Analysing REDD+

Challenges and choices

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Printed in Indonesia
ISBN: 978-602-8693-80-6

Angelsen, A., Brockhaus, M., Sunderlin, W.D. and Verchot, L.V. (eds) 2012 Analysing REDD+:
Challenges and choices. CIFOR, Bogor, Indonesia.

Photo credits:

Cover © Cyril Ruoso/Minden Pictures

Parts: 1. Habtemariam Kassa, 2. Manuel Boissière, 3. Douglas Sheil

Chapters: 1. and 10. Yayan Indriatmoko, 2. Neil Palmer/CIAT, 3. and 12. Yves Laumonier,
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Designed by CIFOR's Multimedia Team, Information Services Group
Language editing, project management and layout by Green Ink Ltd (www.greenink.co.uk)

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Center for International Forestry Research

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research to inform policies and practices that affect forests in developing countries. CIFOR is a
CGIAR Consortium Research Center. CIFOR's headquarters are in Bogor, Indonesia and it also has
offices in Asia, Africa and South America.

Appendix

CIFOR's Global Comparative Study on REDD+ (GCS)

Louis V. Verchot, Maria Brockhaus, William D. Sunderlin and Arild Angelsen

CIFOR is implementing a research and knowledge-sharing strategy on Reducing Emissions from Deforestation and forest Degradation (REDD+). The objective of the strategy is to provide REDD+ policymakers and practitioner communities with the information, analysis and tools they need to ensure *effective* and *efficient* reduction of carbon emissions with *equitable* impacts and co-benefits – including poverty reduction, protection of local livelihoods, rights and tenure, and enhancement of non-carbon ecosystem services. We call this the 3E+ framework, and it was elaborated upon in the previous book 'Realising REDD+' (Angelsen *et al.* 2009).

The strategy is being implemented through three research components:

1. National REDD+ initiatives
2. Subnational projects
3. Monitoring and reference levels

The specific objective of the first component is to support the achievement of 3E+ outcomes by national REDD+ strategies and policies. This objective is being realised by generating information, analysis and tools that consider diverse stakeholder interests and are designed to inform national REDD+ strategies and policies (Chapters 5, 8, 9 and 17 in this book). In addition, our vision is that second-generation national REDD+ initiatives will incorporate best practices derived from detailed assessments of the first-generation strategies and policies.

The specific objectives of the second component are to inform first-generation subnational REDD+ projects by analysing their design and implementation. The results of the analysis and tools we are developing will increase learning about how to achieve 3E+ outcomes from REDD+ projects. The lessons learned and best practices derived from the detailed assessment of first-generation REDD+ demonstration activities will also inform and improve second-generation REDD+ demonstration activities.

The specific objective of the third component is to support better and more cost efficient measurement, reporting and verification (MRV) systems

Table A1 Countries included in GCS research

Country	Component 1	Component 2	Component 3
Brazil	X	X	
Peru	X	X	X
Cameroon	X	X	X
Tanzania	X	X	
Indonesia	X	X	X
Vietnam	X	X	X
Bolivia	X		X
Democratic Republic of Congo (DRC)	X		
Nepal	X		
Burkina Faso	X		
Mozambique	X		
Papua New Guinea (PNG)	X		

Note: the three categories (in different colours) reflect the amount of work (in descending order) carried out by GCS

Table A2 Partners in the GCS project

Partner	Acronym	Country	Component(s)
University of Melbourne	UoM	Australia	1 & 2
<i>Centro de Estudios para el Desarrollo Laboral y Agrario</i>	CEDLA	Bolivia	1 & 2
<i>Instituto Boliviano de Investigación Forestal</i>	IBIF	Bolivia	3
<i>Institut de Recherche pour le Développement</i>		Bolivia	3
<i>Instituto de Mudanças Climáticas e Regulação de Serviços Ambientais</i>	IMC	Brazil	2
<i>Instituto Centro de Vida</i>	ICV	Brazil	2
<i>Instituto de Pesquisa Ambiental da Amazônia</i>	IPAM	Brazil	2
The Nature Conservancy	TNC	Brazil	2
<i>Fundação Amazonas Sustentável</i>	FAS	Brazil	2
<i>Rede de Desenvolvimento, Ensino e Sociedade</i>	REDES	Brazil	2
<i>Centre pour l'Environnement et le Développement</i>	CED	Cameroon	2
GFA-Envest		Cameroon	2
University of Ngaoundere		Cameroon	3
Ministry of Environment and Protection of Nature		Cameroon	3
<i>Conseil pour la Défense Environnementale par la Légimité et la Traçabilité</i>	CODELT	DRC	1
Nordic Agency for Development and Ecology	NORDECO	Denmark	3

