2/solutions*, or by doing a search of *www.panda.org* by paper title.

Key external resources

Climate Funds Update (*www.climatefundsupdate.org*) is an excellent resource for tracking both sources and distribution of climate-related finance, including REDD+.

The REDD+ Desk (*www.theredddesk.org*) provides an excellent overview of the status of REDD+ finance in different countries.

Multilateral funds websites

Forest Carbon Partnership Facility (*www.forestcarbonpartnership.org/fcp*). In particular, see specific links for REDD+ countries and recent decisions under FCPF meetings.

Forest Investment Program (*www.climateinvestmentfunds.org/cif/node/5*). Pilot country links display programming progress in each country along with key documents, MDB focal points, etc.

UNREDD (*www.un-redd.org*)

GEF (*www.thegef.org/gef/SFM*)

Bilateral funds websites

Australia's International Forest Carbon initiative *www.climatechange.gov.au/government/initiatives/international-forest-carbon-initiative.aspx*

Germany's International Climate Initiative *www.bmu-klimaschutzinitiative.de*

Japan's Fast Start Finance *www.faststartfinance.org/contributing_country/japan*

Norway's International Climate and Forest Initiative *www.regjeringen.no/en/dep/md/Selected-topics/climate/the-government-of-norways-international-.html?id=548491*

UK's International Climate Fund *www.decc.gov.uk/en/content/cms/tackling/international/icf/icf.aspx*

BIBLIOGRAPHY

BARTON, D. N., A. CHACON, et al. 2012. *From Rio to Rio+: Lessons from 20 years of experience on Environmental Services in Costa Rica*. IIED, London, UK.

BROWN, J., et al. 2011. *Fast-start finance to address climate change: what we know at the mid-point*. ODI, London, UK.

ELIASCH, J. 2008. Climate Change: Financing Global Forests. *The Eliasch Review*. London, UK.

KARSENTY, A. 2012. *Financing options to support REDD+ activities*. CIRAD, EC, Brussels, Belgium.

LIU, C. AND WU, B. 2010. *Grain for Green Programme in China: Policy Making and Implementation*. The University of Nottingham China Policy Institute, Nottingham, UK.

MAY, P.H., GEBARA, M.F., et al. 2012. *The "Ecological" Value Added Tax (ICMS-Ecológico) in Brazil and its effectiveness in State biodiversity conservation: a comparative analysis*. 12th Biennial Conference of the International Society for Ecological Economics, Rio de Janeiro, Brazil.

PARKER, C., BROWN, J., et al. 2009. *The Little Climate Finance Book*. Global Canopy Programme, Oxford, UK.

ENDNOTES

1. Annex II Parties are those that have a financial obligation under the convention.
2. Decision 2/CP.13 paragraph 5
3. Decision 2/CP.15 paragraph 8
4. Decision 2/CP.17 paragraph 65.
5. Decision 2/CP.17 paragraph 72.
6. See United Nations (2013) Section C articles 25 to 40.
7. See www.climatefundsupdate.org.
8. The Amazon Fund can be counted as either a regional fund, as it funds several Amazon countries other than just Brazil, or as a national fund because it is a Brazilian institution and most of the funding goes to the Brazilian portion of the Amazons.
9. See www.un-redd.org/AboutUN-REDDProgramme/tabid/102613/Default.aspx
10. GEF website, 2013.
11. For example, the Japanese government has set up a national voluntary carbon offsets scheme called J-VER that approves forest sink. The trade volume and price in this market support our argument that voluntary carbon markets continue to provide a limited source of revenue for REDD+.
12. See wwf.panda.org/what_we_do/how_we_work/businesses/transforming_markets

WWF GUIDE TO BUILDING REDD+ STRATEGIES

Achieving REDD+

BENEFIT SHARING

DOWNLOAD THIS CHAPTER

© JULIE PUDLOWSKI / WWF

Key Messages

- Benefit sharing systems determine the allocation of often scarce resources to different actors. In distributing these benefits, determining the appropriate balance of efficiency, effectiveness and equity will be a critical element in REDD+ decision making.

- Benefit sharing systems should provide effective incentives for actions and build support and legitimacy for REDD+ mechanisms. Incentives can take a variety of forms targeting various geographical regions or sectors. They can be designed to target states, districts, communities, households or businesses. Furthermore, incentives can be financial or non-financial and can be delivered as upfront programmatic investments or as ex-post payments for performance.

- Broad stakeholder participation and consultation will be important in determining the needs of individual actors for benefit sharing systems. Countries and jurisdictions will need to define priorities that will guide the form benefits will take, how they will be accessed, and when they will be available in order to ensure that incentives are meaningful and accessible for beneficiaries.

INTRODUCTION

In this chapter we refer to benefit sharing as the financial and institutional arrangements governing the distribution of REDD+ funding or revenues to key stakeholders to incentivize their contribution to REDD+ outcomes. REDD+ benefit sharing involves directing incentives to specific actors to motivate them to undertake activities that best contribute to REDD+ programme goals

There are numerous types of benefits that can be employed under REDD+ that will have varying importance and utility to different stakeholder groups. Incentives can be created at various levels (e.g. public sector, private sector, household) and in various geographical regions or sectors. Some incentives to achieve REDD+ may take the form of cash

payments (e.g. to governments, households or communities) while others will be non-monetary, such as support for sustainable livelihoods or small-scale infrastructure, including improved resource management (e.g. investments in new technology and/or extension in forest-friendly farming or forestry), processing, or marketing (e.g. investment in technology, complementary policies to guarantee prices and/or subsidies for sustainable products).

While benefit sharing systems will vary depending on national and subnational needs and contexts, there are several over-arching principles and practices that can inform the design of REDD+ benefit sharing arrangements. Specifically, benefit sharing systems are critical in the design of REDD+ benefit sharing arrangements. These three criteria are:

© EDWARD PARKER

- REDD+ activities should deliver quantifiable emission reductions. The **effectiveness** of benefit sharing mechanisms can be determined by the extent to which they create meaningful incentives to contribute toward this goal.

- With limited funding available for REDD+, targeting activities that deliver the most emissions reductions per unit cost, or "bang for the buck" should be an important consideration. The **efficiency** of a REDD+ benefit sharing mechanism can be measured by the amount of emissions reductions (and other benefits) that are achieved per unit cost.

- REDD+ can generate both costs and benefits to a variety of stakeholders, geographies and activities. The design and implementation of REDD+ should consider the **equitable** distribution of these costs and benefits so that certain stakeholders or regions do not bear a disproportionate amount of the costs nor receive a disproportionate amount of the benefits.

REDD+ also has the potential to deliver both carbon and non-carbon (i.e. social and environmental) benefits (see the *Social and Environmental Safeguards* chapter). Benefit sharing mechanisms can choose to allocate a portion of REDD+ revenues toward non-carbon benefits (above and beyond what is required for the adequate compliance with safeguards).

Within the literature, the equitable distribution of REDD+ benefits (as well as costs) is often considered the primary goal of benefit sharing mechanisms (Angelsen et al., 2009). Moreover, the discussions on benefit sharing mechanisms often further target poor and/or marginalized communities (Peskett et al., 2008, Peskett, 2011). In this chapter, we focus more broadly on the design of REDD+ benefit sharing mechanisms at the national and subnational levels to motivate targeted beneficiaries to contribute to REDD+ outcomes. We also explore various approaches to identify beneficiaries, distinguish beneficiary groups and define priorities for benefit sharing within the context of the 3Es.

INTERNATIONAL POLICY CONTEXT

Benefit sharing is often discussed under the context of REDD+ finance within the international policy negotiations. The most significant and developed of these bodies is the United Nations Framework Convention on Climate Change (UNFCCC), which has been discussing REDD+ finance since 2007 at the 13th Conference of the Parties to UNFCCC (COP 13) in Bali. At the international level, several other multilateral and voluntary institutions, notably the Forest Carbon Partnership Facility (FCPF), UN-REDD and REDD+ Social and Environmental Safeguards (SES), have been defining modalities for distributing the benefits of REDD+. The following outlines the international policy legislation that has been developed to date under the UNFCCC as well as these voluntary and multilateral institutions.

COP 16: Cancun, 2010

In 2010, at COP 16 in Cancun, two of the major defining features of REDD+ for benefit sharing were decided. These are related to scale, in that REDD+ will be implemented at the national (subnational) level, and conditionality, that payments should be linked to measurable results (phase 3), namely (a) reducing emissions from deforestation, (b) reducing emissions from forest degradation, (c) conserving forest carbon stocks, (d) managing forests sustainably and (e) enhancing forest carbon stocks.[1]

REDD+ readiness funds (phases 1 and 2) pay for enabling pay for enabling policies and supportive activities necessary to deliver these results, including capacity building for participants, stakeholder engagement, law enforcement, the costs of creating new institutions and rules, developing MRV systems, etc.[2] It is also broadly agreed that investments in REDD+ should also be directed toward a range of social and environmental benefits, including improvements in land tenure, promoting the livelihoods of indigenous peoples and local communities (IPLCs), and enhancing biodiversity conservation.[3]

COP 17: Durban, 2011

In 2011 at COP 17 in Durban, parties began considering whether results-based REDD+ financing should go beyond carbon to include non-carbon benefits. This discussion is still ongoing with a range of views among parties, from those who would see results defined narrowly as the provision of emissions reductions to those who would prefer a more holistic definition of results that includes the multiple benefits of REDD+.

UN-REDD Programme

The UN-REDD Programme is a major multilateral initiative supporting investments in REDD+ strategy development and capacity building. The UN-REDD Programme has developed the Social and Environmental Principles & Criteria as well as the Benefits and Risks Tool (BeRT) to help countries assess whether they have addressed social and environmental safeguards, including specific criteria related to benefit sharing. Because there do not appear to be any requirements or incentives to use this tool, however, it remains unclear how they will be applied by the UN-REDD Programme pilot countries (UN-REDD, 2012).