continued on next page

Table A2 continued

Partner	Acronym	Country	Component(s)
Organisation National Forestiere Internationale	ONFI	France	3
Göttingen University		Germany	3
Biocarbon Consult		Germany	3
Indonesian Center for Environmental Law	ICEL	Indonesia	1
<i>Lembaga Studi Pers dan Pembangunan</i>	LSPP	Indonesia	1
REDD Aceh Task Force (Government of Aceh)		Indonesia	2
Fauna and Flora International Indonesia	FFIIndonesia	Indonesia	2
AusAID (Kalimantan Forests and Carbon Partnership)	KFCP	Indonesia	2
The Nature Conservation	TNC	Indonesia	2
Infinite Earth (PT. Rimba Raya Conservation)		Indonesia	2
Starling Resources / PT. RMU		Indonesia	2
Indonesian Soils Research Institute		Indonesia	3
Center for Climate Risk and Opportunity Management, Bogor Agriculture University		Indonesia	3
World Agroforestry Centre	ICRAF	Kenya	3
<i>Universidade Eduardo Mondlane</i>	UEM	Mozambique	1
ForestAction		Nepal	1
The Netherlands Development Organisation	SNV	Netherlands	1
Wageningen University	WU	Netherlands	2 & 3

Norwegian University of Life Sciences	UMB	Norway	1, 2 & 3
Centre For Climate Change And Sustainable Development at the University of Papua New Guinea	CCCSU UPNG	Papua New Guinea	1
National Research Institute	NRI	Papua New Guinea	1
<i>Libelula Comunicación Ambiente Y Desarrollo Sac</i>	Libelula	Peru	1
<i>Bosques Amazonicos S.A.C.</i> REDD project with Brazil nut harvesters, Madre de Dios	BAM	Peru	2
Cl. Alto Mayo Project, San Martin		Peru	2
WWF-Peru	WWF	Peru	3
<i>Asociación para la Investigación y el Desarrollo Integral</i>	AIDER	Peru	3
<i>Derecho, Ambiente y Recursos Naturales</i>	DAR	Peru	1
Research on Poverty Alleviation	REPOA	Tanzania	1
Tanzania Traditional Energy Development and Environmental Organization	TaTEDO	Tanzania	2
Jane Goodall Institute	JGI	Tanzania	2
CARE		Tanzania	2
Tanzania Forest Conservation Group	TFCG	Tanzania	2
Mpingo Conservation and Development Initiative	MCDI	Tanzania	2
University of Aberdeen		UK	3

continued on next page

Table A2 continued

Partner	Acronym	Country	Component(s)
Comparing Climate Change Policy Networks, University of Minnesota	COMPN	USA	1
World Resource Institute	WRI	USA	1
University of North Carolina	UNC	USA	2
Duke University		USA	2
North Carolina State University	NCSU	USA	2
Central Institute for Economic Management	CIEM	Vietnam	1
Centre of Research and Development in Upland Areas	CERDA	Vietnam	1
Son La Forestry Department	Son La FD	Vietnam	1
The Netherlands Development Organization	SNV	Vietnam	2
Research Centre for Forest Ecology and Environment of Forest Science Institute of Vietnam	RCFEE	Vietnam	3
Transparency International	TI	International	1
Common Market for Eastern and Southern Africa	COMESA	Regional	3

for REDD+ projects and national REDD+ schemes. We are developing new knowledge in four areas: MRV institutions and institutional capacity; approaches to assessing national and sub-national reference emissions levels and reference levels (RELS/RLs); emissions factors for better implementation of IPCC Tier 2 inventory methods (for definitions, see Chapter 15, and Box 16.3); and community participation in MRV. Currently most developing countries use Tier 1 methods in national greenhouse gas (GHG) inventories. We aim to develop better knowledge about sampling design and assessment of carbon stocks in order to facilitate implementation of IPCC Tier 2 approaches to carbon inventory. This will ensure more accurate and precise estimates of emissions reductions.

A fourth component of the project aims to *disseminate* the knowledge generated in the three research components to REDD+ policy makers and practitioners at all levels. This component is based largely on a web-based system, but information is also distributed through more traditional means, such as this book.