Forest Carbon Partnership Facility

The Forest Carbon Partnership Facility (FCPF) Carbon Fund has invited REDD+ countries and stakeholders to provide input on the design of methodological guidance for benefit distribution systems for Carbon Fund participants. According to the draft FCPF Emission Reductions Purchase Agreement (ERPA) Term Sheet, the seller (REDD+ country) must develop a Benefit Sharing Plan that explains how it will share "a significant part of the monetary or other benefits" from the Emissions Reduction (ER) Program with relevant stakeholders. Furthermore, the recommendations of the Working Group on the Methodological and Pricing Approach also provided initial guidance on benefit sharing, including that the "ER Program uses clear, effective and transparent benefit-sharing mechanisms with broad community support and support from other relevant stakeholders" and that "the design of the benefit-sharing mechanisms should respect customary rights to land and territories and reflect broad community support, so that

REDD+ incentives are used in an effective and equitable manner" (FCPF 2012, Recommendations of the Working Group on the Methodological and Pricing Approach for the Carbon Fund of the FCPF).

Voluntary standards

Several voluntary standards, namely, the REDD+ Social and Environmental Standards (REDD+ SES); Climate, Community and Biodiversity (CCB); and Plan Vivo have developed guidance for REDD+ benefit sharing (see *Social and Environmental Safeguards* chapter). The REDD+ SES has developed principles and criteria for the equitable sharing of benefits as well as land tenure and livelihoods. CCB certification requires that "benefits of the REDD+ programme are shared equitably among all stakeholders and rights holders" (see *www.redd-standards.org*)

NATIONAL AND SUBNATIONAL OPTIONS

Given the wide variety in national and local contexts, it is unrealistic to expect that a single model for benefit sharing mechanisms can be developed. A number of studies have explored design features of REDD+ benefit sharing arrangements, guided by the principles of the 3Es (IUCN, 2009, Myers Madeira et al., 2012, Davis et al., 2012, PROFOR, 2011, Costenbader, 2011). A recent study by the Nature Conservancy (Myers Madeira et al., 2012) identifies several key design parameters for benefit sharing that are likely to be relevant to many REDD+ countries:

- Targeting benefits of the programme and the rationale for benefit sharing as well as clarification of the beneficiaries and conditions under which they can receive benefits;

- Tailoring benefits to create incentives (or compensation) sufficient to motivate desired behaviours from each actor, including decisions about the appropriate form, scale and timing of benefits;

- Timing and frequency of benefits, including whether benefits are delivered based on either actual results or forecasted results, which will depend on the individual costs and risks faced by stakeholders;

- Delivering benefits, including the governance and financial structures that are needed as well as the types of rules and institutions that will underpin them.

The remainder of this chapter will explore these elements in more depth and present design options for each. The topic of benefit sharing is closely linked to other topics such as safeguards, land tenure, non-carbon benefits and grievance mechanisms, including how to ensure transparency and disclosure. These topics are addressed in separate chapters of this publication.

Targeting benefits

For REDD+ to adequately address the drivers of deforestation and forest degradation and to enhance carbon stocks (i.e. effective-ness), REDD+ programmes will need to identify and target the most relevant stake-holders at any given level. These include a potentially huge and diverse population of stakeholders ranging from IPLCs to large-scale agricultural producers.

Targeting REDD+ benefits should take into account a range of factors such as geographic variation of deforestation, local drivers of deforestation, tenure, the difference in the cost of forest protection and potential co-benefits that can be achieved in imple-menting REDD+ in different regions of the country (e.g. poverty alleviation and biodiver-sity conservation). Targeting will therefore require strong institutional capacity to collect and manage data on key characteristics related to the potential beneficiaries and activities that should be targeted.

Each country will need to define priorities for benefit sharing under REDD+, because resources are unlikely to be sufficient to cover the full costs associated with changing land-use behaviour. Defining priorities translates into political decisions that will vary country by country. It may be more effective and efficient to deliver benefits in more accessible areas where pressures for deforestation and forest degradation are greatest. Yet an approach based exclusively on effectiveness and efficiency ignores equity considerations. In many countries, popula-tion groups in relatively isolated areas have played important historic roles in conserving vast tracks of forests.

WEBINAR VIDEO: COMMUNITY MANAGEMENT PLANNING AND REDD+

LEARNING SESSION 2

▶

In practical terms, it will be necessary to follow a phased approach, in which certain geographic areas serve as pilots for delivering benefits until they can be provided on a more extensive basis. Given the participatory approach recommended for defining REDD+ policies and programmes, it will be important to define transparent criteria for prioritizing certain geographic areas and/or groups over others, and governments will need to establish firm timetables and targets for expanding benefits to ensure that they eventually reach a large proportion of potential beneficiaries.

Tailoring benefits

There are a variety of ways in which benefits can be tailored under REDD+ to incentivize different stakeholders to change land-use practices over the long term. These can be broadly classified as monetary and non-monetary benefits.

Monetary benefits

Cash payments are relatively simple to disburse and can therefore enhance the efficiency of REDD+ programmes. Direct monetary incentives, however, have been shown to carry adverse risks, such as elite capture, corruption and "crowding out" the intrinsic motivation to do the right thing for society (Blom et al., 2010, Cranford and Mourato, 2011, Myers Madeira et al., 2012). There is also the risk of small-scale cash payments being spent on items that do not contribute to improved welfare or livelihoods. Under certain conditions, however, cash payments can be effective (WWF, forthcoming) such as when:

- Resource dependency is low;
- There is access to cash-based markets;
- There is sufficient capacity/skills for numeracy, saving, investment and entrepreneurship;
- Ownership over land/trees/carbon is clear;
- Long-term funding is guaranteed.

Non-monetary benefits

REDD+ programmes can use non-monetary benefits to motivate or enable changes in behaviour and to provide concrete benefits to stakeholders on the ground. These benefits include livelihood and income opportunities, improved infrastructure and health and educational conditions, tenure and food security, reduced vulnerability to climate change, and empowering individuals and communities to participate in decisions affecting local land use and development. Non-monetary benefits can be transforma-tional to local economies by providing alternatives to business-as-usual land uses, thus contributing to long-term development.

They can also be important in establishing the necessary institutional environment for direct monetary payments (Cranford and Mourato, 2011). Care needs to be taken, however, when designing non-monetary benefits to ensure that they are consistent with the conservation objectives being sought through the REDD+ programme; certain livelihood activities could place additional deforestation pressure on the very forests that we are seeking to protect through REDD+.

Non-monetary benefits are likely most appropriate where (WWF, forthcoming):

- Strong and long-term demand exists for sustainable products/services;
- Capacities for saving and investing cash are lacking;
- There is a strong link between the livelihood activity and conservation;
- Markets for products/services are accessible;
- Strong and long-term demand exists for sustainable products/services;
- New sustainable land uses can compete economically with existing uses.

WEBINAR VIDEO: PAYMENT FOR ECOSYSTEM SERVICES AND REDD+

LEARNING SESSION 9

▶

TARGETING PAYMENTS IN REDD+ PROGRAMME DESIGN

Socio Bosque, Ecuador (sociobosque.ambiente.gob.ec)
Ecuador's *Socio Bosque* is a government-led programme that was launched in 2008 with the dual goals of tackling deforestation and addressing poverty. The program uses two payment schemes that are directed at either families or communities. Spatial targeting of participants is done through a ranking of three criteria: (1) deforestation threat, (2) importance of ecosystem services (e.g. carbon storage, water cycle regulation, biodiversity habitat) and (3) level of poverty. Both payment schemes are based on voluntary conservation agreements lasting 20 years (after which point they are renewable), which are monitored for compliance. Payments are made per hectare on an annual basis to families or communities that have upheld the terms of this agreement, including not converting land, or burning or logging trees.

Payments are adjusted progressively downward according to property size to make the scheme more equitable to small-scale, poorer landholders: properties of 50 hectares receive a payment of US$30 per hectare, the next 50 hectares receive US$20 per hectare, with payments continuing to decline as property sizes increase. To ensure environmental effectiveness, participants are also required to submit investment plans that are monitored alongside conservation agreements. Two years after its launch in late 2008, the programme had reached 60,000 beneficiaries (de Koning et al., 2011).

Fund for Nature Conservation, Mexico (fmcn.org)
Mexico's Fund for Nature Conservation (FMCN) comprises multiple subfunds that focus on different thematic and geographic priorities. FMCN consulted with 400 representatives from 249 key conservation and development organizations in its first year of operation to develop its priorities. FMCN sets specific biodiversity conservation priorities related to national environmental priorities (and in compliance with national programmes) and solicits proposals for projects that target those specific priorities. These strategic priorities are revised annually by FMCN before soliciting a new round of proposals (adapted from Davis and Goers Williams, 2012).

Payments for Environmental Services, Costa Rica
Costa Rica's Payments for Environmental Services (PES) programme uses a simple geographic prioritization process to target benefits. PES is designed to recognize and reward forest owners and users in Costa Rica for providing environmental services, including greenhouse gas mitigation and biodiversity conservation. The implementing agency, Fondo Nacional de Financiamiento Forestal (FONAFIFO), prioritizes counties where there is a social development index lower than 35 per cent and where biodiversity conservation hotspots have been identified. Applicants within these areas are then prioritized for enrolment (Myers Madeira et al., 2012).