We are currently working in 12 REDD+ countries, each with a different focus and coverage of the three research components.

The project involves a large number of partners. National partnerships encompass both governmental, such as the provincial Government of Aceh and the Ministry of Forestry in Cameroon, and nongovernmental organisations such as *Rede de Desenvolvimento Ensino e Sociedade* (REDES) and the Indonesian Center for Environmental Law (ICEL). Internationally, the project works with UN partners (e.g. FAO, UNDP, UNEP, UNFCCC) and large international NGOs (e.g. CARE, The Nature Conservancy, WWF). In addition, there are several partnerships with private companies (e.g. Starling Resources) and universities in developed countries (e.g. North Carolina State University, Norwegian University of Life Sciences, University of Melbourne).

Component 1: National REDD+ processes

Component 1 analyses the policy processes that lead to the formulation and implementation of national REDD+ strategies. The study is currently underway in nine countries (Bolivia, Brazil, Cameroon, Democratic Republic of Congo (DRC), Indonesia, Nepal, Peru, Tanzania and Vietnam) and partial analysis is being undertaken in three additional countries (Burkina Faso, Mozambique and PNG). A media-based discourse analysis is underway in Norway.

The research objective is to inform national policy makers about how constraints to effective policymaking can be addressed through adequate

Figure A1 Research design and work modules of GCS Component 1

Table A3 Component 1 methods for analysing national REDD+ strategies: description and key objectives

Method	Objective and description
Country profile: Detailed guidelines for each section/ subsection Open interviews	Provides an in-depth description of the national context relevant to REDD+, the options for REDD+ under discussion and an overview of the policy dynamics outlining the key issues and challenges in the country. Describes drivers of deforestation, general and forest sector governance, natural resource and carbon tenure, relevant sector policies and programmes, and design options for REDD+ in terms of MRV; financing; benefit and cost sharing; alignment of institutions and policies; coordination; identification of key actors, consultation and policy events. The profile includes a summary assessment of the 3E+ implications.
Media-based discourse analysis: Media coding (three major national daily newspapers) with predefined code book, articles selected based on predefined keyword searches Media informant interviews	Analyses predominant discourse in the media to examine: Frequencies, frames (meta topics, topics) and actors (advocates and adversaries of frames), and their stances (position statements) on: Existing REDD+ discourse and the way in which it is shaping the options negotiated in the national REDD+ arena Reforms under discussion, both specific to REDD+ and of broader relevance Actors influencing or using specific discourse 3E+ implications of the various discourses.
Policy network analysis: Expert panel Actors in-depth interviews Social organisational survey	Assesses the actors and structural aspects of the REDD+ arena and considers implications for the 3E+ content of REDD strategies. Examines questions including: Who is involved in national REDD+ policy making? What are their perceptions, interests and power relations? What are their networks of information and influence? Repeated over time, this method can assess dynamics and power relations. Results of policy outcomes emerging from Components 2 and 3 will allow us to assess the efficiency outcomes.

continued on next page

Table A3 continued

Method	Objective and description
REDD+ policy content analysis	Identifies existing national strategy documents and provides a detailed content analysis of proposed policies and measures to secure 3E outcomes and co-benefits.
Policy studies: Conducted continuously, as appropriate	Covers specific policies, political economy questions, or options, such as biofuel or soy bean policies. Reviews specific lessons from reforms or mechanisms such as existing environmental trust funds. Provides insight into political economy aspects of REDD+ and the implications for 3E+ REDD+ design. Flexible application of this method allows for rapid response to emerging research questions.
National REDD+ strategy assessment	Brings together all five previous modules to assess the complete national REDD+ strategy to: i) identify obstacles and opportunities to realise REDD+ and secure 3E+ outcomes and co-benefits, and ii) provide policy recommendations for improved domestic policy design and implementation. The strategy assessment is based on a broad policy context and content analysis of existing national REDD+ strategies (actors, mechanisms, structures).
Global comparative analysis: Qualitative comparisons of country case research modules Comparative network analysis QCA (qualitative comparative analysis)	Provides guidance for second generation REDD+ design to address problems appearing in national policy arenas from first generation initiatives. Various analytical lenses will be applied, for example the 3E+ criteria, governance factors and country context variables. Draws on data derived from all methods above and provides comparison across national case studies within each method, such as a global comparative media analysis, and across methods.

policy design. Particular focus is given to providing evidence-based options for achieving efficient, effective and equitable REDD+ policy strategies. Policy recommendations will include aspects of institutional design for specific country contexts.

The research investigates how the 3E+ outcomes of REDD+ national strategies, and their formulation and implementation, depend on existing governance conditions, including the actors involved in the policy process, the mechanisms and the structures. More broadly, it analyses how the institutional context, the discursive practices and the macro-economic conditions of a country affects national policies. The degree of political commitment, the internal power dynamics and the existence of mechanisms for policy learning are analysed to explain the degree of success of policy design and implementation. In addition, the research investigates how a lack of appropriate institutional mechanisms limits the effective targeting of financial incentives to reduce deforestation and achieve broader co-benefits, as well as possible options to overcome these obstacles.

Comparative analysis complements in-depth single case study research and assesses the social, political-economic and institutional factors that explain the varying 3E+ outcomes of national REDD+ strategies.

CIFOR researchers have developed five work modules to analyse national REDD+ strategies: a country profile, a media analysis, a policy network analysis, a REDD+ policy content analysis and a flexible module for specific policy studies that respond to individual country's research needs. These are explained more in Table A3 and Figure A1.

Component 2: Subnational projects

Component 2 aims to provide a solid empirical foundation for answering this overarching research question: How can REDD+ projects be designed in such a way that their outcomes fulfil the 3E+ co-benefits criteria? It also aims to answer the following subordinate questions: Do REDD+ projects meet the 3E+ co-benefits criteria? If yes, how? If not, why not? Based on this knowledge, how do we improve the design and implementation of current and future projects?

Component 2 aims to answer these questions through a counterfactual approach called 'before–after/control–intervention' (BACI). Socioeconomic and biophysical field data are collected before and after the introduction of conditional, performance-based REDD+ incentives (payments for environmental services, or PES) – the BA part of BACI. The data are collected in villages that are both outside (control) and inside (intervention) the boundaries of REDD+ projects – the CI part. Jagger *et al.* (2010) describe the BACI approach in detail and Sunderlin *et al.* (2010) present the technical guidelines for implementing Component 2.

The data serve as a baseline for predicting how the project will perform later on (*ex ante* approach) and, in conjunction with the second round of data collected after the introduction of REDD+ interventions, help to retrospectively measure the impact of REDD+ (*ex post* approach).

Component 2’s field research will be carried out at 24 project sites in the six core GCS countries: Brazil (7), Peru (2), Cameroon (2), Tanzania (6), Indonesia (6) and Vietnam (1). Table A4 lists the 22 projects sites already selected and where field work has begun.¹ All of the projects use the BACI approach except *Bolsa Floresta* in Brazil; conditional REDD+ incentives were introduced here before Component 2 began, so the BACI approach was not possible.

The units of analysis are: the project site; the village within project boundaries; and the household within the village (household analysis was not done at all project sites). At 16 ‘intensive’ project sites, we analyse the project as a whole: approximately eight villages (four control and four intervention) and approximately 240 households (30 in each village). At five ‘extensive’ project sites, we analyse the project and four intervention villages, but no control villages and no households. At the time of writing (May 2012), data have been collected at 20 project sites (19 BACI and one non-BACI), 170 villages and 3905 households (see Table A5).

Figure A2 Component 2’s BACI method

1 Two project sites remain to be selected in Brazil.

Table A4 REDD+ project sites in GCS Component 2 research

Country	Project Name	Abbreviation	State/ Province	Main proponent organisation	Website	Number of villages		Project site type	Data used in this book?
						Control	Intervention		
Brazil	Acre State System of Incentives for Environmental Services	Acre SISA	Acre	IMC	http://gcf.wsodqa.com/ StateOverview	4	4	BACI-Intensive	Yes
	Northwest Mato Grosso Pilot REDD+ Project	Cotriguaçu	Mato Grosso	ICV	www.icv.org.br/ quem_somos/noticias/ mato_grosso_presents_ redd_program_and_pilot_ project_in_copenhagueen. icv	4	4	BACI-Intensive	Yes
	Sustainable settlements in the Amazon: the challenge of transition from family production on the frontier to a low carbon economy	Transamazon	Pará	IPAM	www.ipam.org.br/ biblioteca/livro/id/250	4	4	BACI-Intensive	Yes