Monetary and non-monetary forms of benefit sharing can be complementary, and REDD+ benefit-sharing schemes will likely combine them. For example, Bolsa Floresta is one of the largest Payment for Environmental Services (PES) programmes, reaching more than seven thousand families in 15 state conservation units covering over 10 million hectares in the Brazilian state of Amazonas. Launched in 2007, the programme was designed to improve the quality of life of traditional populations, promote the maintenance of environmental services and reduce deforestation. Participation in the programme is voluntary through a contract committing to zero deforestation in areas of mature forest. The programme has four components:

- One component involves a monthly cash transfer of US$24 to female heads of households.[4]
- Two other components provide indirect social and economic investments (totalling approximately US$173,000 per conservation unit per year) considered priorities by the local communities.
- The final component invests in strengthening local organizations so that they can eventually administer the financing for the previous components (totalling approximately US$16,000 per conservation unit per year).[5]

Tailoring benefits is fundamentally linked to the context in which benefits are being distributed. It is essential that practitioners take sufficient time to understand contextual issues (e.g. social, cultural, institutional, ecological) using thorough and participatory consultations. A good starting point for practitioners is to identify existing or potential barriers to sustainable resource and land use,

which will have important implications for the long-term viability of benefit sharing mechanisms. These barriers may include lack of institutional capacity, conflicting cultural values, over-dependency on unsustainable resource use, poor governance and unclear land-use rights (see *Addressing Drivers of Deforestation and Forest Degradation* chapter).

Incentives for REDD+ should also be tailored according to the costs incurred by different stakeholders as well as how stakeholders perceive risk. Ideally, benefits should at a minimum be commensurate to the different costs stakeholders incur during the implementation of REDD+, but given the expected scale of REDD+ payments, this may be challenging in reality. For example, in Costa Rica's PES programme, FONAFIFO uses different standardized contracts to incorporate the different costs associated with different REDD+ related activities. In Brazil, the opportunity costs are reflected in different criteria used by various states to distribute additional tax revenues to municipalities. These criteria frequently include the costs of different conservation activities to the municipality in terms of foregone revenues from development (Pagiola, 2008).

To ensure effectiveness, REDD+ must also align incentives across different scales. In the context of a national REDD+ programme, specific subnational projects may also be able to effectively target benefits to multiple levels by capitalizing on strong local knowledge and relationships. An example of this is provided by the Oddar Meanchey REDD+ pilot in Cambodia, which has tailored incentives to match the interests and roles of stakeholders at various levels, from local forest users to

CASE STUDY

ACRE STATE'S SYSTEM OF INCENTIVES FOR ENVIRONMENTAL SERVICES

Context

Approved in 2010, the Brazilian state of Acre's System of Incentives for Environmental Services (SISA) law is seen as one of the first comprehensive REDD+ laws to cover an entire state. The range of the law's incentive schemes is still under development, but the aim is to distribute benefits among all major segments of the rural population, including small-scale producers, extractivists (harvesters of non-timber forest products), ribeirinhos (traditional riverine communities), indigenous peoples and large-scale producers. This includes a combination of upfront investments in sustainable farming as well as a range of cash and non-cash benefits that are conditional on performance against the management plan.

Expected changes

Acre's SISA law aims to jointly achieve poverty alleviation and environmental conservation through the creation of a legal foundation for valuing a range of environmental services and providing positive incentives to sustainably manage these.

Achievements

Through a nine-year voluntary property certification scheme, small-scale producers agree to maintain their forest estates in return for technical and financial support.

To enter into the scheme, landholders must adopt a management plan that provides the basis for land-use planning. Plans are then monitored for compliance through a combination of satellite and on-the-ground monitoring. The support includes:

- Technical assistance to improve soil fertility as well as training, tools and advice on making efficient use of already deforested land;
- Seeds and seedlings to grow fruit trees, subsistence crops, valuable timber species and "green manure" plants that enrich the soil as they grow and are cut as mulch;
- Small livestock animals such as chickens and sheep to provide food;
- Transport to help farmers get their surplus produce to market;
- An annual cash reward of 500–600 Brazilian reales (approximately US$250–300) in recognition of their part in tackling deforestation

It is still too soon to tell how effective this model is, but preliminary satellite monitoring reveals that families have largely upheld their commitment to not deforest or use fire, and the scheme has been credited with helping reduce the incidence of forest fires during the 2010 drought.

Challenges

- The multiple stakeholder engagement process is time consuming and can take longer than anticipated.
- Monitoring the effectiveness of the scheme is difficult, as it requires monitoring on both a landscape and a property scale.

Lessons learned

Multiple stakeholder engagement leads to more diverse perspectives. While under consideration, the proposal was made public through the state government portal and was sent for review to hundreds of people, including indigenous and rural producers, the representatives of more than 72 domestic and international organizations, and 174 individuals, including 30 indigenous leaders, 50 farmers and 85 technical organizations (EDF, no date). Because diverse stakeholders were a part of the planning process, the final law reflected a more diverse perspective and could more adeptly meet the needs of each of the players.

© JUVENAL PEREIRA / WWF-BRAZIL

TABLE 1: ODDAR MEANCHEY REDD+ PROJECT (ADAPTED FROM MYERS MADEIRA ET AL., 2012)

STAKEHOLDER	RELEVANCE	PROJECT BENEFITS/INCENTIVES
Individuals	Individual members of communities both have land claims and may contribute to deforestation, making them important stakeholders in REDD+.	The project incentivizes individuals by providing employment, bookkeeping and project management training, and other opportunities to generate wealth.
Community groups (e.g. community forest user groups)	Community forest user groups not only have valid land rights but also play a key role in its management.	Benefits include enhanced land tenure security, improved market access and participation in a federation of user groups.
Subnational government agencies (e.g. the Forest Administration [FA])	The FA is both the primary enforcer of forest law and a key partner in implementing aspects of the REDD+ programme.	Benefits include a share of eventual profits from emissions reductions sold on the voluntary market that will support the FA's reforestation and afforestation activities.
National government agencies	The project, as well as the overall evolution of a national REDD+ strategy, depends on the support and involvement of the Royal Government of Cambodia.	The main incentive is a share of eventual profits, similar to the FA share, which would help fund a national-level community forest programme and an expanded national REDD+ program.

the national government agencies (Myers Madeira et al., 2012). Examples of the tailored incentive packages that target different stakeholders are presented in *Table 1*.

Timing and frequency

The timing and frequency of benefits distribution depend on the different costs and risks stakeholders face as well as on the need to incentivize action. Benefits can be provided either up front or upon demonstrated performance, for instance, reduced deforestation or increased forest protection.

Upfront payments

Upfront payments, or payments based on anticipated results, can help facilitate early buy-in from stakeholders and establish enabling conditions needed for a behavioural change. Providing benefits at the beginning of a REDD+ programme can also help address some of the risks and costs faced by poorer and more marginalized stakeholders by providing upfront cash in the face of uncertain future return and security against land claims or land disputes that jeopardize stakeholders' ability to successfully change their behaviour. Because upfront benefits are delivered before performance is guaranteed, the overall pool of incentives tied to performance might become diluted. This presents a risk for financial supporters (e.g. donors, the central government, private investors).

Demonstrated performance payments

While upfront payments are often necessary to cover start-up costs and mitigate risks, especially for vulnerable stakeholder groups, linking payments to performance has been shown to be important to assure behavioural change in conservation programmes (*Kelley, et al., 2012*). Pay-for-performance mechanisms can be implemented at different levels ranging from programmes focused on individual land users to programmes focused on subnational governments. Pay-for-performance programmes focused on individuals offer more precise targeting and more customized tailoring of incentives (*Madeira, et al., 2012*). Linking benefits to performance at this level, however, also imposes higher transaction costs (related to monitoring, enrolling and disbursing for individual grants and contracts), which may limit the scope of these programmes. Programmes that evaluate performance at higher levels (e.g. a subnational government) generally have lower transaction costs, but they require that the agencies supported, who have only indirect control over the desired behavioural change, invest in a tailored set of actions that motivate the stakeholders whose behaviour actually generates performance changes. For example, Brazil's Ecological Tax programme links benefits to performance at the level of individual municipalities, rewarding municipalities for conservation activities. Based on a municipality's ecological rating, the municipality earns financial benefits that flow to public institutions. To continue receiving increased tax revenues under the programme, municipalities must then create incentives for individual landholders, who have direct control over the forest.

To maximize the advantages of both payment approaches, benefit distribution is often two-stage, with some benefits delivered upfront and some delivered based on demonstrated performance. Costa Rica's PES and Mexico's FMCN provide examples of national and project-level approaches that have adopted a two-stage benefit distribution system. Costa Rica's PES delivers a fixed portion of a contract's worth up front depending on the management practice undertaken (20 per cent for forest conservation and 50 per cent for reforestation) (Pagiola, 2008). Subsequent annual payments are made after compliance has been verified by licensed foresters. Mexico's FMCN delivers some funds to grantees up front to support initial activities but delivers subsequent funds partly on the basis of how well grantees perform against established indicators (Porras, I et al, 2012).

Delivering REDD+ finance

The financial arrangements of REDD+ will be shaped by host countries' existing institutional and legal frameworks (e.g. forest tenure regimes), the scope of the programme (RED, REDD, REDD+), and available financing. Benefit sharing mechanisms will therefore encompass a variety of governance structures and instruments needed to both receive and distribute REDD+ finance. Institutional mapping will be necessary in order to develop an understanding of existing systems governing the vertical distribution of REDD+ finance and horizontal distribution of REDD+ benefits and to identify institutional gaps. USAID's Institutional Assessment Tool for Benefit Sharing under REDD+ is designed to provide guidance on navigating the range of potential institutional arrangements for REDD+ benefit sharing and to assess gaps

TABLE 2: KEY FUNCTIONS OF BENEFIT SHARING MECHANISMS (DAVIS AND GOERS WILLIAMS, 2012)

Oversight and strategic decision-making	» Developing rules and guidelines to govern the mechanism » Supervising the mechanism to ensure 3Es » Providing guidance on high-level policy and strategic decisions » Reviewing reports on the mechanism's performance » Providing advice when substantive changes are needed
Management and administration	» Managing REDD+ funds » Ensuring compliance with rules and guidelines » Receiving and verifying claims from potential beneficiaries » Delivering benefits » Preparing reports on operations and performance
Support and extension	» Raising awareness about the programme » Building capacity of potential beneficiaries » Providing technical support to facilitate participation of beneficiaries
Monitoring and reporting	» Monitoring the mechanism with respect to key performance criteria » Preparing regular reports on performance » Identifying and reporting instances of non-compliance or corruption
Conflict resolution	» Resolving conflicts between beneficiaries » Addressing grievances aired by beneficiaries concerning the mechanism

using a common set of principles and criteria that reflect desirable attributes for any REDD+ benefit sharing mechanisms (Davis and Goers Williams, 2012). Key functions of benefit sharing institutions are shown in *Table 2*.