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Table A4 continued

Country	Project Name	Abbreviation	State/ Province	Main proponent organisation	Website	Number of villages		Project site type	Data used in this book?
						Control	Intervention		
	REDD+ Pilot Program in São Felix do Xingu	SFX	Pará	TNC, Brazil	www.nature.org/ ourinitiatives/urgentissues/ climatechange/index.htm	4	4	BACI-Intensive	Yes
	Blosa Floresta Program	Bolsa Floresta	Amazonas	FAS	http://fas-amazonas.org/ noticia/bolsa-floresta- program-invests-more- than-400-thousand-in-the- uacari-rds?lang=en	6	34	Non-BACI	No
	Brazil Nut Concessions REDD Project	BAM	Madre de Dios	BAM	www.bosques-amazonicos. com/en/our-projects/ redd-in-concessions-of- brazil-nuts-in-madre-de- dios-peru	0	0	BACI-Intensive	No
Peru	Alto Mayo REDD+ Initiative	Alto Mayo	San Martin	Conservation International	www.conservation.org/ learn/climate/strategies/ field/pages/projects.aspx	0	0	BACI-Intensive	No
	Cameroon Payment for Ecosystem Services (PES) project in Cameroon South and East Region	CED	South and East Region	CED	www.cedcameroun.org/ en/programmes/axes-de- travail/axes-strategiques- thematiques/1209- changement-climatique	4	2	BACI-Intensive	Yes

	Mt. Cameroon REDD Project	Mount Cameroon	South West region	GFA-Envest	www.gfa-group.de/envest/projects/gfa_envest_projects_eng_3431628.html	3	4	BACI-Intensive	Yes
Tanzania	Community-based REDD Mechanisms for Sustainable Forest Management in Semi-Arid Areas	TaTEDO	Shinyanga	TaTEDO	www.tatedo.org/cms/images/stories/broncure/reddbronchure.pdf	5	4	BACI-Intensive	Yes
	Making REDD Work for Communities and Forest Conservation in Tanzania	TFCG-Kilosa	Morogoro	TFCG	www.tfcg.org/pdf/TFCG%20MJUMITA%20REDD%20project%20leaflet.pdf	2	5	BACI-Intensive	Yes
					www.tfcg.org/pdf/article_about_tfcg.pdf				
	Making REDD Work for Communities and Forest Conservation in Tanzania	TFCG-Lindi	Lindi	TFCG	www.tfcg.org/pdf/TFCG%20MJUMITA%20REDD%20project%20leaflet.pdf	0	4	BACI-Extensive	Yes

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Table A4 continued

Country	Project Name	Abbreviation	State/ Province	Main proponent organisation	Website	Number of villages		Project site type	Data used in this book?
						Control	Intervention		
	Building REDD Readiness in the Masito Ugalla Ecosystem Pilot Area in Support of Tanzania's National REDD Strategy	JGI	Kigoma	JGI	www.janegoodall.org/ programs/tanzania-redd- program	0	4	BACI-Extensive	Yes
	HIMA – Piloting REDD in Zanzibar through Community Forest Management	CARE	Unguja/ Zanzibar	CARE International in Tanzania	www.care.org/careswork/ projects/TZA070.asp	0	4	BACI-Extensive	Yes
	Mpingo Conservation Project	Mpingo	Lindi	MCDI	www.mpingoconservation. org/about.html	0	4	BACI-Extensive	Yes

Indonesia	Reducing Carbon Emissions from Deforestation in the Ulu Masen Ecosystem	Ulu Masen	Aceh	Government of Aceh (Task Force REDD Aceh)	www.climate-standards.org/projects/files/Final_Ulu_Masen_CCBA_project_design_note_Dec29.pdf	4	4	BACI-Intensive	Yes
	REDD Pilot Project Development, Community Carbon Pools	KCCP	Kalimantan Barat	FFI-Indonesia	www.fauna-flora.org/explore/indonesia/	4	4	BACI-Intensive	Yes
	Kalimantan Forests and Carbon Partnership	KFCP	Kalimantan Tengah	AusAID KFCP	www.forestpeoples.org/sites/fpp/files/publication/2011/10/central-kalimantan-briefing-2.pdf	4	4	BACI-Intensive	Yes
	The Rimba Raya Biodiversity Reserve Project	RRC	Kalimantan Tengah	Infinite Earth (PT. Rimba Raya Conservation)	www.infinite-earth.com/projects-details.html	0	4	BACI-Extensive	Yes
	Katingan Conservation Area: a Global Peatland Capstone Project	Katingan	Kalimantan Tengah	Starling Resources / PT. Rimba Makmur Utama	http://starlingresources.com/projects-katingan.php	4	4	BACI-Intensive	Yes

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Table A4 continued

Country	Project Name	Abbreviation	State/ Province	Main proponent organisation	Website	Number of villages		Project site type	Data used in this book?
						Control	Intervention		
Vietnam	Berau Forest Carbon Program	Berau	Kalimantan Timur	TNC	www.nature.org/ ourinitiatives/urgentissues/ climatechange/index.htm	4	5	BACI-Intensive	No
	SNV Site, Cat Tien, Lam Dong District (VNM1)	SNV	Lam Dong	SNV	http://pubs.iied.org/pdfs/ G02745.pdf	4	4	BACI-Intensive	Yes
Total						60	110		

Table A5 Distribution of Component 2 villages by type (control/intervention) and mode (intensive/extensive/non-BACI) where data already collected

Research mode	Number of project sites	Intervention		Control		Total villages	Total households (HHs)
		Villages	HHs	Villages	HHs		
Intensive	14	56	1853	54	1712	110	3565
Extensive	5	20	-	-	-	20	-
Non-BACI	1	34	244	6	96	40	340
Total	20	110	2097	60	1808	170	3905

Note: This table includes data for all projects sites except the two in Peru where field research had just begun at the time of writing, and two project sites in Brazil not yet chosen.

Table A6 GCS Component 2 research instruments

Instrument category	Instrument	Purpose
Scoping/preparation	Village appraisal	Compile data for statistical matching of control and intervention villages
	Proponent appraisal	Information on project goals, objectives, scope, attributes, achievements to date
	Site narrative	Assessment of consistency between proponent strategy and local drivers of deforestation
Field survey of local stakeholders	Household survey	Data on household composition, assets, tenure, income, change in forest cover, views on wellbeing change, views on REDD+
	Village survey	Basic village information, tenure, livelihoods, land management practices and rules, views on wellbeing change, challenges, views on REDD+
	Women's survey	Information on women's livelihoods, gender-specific activities, forest management, decision making, views on wellbeing change, views on REDD+
	Medium and large landholder survey	Data on household composition, assets, tenure, income, land use management/licensing, change in forest cover, views on wellbeing change, views on REDD+
Survey of project implementation	Timeline of village activities	Characterise and record details of project implementation in each village to date
	Stakeholder list	Identify implementation and opportunity cost stakeholders and determine the most significant stakeholder groups
	Opportunity and implementation costs	Assess proponents' perception of opportunity costs and related work they are planning or have done; obtain estimates of total implementation costs to date
	Opinion survey on perceptions and politics	Assess perceptions of REDD+ and the project, identifying unanticipated benefits or costs
	Project checklist	Understand the broader context of the project, including interactions with the national level and plans related to carbon finance and benefit sharing
	Cost scoping exercise	Scope out the willingness of proponents to collaborate on in-depth analysis of project costs

MRV	Survey on MRV	Information on remote sensing and GIS data availability, techniques employed, REL estimation, and monitoring plans
Miscellaneous	Update on timing on REDD+ Interventions	Know the timing of interventions such as forest access restrictions, alternative livelihoods, PES
	Supplementary survey on participation and tenure	In-depth information on proponent engagement of community in establishing and implementing project, and attention to tenure issues

Note: As explained earlier in this Appendix, the Bolsa Floresta project site in Brazil had already introduced REDD+ conditional incentives and is therefore not part of the BACI research method. For this project, the survey instruments from the first two categories in this table were adapted to measure ongoing project implementation.

The original plan was to conduct both the *ex ante* and *ex post* research within the first GCS period (2009–2013). Due to delays in the introduction of REDD+ conditional incentives at almost all sites (see Chapter 10), this was impossible. Instead, in the first GCS period, Component 2 has focused almost wholly on compiling the baseline data – in anticipation that the ‘after’ data will be collected after 2013 – and on conducting *ex ante* analysis on the process and early outcomes of setting up REDD+ projects.

Component 2 research uses a wide variety of research instruments, depending on purpose, unit of analysis and target population. Table A6 classifies the research instruments into purpose categories and describes their uses. Some instruments can be accessed at the GCS web page: www.cifor.org/nc/online-library/browse/view-publication/publication/3286.html

Component 3: Monitoring and reference levels

Component 3 of the study provides policy makers and practitioners with information and tools for better GHG inventories and methods for establishing national and subnational reference levels. The study is currently underway in Peru, Cameroon, Indonesia and Vietnam. Partial analyses have been done in Bolivia and Kenya. The research investigates how REDD+ can be implemented effectively and efficiently. Work in this Component contributes to the question of equity through improving impact attribution (who has done what) and precision. Equity is discussed as one consideration in setting reference levels. We have also included analyses of some of the socially and environmentally oriented carbon standards, such as the Climate, Community and Biodiversity Alliance (CCBA) in the analysis. Table A7 summarises the research methods.