Benefit sharing systems should build off of existing institutions. There are several examples of these types of arrangements from PES, community forestry, community development programmes and social agreements or contracts related to concessions. For example, in Indonesia the National Program for Community Empowerment (PNPM) channels grants between US$120,000 and US$360,000 from the national budget to the subdistrict level on an annual basis (*Davis, et al., 2011*). Villages within a subdistrict compete for funds by engaging in a participatory planning and decision-making process to demonstrate local development needs and priorities. The village government manages awarded funds with a strong emphasis on transparency and broad-based participation of community members, including participation of women and poor households. Most of these grants have been invested in local infrastructure and service provision. Since 2008, a pilot version of the PNPM has been implemented, focusing on investments in sustainable natural resource management, conservation and renewable energy (World Bank, 2011).

FOCUS

FOREST CARBON TRUST FUND, NEPAL

Adapted from Davis, et al., 2011

The Forest Carbon Trust Fund (FCTF) is a four-year initiative funded by the Norwegian government that provides support to a group of national and regional NGOs to pilot an institutional mechanism for benefit sharing of REDD+ funds from community forest and watershed management initiatives. The project builds upon Nepal's well-established community forestry model and engages with 105 community forest user groups (CFUGs) in the watersheds of Chanarwati (Dolakha district), Ludhikhola (Gorkha district) and Kayerkhola (Chitwan district). The Forest Act of 1993 decentralized rights and management of national forests to empowered district forest offices that transferred those rights and responsibilities to registered CFUGs. In the three watershed areas, operational CFUGs are clustered together to form "REDD+ Watershed Networks".

Payments made to CFUGs are weighted according to a number of factors: 40 per cent of the payment is based on verified reductions in deforestation (against a historical baseline) as well as increases in carbon stocks; 25 per cent of the payment is based on the presence of indigenous peoples and low-caste households (dalits) as registered members of the user group; 15 per cent of the payment is based on the presence of women members in the user group; and 20 per cent of the payment is based on recorded poverty levels in the participating community. The first pilot payment was made to all 105 user groups in 2012, totalling around US$96,000.

CFUGs may use seed grants to fund community forest management activities, livelihood improvement activities, or group-strengthening activities such as capacity-building, awareness-raising and carbon monitoring. They may also decide, through consensus, to give a portion of the seed grant money to the poorest households in their community. Although still in the process of establishing a functional MRV system, the project is developing local capacity to undertake monitoring of carbon stocks, with representation from all major stakeholders. This committee will be responsible for monitoring and reporting on carbon data, payment distribution and payment utilization with respect to the FCTF operational guidelines. An independent verification agency, consisting of a multidisciplinary team of technical experts, will analyze and verify these results. This demonstration project is perhaps one of the most advanced in the world in terms of generating lessons and experiences relating to the governance and management of REDD+ benefit sharing mechanisms. In particular, the project has proposed concrete governance arrangements to ensure that payment distribution is managed in a transparent, accountable and inclusive manner:

■ The multi-tiered and multi-stakeholder design of the FCTF institutional structure promotes checks and balances in decision-making.

■ The third-party verification and audit committee promotes accountability against project performance objectives and standards.

■ The FCTF operational guidelines, including the detailed roles and responsibilities of each institution, are clear and were developed through a participatory process.

Monitoring whether or not REDD+ finance is effective at delivering REDD+ outcomes is an essential component of any benefit distribution system. Key principles of monitoring performance include:

- Performance-linkage
- Additionality
- Equity
- Transparency

Adequately addressing each of these principles implies four key functions of monitoring REDD+ finance: (a) monitoring of changes in emissions; (b) monitoring of REDD+ interventions and actions; (c) monitoring of revenue disbursement; and (d) monitoring of financial transactions (UNREDD, 2010). For more information about monitoring REDD+ performance see the *MMRV chapter*.

WWF VIEWPOINT

WWF is working with governments in forest countries such as Nepal and the Democratic Republic of Congo to design and pilot benefit sharing arrangements. WWF's REDD+ principles and policies, combined with experiences on the ground, offer guidance on the design of benefit sharing mechanisms.

- WWF favours national-level approaches to REDD+, with subnational-level as an interim step. Long-term success for REDD+ programmes depends in large part on government ownership or the effective exercise of the government's authority over policies and activities. Additionally, ownership at the national level will help

determine how integrated REDD+ is with a country's overall development strategies and environmental initiatives.

- WWF believes that all relevant stakeholders and rights holders should be able to participate fully and effectively in a REDD+ programme's design and implementation. This implies that stakeholders and rights holders have timely access to appropriate and accurate information to enable good programme governance.

- WWF believes that REDD+ finance should support a transition to low carbon development economies and must therefore taper off over time. REDD+ is ultimately a bridge strategy, providing investment to catalyze a longer-term transition in how forest resources are used. To be successful, a REDD+ programme must be part of an overall package of measures, reinforcing and reinforced by a country's overarching environmental and development strategies.

- WWF believes that REDD+ should contribute to sustainable livelihoods and poverty alleviation for forest-dependent peoples.

FURTHER RESOURCES

WWF. (2013, forthcoming). "REDD+ Community Benefit Sharing."

WWF. (2012). "Sharing benefits from REDD+ in Nepal: Issues, Options and Proposed Principles for Benefit Sharing Mechanism."

UN-REDD. (2012). Benefits and Risks Tool, at *www.un-redd.org/multiple_benefits/ sepc_bert/tabid/991/default.aspx*

BIBLIOGRAPHY

ANGELSEN, A., BROCKHAUS, M., KANNINEN, M., SILLS, E., SUNDERLIN, W. and S. WERTZ-KANOUNNIKOFF. 2009. Realising REDD+: *National strategy and policy options*. CIFOR, Bogor, Indonesia.

BLOM, B., SUNDERLAND, T. and D. MURDIYARSO. 2010. Getting REDD to Work Locally: Lessons Learned from Integrated Conservation and Development Projects. *Environmental Science and Policy*, 13, 164-172.

COSTENBADER, J. 2011. REDD+ Benefit Sharing: A Comparative Assessment of Three National Policy Approaches. UN-REDD, Geneva, Switzerland.

CRANFORD, M. and MOURATO, S. 2011. Community conservation and a two-stage approach to payments for ecosystem services. *Ecological Economics*, 71, 89-98.

DAVIS, C. and GOERS WILLIAMS, L. 2012. *Institutional Assessment Tool for Benefit Sharing Under REDD+*. In: USAID (ed.) *Property Rights and Resource Governance Project*. USAID, Washington, DC, USA.

DAVIS, C., NOGUERON, R., VEIT, P. and A.G. JAVELLE. 2012. *Analysis of Institutional Mechanisms for Sharing REDD+ Benefits*. In: USAID (ed.) *Property Rights and Resource Governance Project*. USAID, Washington, DC, USA.

DE KONING, F., AGUINAGA, M., BRAVO, M., et al. 2011. Bridging the Gap between Forest Conservation and Poverty Alleviation: The Ecuadorian Socio Bosque Program. *Environmental Science and Policy*, 14, 533.

ENVIRONMENTAL DEFENSE FUND. No Date. *Ready for REDD: Acre's State Programs for Sustainable Development and Deforestation Control*. Environmental Defense Fund, Washington, DC, USA.

FOREST CARBON PARTNERSHIP FACILITY. 2012. Recommendations of the Working Group on the Methodological and Pricing Approach for the Carbon Fund of the FCPF. Forest Carbon Partnership Facility, Washington, DC, USA.

IUCN. 2009. *REDD-plus and Benefit sharing: Experiences in forest conservation and other resource management sectors*. IUCN, Geneva, Switzerland.

MYERS MADEIRA, E., KELLEY, L., BLOCKHUS, J., et al. 2012. *Sharing the Benefits of REDD+: Lessons from the field*. The Nature Conservancy, Washington, DC, USA.

PAGIOLA, S. 2008. Payments for environmental services in Costa Rica. *Ecological Economics*, 65, 712-724.

PESKETT, L. 2011. *Benefit sharing in REDD+: exploring the implications for poor and vulnerable people*. ODI, London, UK.

PESKETT, L., HUBERMAN, D., BOWEN-JONES, E., et al. 2008. *Making REDD Work for the Poor. A Poverty Environment Partnership (PEP) Report*. ODI, London, UK.

PORRAS, I., et al. 2012. *De Rio a Rio+ Lecciones de 20 años de experiencias en servicios ambientales en Costa Rica*. IIED, London, UK.

PROFOR. 2011. *Making Benefit Sharing Arrangements Work for Forest-Dependent Communities—Insights for REDD Initiatives*. PROFOR, Washington, DC, USA.

UN-REDD Programme. 2010. *Design of a REDD-Compliant Benefit Distribution System for Viet Nam*. UN-REDD PROGRAMME, Geneva, Switzerland.

WORLD BANK. 2012. *Indonesia Third National Program for Community Empowerment In Rural Areas*. World Bank, Washington, DC, USA.