The research investigates MRV effectiveness and efficiency at the institutional level by looking at capacity and identifying capacity gaps. Countries need to be able to measure forest area change and assess carbon stock changes to implement a national MRV system. The different biophysical conditions in countries mean that MRV challenges vary; our analysis compares challenges to capacities to identify gaps. We used two recent international reporting exercises in the Forestry Resources Assessment to examine progress in capacity building.

Building on many years of CIFOR research on the economic drivers of deforestation, we developed a stepwise approach to setting RELs/RLs (see Chapter 16). Decisions in the UNFCCC raise the importance of using data-driven approaches to the construction of RELs/RLs, in terms of using historical data, adjusting for national circumstances and being transparent about the carbon pools and gases that have been included or omitted. The quality of both available data and data to be collected by countries is a key issue that underpins the construction of forest RELs/RLs. We used subnational data

Table A7 Methods for analysing national REDD+ strategies: description and key objectives

Method	Objective and description
Institutional capacity	Determine baseline capacity levels in all 99 non-Annex I countries Develop country case studies of capacity assessments to understand why capacity remains low and what can be done about it
Reference emissions levels	Develop and test a stepwise approach using multiple regression models Develop country case studies using statistical models for predicting future trends in GHG emissions
Emissions factors	National assessments of data sources for UNFCCC reporting of GHG emissions Synthesis of scientific literature for improved emissions factors for tropical wetlands and for non-CO ₂ GHGs Field work to develop new emissions factors with host country partners in technical services
Community-based monitoring of forest carbon	Comparative field testing of forest inventory by communities vs. by professional foresters, to assess cost–accuracy tradeoffs Participative design of forest monitoring for community needs that include measurements required for carbon monitoring Sociological research on attitudes and changes in attitudes associated with community-based forest monitoring

with different aggregation levels to test our approach, which uses a regression modelling framework. This allows countries to model future deforestation and analyse scenarios of plausible future emissions. This analytical tool should help countries determine likely future emissions ranges with transparent assumptions about known drivers of deforestation.

The availability of emissions factors for implementing IPCC methods for national GHG accounting continues to be a major constraint to implementing MRV in many developing countries. Our team has assessed the current state of knowledge of these factors in target countries and important forest ecosystems, and set priorities for collecting additional data. They are now working with technical services in the countries to collect the data needed to improve inventories. We are focusing on land use change in tropical wetlands and African forests, where data are particularly lacking. We have generated new biomass equations and excavated root systems to estimate root:shoot ratios. We have taken many flux measurements to assess the effects of land use change on soil respiration and on the fluxes of N₂O and CH₄, using

chamber techniques. We have also measured the effects of fertiliser on peat decomposition. By participating in this work, local researchers in Africa, Asia and Latin America are developing their skills in empirical quantitative methods.

Lastly, research on developing appropriate community-based measurement methods to facilitate the participation of local stakeholders in the process is beginning. Communities can provide a valid stream of data to national MRV systems and we are working in several locations to design and test approaches. We are comparing the accuracy and cost of forest inventories done by communities with those done by forestry professionals. We expect that community participation should increase the transparency of REDD+ studies and enhance community ownership of REDD+ activities. We will test this assumption empirically through sociological research.

Integration

This book represents the first synthesis of research results from CIFOR's Global Comparative Study. Unlike our previous books on REDD+, this volume presents new research findings from a programme specifically designed to support REDD+ policy development and implementation. The three research components of the GCS provide different angles from which to observe the development of REDD+ in first generation countries. The first two components differ in their scales of analysis, but in reality these two scales connect in countries. Likewise in the GCS, the scales connect and some of the more interesting interdisciplinary research is being developed at the interface between the components. MRV spans several scales and forms the conduit through which information is collected and moves across scales and levels. It serves as the basis for equity assessments as it determines who has done what in terms of emission reductions. The interaction of all three components of this research programme, and the interface between different disciplines, is where the essential learning is taking place. Connecting research across multiple scales and levels, and the required interdisciplinarity for sound and comprehensive research, also represent challenges.