END NOTES

1. See Section C of Decision 1/CP.16 paragraphs 70, 71, 73, 76 and 77.
2. ibid paragraphs 73 and 76.
3. ibid paragraph 72.
4. Based on the December 16, 2012, exchange rate of R$2.09/US$.
5. fas-amazonas.org

ADDITIONAL RESOURCES

WWF GUIDE TO BUILDING REDD+ STRATEGIES

Additional Resources
WWF REDD+ RESOURCES

AS OF OCTOBER 2013

© JENNIFER FERGUSON-MITCHELL / WWF

WWF POLICY POSITIONS & BRIEFS

Official Positions
WWF Position: REDD+ forest carbon credits from voluntary offsets, 2011
bit.ly/12ffRiQ

WWF Position: WWF position on forests and climate change mitigation, 2009
bit.ly/117VRuX

Policy Briefs
WWF REDD+ Expectations for UNFCCC, Bonn Meeting, 2013
bit.ly/1d2TXCJ

WWF Expectations for UNFCCC, Bonn Meeting, 2013
bit.ly/18OIU63

WWF REDD+ Expectations for UNFCCC-COP18, 2012
bit.ly/10ExTVc

WWF REDD+ MRV External Brief for UNFCCC COP18, 2012
bit.ly/19jelw8

WWF REDD+ Reference Level External Brief for UNFCCC COP18, 2012
bit.ly/16mJJLA

WWF REDD+ Finance External Brief for UNFCCC COP18, 2012
bit.ly/18wuwon

WWF Expectations for the UNFCCC Bangkok Meeting, 2012
bit.ly/12LF1jS

WWF Expectations for UNFCCC, Bonn Meeting, 2012
bit.ly/1532648

UNFCCC Submissions
WWF Submission to AWG LCA: Finance, 2012
bit.ly/12LF7YS

WWF Submission to SBSTA: Views on robust, transparent national forest monitoring systems for REDD+, 2012
bit.ly/17mikcP

Climate Action Network (including WWF's input): CAN-International submission on how to address drivers of deforestation and forest degradation, 2012
bit.ly/18YG2J4

WWF Submission to SBSTA: Methodological guidance for activities relating to REDD+ (safeguards & RL/REL), 2011
bit.ly/117WnJF

More information on WWF's REDD+ related UNFCCC efforts:
bit.ly/10EyCpf

WWF REDD+ RELATED PUBLICATIONS & DOCUMENTS

MRV
Assessing risks to forest cover and carbon stocks: A review of tools and approaches to compare business-as-usual to REDD+ scenarios, 2013
bit.ly/138zC4E

From project based to nested REDD+: Monitoring, reporting and verifying (MRV) standards for carbon accounting, 2012
bit.ly/117WvbP

Reference Levels and Payments for REDD+: Lessons from the recent Guyana-Norway Agreement, 2012
bit.ly/12fgQzz

Developing the tools to make REDD+ work, 2011
bit.ly/10xCGem

Indigenous Peoples / Human Rights
Community Tenure and REDD+, 2012
bit.ly/13fywXl

Capacity Building Materials on REDD+ for Indigenous Peoples and Local Communities, 2011
bit.ly/15fj1Qn

Free, Prior, Informed Consent & REDD+: Guidelines and Resources, 2011
bit.ly/16LKhnM

Factsheet: Indigenous People, Local Communities and REDD+, 2011
bit.ly/115AYh1

Project Standards
Forest Carbon Standards: A WWF Assessment Guide, 2010
bit.ly/12LFL8G

Finance
Unlocking Forest Bonds, 2011
bit.ly/16sZ0HC

WWF National/Regional REDD+
REDD+ Country Profiles, 2013
bit.ly/1dqN5Lp

Bolivia—*bit.ly/12mlAAN*
Cameroon—*bit.ly/172hy2f*
Democratic Republic of Congo—*bit.ly/18OKrZI*
Peru—*bit.ly/1cjRy4H*
Vietnam—*bit.ly/1d2VuJd*

REDD+ for People and Nature: A case study of an integrated approach to REDD+ readiness in Mai-Ndombe, DRC, 2012 (also available in Spanish)
bit.ly/1auB8mp

REDD+ Developments in the Guianas, 2012
bit.ly/18wvgdp

Factsheet: REDD+ in Laos Xe Pian, 2012
bit.ly/11uSZdz

Développement d'un Programme REDD+ intégré sur le territoire de Bolobo, RDC—Réflexions sur la structure organisationnelle et financière, 2012
bit.ly/18wvlNZ

Promoviendo REDD+ para el desarrollo sostenible de Madre de Dios, 2012
bit.ly/16mKDYh

Profile: Maintaining the Green Heart of Africa's forests for people and the planet, 2011
bit.ly/13OyMum

Profile: Maintaining the Heart of Borneo's forests for people and the planet, 2011
bit.ly/142AnO2

Profile: Maintaining the Amazon's forests for people and the planet, 2011
bit.ly/12LG9Ef

Lessons from REDD+ Preparedness in Colombia, Guyana, Indonesia and Peru (linking WWF FCI past and new programs), 2010
bit.ly/11mR1pA

Multiplier and Distributive Effects of large-Scale REDD+ Policies in Mexico, 2010
bit.ly/18qkAzr

Other
Supporting materials from Building REDD+ Reference Levels: International workshop co-hosted by WWF and the World Bank's Forest Carbon Partnership Facility, 2013
bit.ly/11bhMwX

Supporting materials from Terrestrial Carbon Accounting Certificate program, developed in partnerhship with with Tropical Forest Group, UC San Diego—Sustainability Solutions Institute, and WWF, 2013
bit.ly/18HZDNx

Living Forest Report, Chapter 3—Forest & Climate & ZNDD 2020, 2012
bit.ly/eHux1W

REDD+ Five Guiding Principles
bit.ly/18wvEby

More WWF REDD+ related publications available here:
bit.ly/16mKTGX

REDD+ LEARNING TOOLS

REDD+ Community: A free, open online knowledge sharing and community platform for REDD+ practitioners around the world
reddcommunity.org

REDD+ Learning Sessions: An archive of free webinar presentations given monthly by REDD+ experts on key issues
bit.ly/13WO8AY

REDD+ Inspiring Practices: Inspiring Practices capture the valuable knowledge and experiences from REDD+ efforts that can help improve, replicate and scale up REDD+ work around the globe
reddcommunity.org/inspiring-practices

REDD+ Inspiring Practice: Developing an Emissions Reduction Programme Idea Note in the Democratic Republic of Congo
bit.ly/1bvTIgf

REDD+ Inspiring Practice: Development of the Amazonian Indigenous REDD+ Proposal (also available in French/Spanish)
bit.ly/11mRfNj

REDD+ Inspiring Practice: Fostering Participation and Cross-Cultural Dialogue (also available in French/Spanish)
bit.ly/117XjNW

REDD+ Inspiring Practice: Mapping Madre de Dios (also available in French/Spanish)
bit.ly/13fzrqC

From the Tree of Practices to the Forest of knowledge: A guide to identifying, capturing, sharing and communicating REDD+ Inspiring Practices
bit.ly/18wvUaN

REDD+ Learning Video: Engaging forest stewards in REDD+ dialogues (also available in Spanish)
bit.ly/117XsB8

Access all WWF REDD+ learning tools at
bit.ly/11062Of

REDD+ NEWS

REDD+ Resource Digest: a weekly email round-up of REDD+ news and information from around the world representing varying perspectives
conta.cc/Zc1ZSp

Canopy: FCP's quarterly newsletter that provides the latest news and information on WWF's REDD+ related activities
conta.cc/Zc1ZSp

Access archive of all issues of these publications at:
conta.cc/Zc1ZSp

Subscribe to these electronic publications at:
bit.ly/11uUbh4

More REDD+ news and info at
Forest and Climate News:
bit.ly/15fkLZK

VIDEOS

Video: REDD+ in DRC—Local Action, Global Impact
bit.ly/15fkOoy

Video: REDD+ for People and Nature—Mai-Ndombe, DRC
bit.ly/13fzUJk

REDD+ Learning Video: Engaging forest stewards in REDD+ dialogues (also available in Spanish)
bit.ly/117XsB8

Access all WWF REDD+ related videos at
www.youtube.com/wwfforestclimate

REDD+ KNOWLEDGE SHARING AND LEARNING

As REDD+ continues to develop, so does the capacity of REDD+ practitioners. Every day, these experts are exploring new ways to define REDD+ readiness and implementation through their project and program work. They are, in effect, "learning while doing." For this reason, it is crucial that lessons learned about what works and what does not work are captured, shared and used to inform others' REDD+ efforts, whether at the local project level or global policy level. Learning and knowledge sharing also help to minimize redundancies while maximizing the effectiveness of REDD+ practitioners.

This webinar video guides viewers through a number of tools and resources available for REDD+ practitioners seeking to identify, capture and share lessons learned that promote successful REDD+ initiatives.

REDD+ LESSONS LEARNED AND BEST PRACTICES—TOOLS AND GUIDELINES FOR EFFECTIVE KNOWLEDGE SHARING

LEARNING SESSION 10

▶

ADDITIONAL RESOURCES

WWF Forest and Climate website
www.panda.org/forestclimate

Forest and Climate Priorities
bit.ly/142BCww

Forest Climate Activities and Projects
bit.ly/1106qfF

WWF Forest and Climate twitter feed
www.twitter.com/wwfforestcarbon

REDD+ Community twitter feed
www.twitter.com/REDDCommunity

REDD+ EXPERTS

WWF REDD+ teams and experts are working around the world. To learn more about where we work or to get in touch with WWF REDD+ experts, please visit *bit.ly/REDDexperts* or contact us at *forestclimate@wwfus.org*.

REDD+ Community is a virtual community of hundreds of REDD+ practitioners and specialists from diverse organizations around the globe. Learn more at *reddcommunity.org* or contact individuals directly at *reddcommunity.org/members*.

WWF GUIDE TO BUILDING REDD+ STRATEGIES

Additional Resources
REDD+ GLOSSARY

© JENNIFER FERGUSON-MITCHELL / WWF

Adaptation
The adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. Various types of adaptation can be distinguished, including anticipatory, autonomous and planned adaptation.

Afforestation
Direct human-induced conversion of land that has not been forested for a period of at least 50 years to forested land through planting, seeding and/or the human-induced promotion of natural seed sources. See also reforestation and deforestation. For a discussion of the term forest and related terms such as afforestation, reforestation and deforestation.

Aichi Biodiversity Targets
A set of 20 specific and measurable targets agreed at the tenth meeting of the CBD Conference of the Parties, held from 18 to 29 October 2010, in Nagoya, Aichi Prefecture, Japan, as part of the strategic plan towards 2020.

Allometric equations
Allometric equations express the quantitative relationship between the dimensions of a tree and its biomass. They are used to estimate the biomass of trees based on easy measures such as tree height or diameter at breast height (dbh).

Anthropogenic
Resulting from or produced by human beings.

Arable land
Land that can be cultivated to grow crops.

Atmosphere
The gaseous envelope surrounding the Earth. The dry atmosphere consists almost entirely of nitrogen and oxygen, together with trace gases including carbon dioxide and ozone.

Baseline/reference
The baseline (or reference) is the state against which change is measured. It might be a 'current baseline', in which case it represents observable, present-day conditions. It might also be a 'future baseline', which is a projected future set of conditions excluding the driving factor of interest. Alternative interpretations of the reference conditions can give rise to multiple baselines.

Benefits and Risks Tool (BeRT)
The Benefit and Risks Tool (BeRT) was developed to apply the Social and Environmental Principles and Criteria (SEPC) in the formulation of national REDD+ programmes and initiatives seeking UN-REDD support, in order to minimise the risks and enhance the multiple benefits from readiness activities. The tool provides a series of questions under each of the 7 Principles and 24 Criteria of the SEPC, to assist UN-REDD Programme staff, national counterparts and other stakeholders to identify the issues to be addressed in UN-REDD supported programme.

Benefit sharing
The distribution of direct and indirect net gains (monetary and nonmonetary benefits) from the implementation of REDD+.

Bioenergy
Energy derived from any form of biomass.

Biodiversity
The total diversity of all organisms and ecosystems at various spatial scales (from genes to entire biomes).

Biomass
The total mass of living organisms in a given area or volume; recently dead plant material is often included as dead biomass. The quantity of biomass is expressed as a dry weight or as the energy, carbon or nitrogen content.

Capacity building
In the context of climate change, capacity building is developing the technical skills and institutional capabilities in developing countries and economies in transition to enable their participation in all aspects of adaptation to, mitigation of, and research on climate change, and in the implementation of the Kyoto Mechanisms, etc.

Cap-and-trade system
A cap-and-trade system involves trading of emission allowances, where the total allowance is strictly limited or 'capped'. Trading occurs when an entity has excess allowances, either through actions taken or improvements made, and sells them to an entity requiring allowances because of growth in emissions or an inability to make cost-effective reductions.

Carbon dioxide
A naturally occurring gas fixed by photosynthesis into organic matter. A by-product of fossil fuel combustion and biomass burning, it is also emitted from land-use changes and other industrial processes. It is the principal anthropogenic greenhouse gas that affects the Earth's radiative balance. It is the reference gas against which other greenhouse gases are measured, thus having a Global Warming Potential of 1.

Carbon market
A market in which carbon emission reductions are traded, usually in the form of carbon credits (verified or certified emission reductions). Carbon markets take the form of (i) a voluntary market (where emission reduction targets are not regulated); or (ii) a compliance market (where carbon credits are traded to meet regulated emission reduction targets). The largest carbon market is currently the EU's Emissions Trading System (ETS).

Carbon sequestration
The process of increasing the carbon content of a reservoir/pool other than the atmosphere.

Carbon stock
The absolute quantity of carbon held within a pool at a specified time.

Certification
The process of verifying that projects meet a voluntary off set standard (such as the Voluntary Carbon Standard or Climate, Community and Biodiversity Standard) through a third-party audit. Certification can also refer to the verification of Clean Development Mechanism (CDM) credits, i.e., Certified Emissions Reductions (CER).

Civil Society

The wide array of non-governmental and not-for-profit organizations that have a presence in public life, expressing the interests and values of their members or others, based on ethical, cultural, political, scientific, religious or philanthropic consider-ations. Civil Society Organizations (CSOs) therefore refer to a wide of array of organiza-tions: community groups, non-governmental organizations (NGOs), labour unions, indigenous groups, charitable organizations, faith-based organizations, professional associations, and foundations.

CDM (Clean Development Mechanism)

The CDM allows greenhouse gas emission reduction projects to take place in countries that have no emission targets under the United Nations Framework Convention on Climate Change (UNFCCC) Kyoto Protocol, yet are signatories.

Climate

Climate in a narrow sense is usually defined as the 'average weather', or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. These quantities are most often surface variables such as temperature, precipitation, and wind. Climate in a wider sense is the state, includ-ing a statistical description, of the climate system. The classical period of time is 30 years, as defined by the World Meteorological Organization (WMO).

Climate Action Network (CAN)

A worldwide network of over 850 Non-Governmental Organizations (NGOs) in over 90 countries working to promote government and individual action to limit human-induced climate change to ecologically sustainable levels.

Climate change

Climate change refers to any change in climate over time, whether due to natural variability or as a result of human activity. This usage differs from that in the United Nations Framework Convention on Climate Change (UNFCCC), which defines 'climate change' as: 'a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods'. See also climate variability.

Climate change scenario

A plausible and often simplified representa-tion of the future climate, based on an internally consistent set of climatological relationships and assumptions of radiative forcing, typically constructed for explicit use as input to climate change impact models. A 'climate change scenario ' is the difference between a climate scenario and the current climate.

Climate, Community, and Biodiversity Alliance (CCBA)

A global partnership of leading companies and non-governmental organizations created in 2003. The CCBA aims to leverage policies and markets to promote the development of forest protection, restoration and agroforestry projects through high quality multiple-benefit land-based carbon projects.

Conference of the Parties (COP, CoP)

The meeting of parties to the United Nations Framework Convention on Climate Change. A decision-making body comprised of the parties that have ratified the UN Framework Convention on Climate Change. The governing body of the UNFCCC, which meets once a year.

Convention on Biological Diversity (CBD)

UN Convention on Biological Diversity. Adopted at the Rio Earth Summit and entered into force in 1994. The Convention establishes three main goals: the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits from the use of genetic resources. Secretariat in Montreal and regular COPs are held.

Deforestation

Natural or anthropogenic process that converts forest land to non-forest. See afforestation and reforestation.

Degradation

Degradation refers to changes within the forest which negatively affect the structure or function of the forest stand or site, and thereby lower the capacity of the forest to supply products or services. In the context of REDD+, degradation will most probably be measured in terms of reduced carbon stocks in forests which remain as forests. No formal definition of degradation has yet been adopted because many forest carbon stocks fluctuate due to natural cyclical causes or management practices.

Desertification

Land degradation in arid, semi-arid, and dry sub-humid areas resulting from various factors, including climatic variations and human activities. Further, the United Nations Convention to Combat Desertification (UNCCD) defines land degradation as a reduction or loss in arid, semi-arid, and dry sub-humid areas of the biological or economic productivity and complexity of rain fed cropland, irrigated cropland, or range, pasture, forest and woodlands resulting from land uses or from a process or combination of processes, including those arising from human activities and habitation patterns, such as: (i) soil erosion caused by wind and/or water; (ii) deterioration of the physical, chemical, and biological or economic properties of soil; and (iii) long-term loss of natural vegetation.

Ecological Value Added Tax
The Ecological Value Added Tax is a federal tax implemented by the Brazilian Treasury. Under the tax, the size and management of protected areas is included in the calculation of the allocation of national VAT to states. This gives states an incentive to gazette and properly manage protected areas.

Ecoregion
A large unit of land or water containing a geographically distinct assemblage of species, natural communities, and environmental conditions.

Ecosystem
The interactive system formed from all living organisms and their abiotic (physical and chemical) environment within a given area. Ecosystems cover a hierarchy of spatial scales and can comprise the entire globe, biomes at the continental scale or small, well-circum-scribed systems such as a small pond.

Ecosystem services
Ecological processes or functions having monetary or non-monetary value to individu-als or society at large. There are (i) supporting services such as productivity or biodiversity maintenance, (ii) provisioning services such as food, fibre, or fish, (iii) regulating services such as climate regulation or carbon seques-tration, and (iv) cultural services such as tourism or spiritual and aesthetic appreciation.

Emissions
Direct emissions are released and attributed at points in a specific renewable energy chain, whether a sector, a technology or an activity. For example, methane emissions from decomposing submerged organic materials in hydropower reservoirs, or the release of CO2 dissolved in hot water from geothermal plants, or CO2 from biomass combustion. Indirect emissions are due to activities outside the considered renewable energy chain but which are required to realize the renewable energy deployment. For example, emissions from increased production of fertilizers used in the cultivation of biofuel crops or emissions from displaced crop production or deforestation as the result of biofuel crops. Avoided emissions are emission reductions arising from mitigation measures like renewable energy deployment.

Emissions Reduction (ER) Programme
A programme to reduce carbon emissions from deforestation and forest degradation.

Emissions Reductions Programme Idea Note (ER-PIN)
An Emissions Reduction Programme Idea Note (ER-PIN) is an initial proposal to the Carbon Fund of the Forest Carbon Partnership Facility. Carbon Fund donors use the ER-PIN to evaluate and select initiatives to further pursue with FCPF Participant countries with the intent to reach an Emission Reductions Purchase Agreement (ERPA). Countries (or designated programme proponents) submit information following an approved document template that outlines their ideas for pro-gressing REDD+ to the "results-based" payment phase. The mechanism seeks to pilot "performance-based payments for verified emission reductions from REDD+ programmes in countries that have made considerable progress toward REDD+ Readiness. The goal is to provide incentives to reduce emissions while protecting forests, conserving biodiver-sity, and enhancing the livelihoods of forest-dependent peoples and local communities."

Emissions scenario
A plausible representation of the future development of emissions of substances that are potentially radioactively active (e.g., greenhouse gases, aerosols), based on a coherent and internally consistent set of assumptions about driving forces (such as demographic and socio-economic develop-ment, technological change) and their key relationships. In 1992, the IPCC presented a set of emissions scenarios that were used as a basis for the climate protections in the Second Assessment Report. These emissions scenarios are referred to as the IS92 scenarios.

Environmental and Social Management Framework
A framework to ensure that adverse environ-mental and social impacts are avoided or appropriately mitigated and compensated for.

Extractivists
Harvesters of non-timber forest products.

Fondo Nacional de Financiamiento Forestal (FONAFIFO)
National Forestry Financing Fund. FONAFIFO is the coordinating organization of the ER Program and the REDD+ strategy in Costa Rica. FONAFIFO is a governmental institution established by Forestry Act 7575 to finance the forestry sector and execute the payment and sale of environmental services (PES and CES). The Act stipulates the Fund's responsibilities and powers in the area of environmental services for the implementa-tion of deforestation avoidance projects and initiatives to reduce emissions, mainly in terms of land use. FONAFIFO is in charge of creating links between markets of environ-mental services, forest owners, the forestry sector, PES implementers, governmental agencies, financial bodies, indigenous territories, national and international nongovernmental organizations and national and international donors.

Forest Carbon Partnership Facility (FCPF)
A World Bank administered facility to help developing countries reduce emissions from deforestation and forest degradation. Objectives include capacity building for REDD+ and testing performance-based payment schemes in pilot countries.

Forest Carbon Trust Fund (FCTF)
The Forest Carbon Trust Fund (FCTF) is a four-year initiative funded by the Norwegian government that provides support to a group of national and regional NGOs to pilot an institutional mechanism for benefit sharing of REDD+ funds from community forest and watershed management initiatives.

Forest Investment Program (FIP)
The Forest Investment Program (FIP) is one of three strategic programs of the Climate Investment Funds (CIF). FIP provides developing countries with scaled-up financing to plan and implement readiness reforms and public and private investments, identified through national REDD+ readiness or equivalent strategies, while taking into account opportunities to help adapt to the impacts of climate change on forest ecosystems and to contribute to multiple benefits such as biodiversity conservation, protection of the rights of indigenous peoples groups and local communities, poverty reduction and rural livelihood enhancements. Projects supported under a country's FIP investment plan will pilot and scale-up replicable models for REDD+ interventions that improve forest management and reduce pressure on forest ecosystems.

Forest Law, Enforcement, Governance and Trade (FLGET)
The Forest Law Enforcement, Governance and Trade programme of the European Union was established in 2003 and aims to improve governance and reduce illegal logging by strengthening sustainable and legal forest management, improving governance and promoting trade in legally produced timber. The EU FLEGT process builds upon previous regional forest law enforcement and governance (FLEG) initiatives, such as the FLEG progress in Asia and the Pacific, the Africa Forest Law Enforcement and Governance (AFLEG) Ministerial Conference and the Europe and North Asia Ministerial Conference on Forest Law Enforcement and Governance.

Forest-risk commodities
Those commodities that have the potential to create deforestation or forest degradation (e.g. timber, soy, beef, palm oil).

Forest Stewardship Council
FSC is an independent, non-profit organization that aims to protect forests for future generations. It is an open, membership-led organization that sets voluntary standards under which forests and companies are certified.

Free, Prior, and Informed Consent (FPIC)
The UN Declaration on the Rights of Indigenous Peoples (2007) upholds the rights of indigenous people to grant or withhold their FPIC for: activities affecting the lands they have traditionally owned, occupied, or used; any proposed relocation and; any legal or administrative measures affecting them. FPIC implies that consent has been obtained without coercion in advance of project authorization and commencement, and that the affected parties fully understand the scope, duration and potential impacts of the activities.

Gain-Loss Method
The Gain-Loss Method is a process-based approach to estimating stock changes in carbon pools, which estimates the net balance of additions to and removals from a carbon stock.

Global Environment Facility (GEF)
An independent financial organization that provides grants to developing countries for projects that benefit the global environment and promote sustainable livelihoods in local communities. The Parties to the Convention assigned operation of the financial mechanism to the GEF on an on-going basis, subject to review every four years. The financial mechanism is accountable to the COP.

Good Practice Guidelines
A set of procedures intended to ensure that greenhouse gas inventories are accurate in the sense that they are systematically neither over nor underestimates so far as can be judged, and that uncertainties are reduced so far as possible. Good Practice covers choice of estimation methods appropriate to national circumstances, quality assurance and quality control at the national level, quantification of uncertainties and data archiving and reporting to promote transparency.

Green Climate Fund (GCF)
The GCF was founded within the framework of the UNFCCC as a mechanism to transfer money from the developed to the developing world, in order to assist the developing countries in adaptation and mitigation practices to counter climate change. Its legal basis can be found in the Copenhagen Accord, which was adopted during the 15th Conference of the Parties (COP-15) in Copenhagen in 2009. This decision was confirmed and made official in paragraph 102 of the Cancun Agreements that were adopted during COP-16 in Cancun in 2010. The Green Climate Fund was then launched at the 2011 UN Climate Change Conference (COP 17) in Durban, South Africa and its governing instrument was adopted. It will be governed by a Board of 24 members and initially supported by an Interim Secretariat.

Greenhouse gas
Greenhouse gases (GHGs) are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds. This property causes the greenhouse effect. Water vapour (H_2O), carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4) and ozone (O_3) are the primary greenhouse gases in the atmosphere.

Grievance and redress mechanism
Grievance, conflict and redress mechanisms are designed to receive, assess and resolve complaints of directly affected stakeholders, in this case related to REDD+ implementation with a view to taking corrective action. Typically, these mechanisms focus on flexible approaches to resolving disputes through options such as fact-finding, dialogue, facilitation or mediation.

Ground-truthing
The process of on the ground validation of forest cover data generated via remote sensing sources to enhance and calibrate the quality of the monitoring system.

Impact assessment (climate change)
The practice of identifying and evaluating, in monetary and/or non-monetary terms, the effects of climate change on natural and human systems.

Indigenous peoples
No internationally accepted definition of indigenous peoples exists. Common characteristics often applied under international law, and by United Nations agencies to distinguish indigenous peoples include: residence within or attachment to geographically distinct traditional habitats, ancestral territories, and their natural resources; maintenance of cultural and social identities, and social, economic, cultural and political institutions separate from mainstream or dominant societies and cultures; descent from population groups present in a given area, most frequently before modern states or territories were created and current borders defined; and self-identification as being part of a distinct indigenous cultural group, and the desire to preserve that cultural identity.

Institutional arrangements
Institutional arrangements for REDD+ refer to (i) the network of institutions or agencies that would be responsible for delivering REDD+; (ii) their functions, namely "who does what"; and (iii) the interaction between institutions.

Jurisdictional accounting framework
A validated REDD+ accounting framework (made up of jurisdictional accounting framework elements) developed, defined, and approved at the jurisdictional level.

Kyoto Protocol
The Kyoto Protocol was adopted at the Third Session of the Conference of the Parties (COP) to the UN Framework Convention on Climate Change (UNFCCC) in 1997 in Kyoto, Japan. It contains legally binding commitments, in addition to those included in the UNFCCC. Countries included in Annex B of the Protocol (most member countries of the Organisation for Economic Cooperation and Development (OECD) and those with economies in transition) agreed to reduce their anthropogenic greenhouse gas emissions (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) by at least 5% below 1990 levels in the commitment period 2008 to 2012. The Kyoto Protocol entered into force on 16 February 2005.

Landsat
The Landsat Program provides the longest continuous space-based record of Earth's land in existence. Since 1972, Landsat satellites have collected measurements of Earth's continents and surrounding coastal regions that have enabled people to study forests, food production, water and land use, ecosystems, geology, and more. The long data record allows scientists to evaluate the dynamic changes caused by both natural processes and human practices. The Landsat Program is jointly managed by the U.S. Geological Survey and NASA.

Leakage
The unexpected loss of anticipated carbon benefits due to the displacement of activities in the project area to areas outside the project, resulting in carbon emissions. Leakage can negate some or all of the carbon benefits generated by a project. Although not often acknowledged, leakage can also be positive, if best practices are adopted outside of the project area and gain widespread use, e.g. the displacement of logging due to forest conservation activities.

Living Forests Model
The Living Forests Model presents various global land-use scenarios. It calculates the effect of agents such as population growth and consumer demand, and describes potential impacts in key areas such as food production, climate change, biodiversity, commodity prices and economic development.

Measuring
The M element of MRV Systems stands for monitoring or measuring depending on who is talking. Actually it is both.

Mexico's Fund for Nature Conservation
Mexico's Fund for Nature Conservation (FMCN) comprises multiple subfunds that focus on different thematic and geographic priorities. FMCN consulted with 400 representatives from 249 key conservation and development organizations in its first year of operation to develop its priorities. FMCN sets specific biodiversity conservation priorities related to national environmental priorities (and in compliance with national programmes) and solicits proposals for projects that target those specific priorities. These strategic priorities are revised annually by FMCN before soliciting a new round of proposals.

Millennium Development Goals
The Millennium Development Goals are eight time-bound globally agreed goals adopted in 2000 and set to be achieved by 2015, providing benchmarks for tackling extreme poverty in its many dimensions. They include goals and targets on income poverty, hunger, maternal and child mortality, disease, inadequate shelter, gender inequality, environmental degradation and the Global Partnership for Development. The goals have been commonly accepted as a framework for measuring development progress.

Mitigation
An anthropogenic intervention to reduce the anthropogenic forcing of the climate system; it includes strategies to reduce greenhouse gas sources and emissions and enhancing greenhouse gas sinks.

Moabi
Moabi is a powerful online tool for tracking information spatially. It is a collaborative mapping system that builds a community of users to share, edit, and discuss issues that could affect the sustainability of critical ecosystems. This system allows the community to track and report development related events such as large-scale projects, as well as deforestation events, and to also report validation data for government-generated information. This tool can be used for validation/verification of reported data, crowd sourced feedback, as well as assessment and update of drivers of deforestation.

MRV systems
MRV systems or Monitoring (or Measuring), Reporting and Verification (or Validation) systems constitute the resources tracking and inventorying system that sits at the heart of REDD+ implementation both at a national and subnational level. Their purpose is to track in accurate, consistent, complete, transparent and comparable ways the amount of carbon stored in forest ecosystems across time and allow estimation of emissions reductions resulting from REDD+ mitigation actions implementation when comparing stock behaviour with expected estimates generated based on historical trends (a.k.a. reference levels [REL/RL]).

Multilateral funding
Funds that receive contributions from more than one donor government and are in most cases administered by international organizations.

National Forest Inventories (NFIs)
A database of information related to a country's forest resources that can provide forest and land use and land-use change information for REDD+ monitoring, reporting and verification (MRV).

Nationally Appropriate Mitigation Actions (NAMAs)
Voluntary or mandatory action by a developing country to reduce its carbon emissions in line with its economic, environmental, social and political context.

National Program for Community Empowerment (PNPM)
The National Program for Community Empowerment (PNPM's) overall objective is to reduce poverty and improve local-level governance in rural areas of Indonesia through the provision of investment resources to support productive proposals developed by communities, using a participatory planning process.

Nested REDD+
A hybrid approach that includes elements of both subnational and national approaches to REDD+. A nested approach allows an international funding mechanism to account for and credit emissions reductions and carbon stock enhancements at both subnational and national levels. The approach can either be sequential (first subnational then national) or simultaneous (accounting at both levels).

Non-carbon benefits
Benefits that may contribute to improved social, environmental and economic performance and produce more enduring results than programs that change temporary cost-benefit decisions about land use. These include strengthening forest governance and management of natural resources, encouraging socially-inclusive participation in policy-making, increasing information transparency, and promoting recognition of the rights of indigenous peoples and local communities (IPLCs) for their territories, lands, natural resources and traditional livelihoods and cultures.

Parsimony approach
A parsimony approach uses the least number of steps in order to avoid increasing the sources of errors during carbon estimation.

Payments for Ecosystem Services (PES)
Voluntary payment by a (minimum one) buyer to a (minimum one) provider to 'buy' an environmental service (or a land use likely to secure that service), if, and only if the provider secures the environmental service. In REDD+, PES refers to a results-based system in which payments are made for emissions reductions or carbon stock enhancements relative to an agreed reference level.

Persistent organic pollutants (POPs)
Chemicals that remain intact in the environment for long periods and become widely distributed geographically. Regulated by the Stockholm Convention.

Phenology
The study of natural phenomena that recur periodically (e.g., development stages, migration) and their relation to climate and seasonal changes.

Readiness
REDD+ country actions, including capacity building, policy design, consultation and Consensus building, and testing and evaluation of a REDD+ national strategy, prior to a comprehensive REDD+ implementation.

Readiness package (R-package)
A package of activities which builds on the R-PP and is designed to support a REDD+ Country Participant's capacity to participate in possible future systems of positive incentives for REDD+.

REDD+ Social and Environmental Standards
REDD+ SES is a set of international standards developed through an inclusive multi-stakeholder process to support the design and implementation of government-led REDD+ programmes that respect the rights of Indigenous Peoples and local communities and generate significant social and environmental benefits. The standards have been explicitly designed to go beyond laying out minimum safeguards, and to identify and elaborate benefits.

Reforestation
Planting of forests on lands that have previously contained forests but that have been converted to some other use. For a discussion of the term forest and related terms such as afforestation, reforestation and deforestation.

Remote Sensing

A method of measuring deforestation and/or forest degradation by a recording device that is not in physical contact with the forest, such as a satellite.

Reporting

The R or reporting component of the MRV system constitutes its heart and soul. Basically, it defines the WHAT FOR of the WHAT (the M). The R allows us to translate the information the M component has generated into meaningful, tangible information for decision making. The deliverables defined for R (the specific questions that need to be answered while reporting) and the standards it needs to comply with define the objectives and design of M component. These questions do not only include how much CO2 has been emitted, sequestered or avoided to be emitted. It takes care of finding the true meaning of those quantities in terms of management objectives.

Safeguard Information System (SIS)

Decision 12/CP.17 of the UNFCCC Durban Outcome states that an SIS should provide information on how all Cancun safeguards are addressed and respected. SIS should be country-driven, implemented at a national level, and built on existing systems, as appropriate. It was also agreed that reporting of summary information on how safeguards are being addressed and respected would take place periodically in national communications to the UNFCCC. Parties to the UNFCCC further agreed that as SIS are developed, relevant international obligations and agreements should be recognized and gender considerations respected.

Safeguards

Safeguards are generally understood as policies and measures that aim to address both direct and indirect impacts to communities and ecosystems, by identifying, analysing and ultimately working to manage risks and opportunities. Safeguards are important to ensure that REDD+ actions do not cause negative social or environmental impacts.

Scenario

A plausible and often simplified description of how the future may develop, based on a coherent and internally consistent set of assumptions about driving forces and key relationships. Scenarios may be derived from projections, but are often based on additional information from other sources, sometimes combined with a 'narrative storyline'. See also climate (change) scenario, emissions scenario and SRES (Special Report on Emissions Scenarios).

Sea-level rise

An increase in the mean level of the ocean. Eustatic sea-level rise is a change in global average sea level brought about by an increase in the volume of the world ocean. Relative sea-level rise occurs where there is a local increase in the level of the ocean relative to the land, which might be due to ocean rise and/or land level subsidence. In areas subject to rapid land-level uplift, relative sea level can fall.

Stakeholder

An individual, group or organization that has an interest or concern in a proposed project activity or actions leading to the implementation of such an activity.

Stock-Difference Method

The Stock-Difference Method is stock-based approach to estimating stock changes in carbon pools, which estimates the difference in carbon stocks at two points in time.

Sustainable development

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable Forest Management (SFM)

A dynamic and evolving concept [that] aims to maintain and enhance the economic, social and environmental value of all types of forests, for the benefit of present and future generations. In the REDD+ debate, some organizations make a distinction between "sustainable forest management" (SFM) and "sustainable management of forests" (SMF): SFM is then referring to industrial logging, while SMF is a broader term.

Terrestrial

Pertaining to land.

System of Incentives for Environmental Services (SISA)

The Brazilian State of Acre's System of Incentives for Environmental Services (SISA) law is seen as one of the first comprehensive REDD+ laws to cover an entire state. The range of the law's incentive schemes is still under development, but the law aims to jointly achieve poverty alleviation and environmental conservation through the creation of a legal foundation for valuing a range of environmental services and providing positive incentives to sustainably manage these.

Tree line

The upper limit of tree growth in mountains or high latitudes. It is more elevated or more poleward than the forest line.

United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)

In accordance with UNDRIP's Articles, indigenous peoples must fully participate in the definition and implementation of policies and plans related to climate change mitigation.

United Nations Development Group (UNDG)

An instrument for UN reform created by the Secretary-General in 1997 to bring together operational agencies in the UN System working on development and MDGs.

United Nations Framework Convention on Climate Change (UNFCCC)

The Convention was adopted on 9 May 1992, in New York, and signed at the 1992 Earth Summit in Rio de Janeiro by more than 150 countries and the European Community. Its ultimate objective is the 'stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system'. It contains commitments for all Parties.

US Lacey Act

A conservation law in the US that prohibits the trade of illegal timber products.

Verification

The "verification" component of a monitoring, reporting and verifying (MRV) system. This component helps to validate what is monitored and reported, and brings transparency to the process. It commonly represents the link with participatory MRV in which communities and stakeholders are able to input, analyse, and verify data into the MRV system. This could be done by mechanisms that are intrinsic to the MRV system or, by the use of third party individuals, facilitators, systems or even certifiers as is the case with forestry practices.

Verified Carbon Standard (VCS)

A certification mechanism for emission credits not regulated under the Kyoto Protocol, and formerly called the Voluntary Carbon Standard. The VCS was developed by The Climate Group, the International Emissions Trading Association, the World Economic Forum and the World Business Council for Sustainable Development to provide a robust, global standard and programme for approval of credible voluntary offsets. *www.v-c-s.org*.

Verified Emissions Reductions (VERs)

A unit of greenhouse gas emissions reduction that has been verified by an independent auditor, but that has not undergone the procedures for verification, certification and issuance under the Kyoto Protocol, and may have yet to meet the legal requirements under the Protocol. The units are traded on voluntary carbon markets.

Voluntary Emissions Reductions

A VER (Voluntary Emission Reduction) is the equivalent of 1 metric tonne of carbon dioxide. It indicates that the emissions reduction has been verified under a voluntary standard such as VCS (Voluntary Carbon Standards). VERs can be traded on the voluntary market only.

Zero Net Deforestation and Forest Degradation (ZNDD)

WWF defines ZNDD as: no net forest loss through deforestation and no net decline in forest quality through degradation; and stresses that: (a) most natural forest should be retained—the annual rate of loss of natural or semi-natural forests should be reduced to near zero; and (b) any gross loss or degradation of pristine natural forests would need to be offset by an equivalent area of socially and environmentally sound forest restoration.

Source information:

All definitions from the Appendix 1 Glossary of the following publication unless otherwise noted:
Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J. & Hanson, C.E. (eds). 2007. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment. Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.

Please visit reddcommunity.org/glossary for an expanded glossary of additional REDD+ terms and definitions.

WWF's international Forest and Climate Programme works to ensure that the conservation of tropical forests as carbon stores is secured by green economic development that benefits people, the climate and biodiversity in transformational ways.

f / wwf   **t** / wwfforestcarbon

FORESTCLIMATE@WWF.PANDA.ORG
PANDA.ORG/FORESTCLIMATE

Photos and graphics © WWF or used with permission.
Text available under a Creative Commons licence.

WWF

Why we are here
To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

www.panda.org/forestclimate

® WWF Registered Trademark Owner © 1986, WWF-World Wide Fund for Nature (formerly World Wildlife Fund), Gland, Switzerland