We face additional challenges from the fact that REDD+ is a moving target, but it is moving slower than expected. Working with demonstration projects we also face challenges of confidentiality and sensitivities with respect to sharing and using data. Research on REDD+ faces numerous problems, and the GCS REDD+ study is no exception. Box A1 summarises some of these challenges.

REDD+ is a rather complex mechanism to ensure environmental integrity and real emissions reductions, and it will be implemented in countries with limited capacities. We believe that for REDD+ to be effective, the realities on

Box A1 Challenges of REDD+ research

Frances Seymour

REDD+ presents several challenges to researchers. The **idea and scope of REDD+** are evolving rapidly. Since the idea of including deforestation in developing countries was tabled at UNFCCC COP11 in 2005, Reducing Emissions from Deforestation (RED) has added a second 'D' for forest degradation, and then a '+' for the conservation of forest carbon stocks, sustainable management of forests and enhancement of forest carbon stocks. As Chapter 3 describes, REDD+ was initially conceptualised as a global to national to local PES scheme. Over time, the idea has significantly broadened to incorporate co-benefits, such as biodiversity conservation and poverty reduction, and is increasingly decoupled from performance-based payments. The term 'REDD+' can be variously understood as an objective, a proposed mechanism under the UNFCCC, or a broad suite of policies, programmes and projects moving forward in its name. Researchers are thus challenged to define a limited scope for studying REDD+.

The **practice of REDD+** is advancing slowly. Following inclusion in the Bali Action Plan at COP13 in Bali and the announcement of significant funding commitments, many expected REDD+ implementation to move forward quickly. In part due to the failure to reach an overall agreement on climate change at COP15 in 2010, and the associated decline in the near-term promise of market-based finance, the pace of progress has slowed at all levels. Researchers employing methods that compare circumstances before and after interventions are left waiting for REDD+ interventions to happen, having collected baseline data. Much analysis of the conditions necessary and sufficient for REDD+ to be effective, efficient and equitable remains speculative. For example, the four conditions outlined in Chapter 5 as necessary for effective national-level policy making have not yet been observed in any study countries.

REDD+ is multiscale. As observed in this book, REDD+ efforts at each level are inextricably tied to the progress of REDD+ at other scales. The original research design of the GCS on REDD+ gave insufficient attention to the subnational (or jurisdictional) scale, which has emerged as an important level for land use planning, programme implementation and policy development (for example, in the case of the Governors' Forests and Climate Task Force).

REDD+ is controversial. REDD+ is a contested idea, with proponents and opponents clashing in forums ranging from international negotiations through national media to academic journals. Researchers must navigate ideologically-charged terrain to avoid the fact and appearance of bias.

continued on next page

Box A1 continued

Some aspects of REDD+ are sensitive. Data relevant to REDD+ can include sensitive information from proprietary business plans, maps showing illegal land conversion, and testimony regarding violent conflicts over land tenure. Researchers gathering data on REDD+ often have difficulty winning the trust of key informants and must pay particular attention to honouring confidentiality commitments.

Field work is difficult. Collecting data in remote areas, where forests are still intact, has its hazards. GCS field crews have encountered tiger poachers, vehicle breakdowns, poor road conditions, hornet attacks, 'rustic' accommodation, fire, smoke and other challenges associated with tropical field work. In most places, medical facilities are rudimentary and rescue organisations do not exist.

the ground in these countries must be taken into account. REDD+ has the potential to be a transformative programme for tropical forests, but its success is not guaranteed. Through our ongoing research efforts in the GCS, we aspire to provide enough early lessons to avoid major pitfalls and mistakes that could derail the whole process. To paraphrase Albert Einstein, REDD+ should be as simple as possible, but not simpler!

Acknowledgements

Component 1

The methods and guidelines used in this research component were designed by Maria Brockhaus, Monica Di Gregorio and Sheila Wertz-Kanounnikoff. The methods applied for the media analysis and policy network analysis build on work undertaken in COMPON,² led by Jeffrey Broadbent and financially supported by the National Science Foundation. Monica Di Gregorio and Maria Brockhaus adapted the COMPON 'Protocol for Media Analysis' and the 'Protocol for Policy Network Analysis'. Many people contributed to country case studies, including media analysis, policy network analysis and country profiles, and have provided data, analysis and support.

Without the scientific guidance and coordination efforts of the following country case leaders in their respective countries, this comparative work would have been impossible: Peter Cronkleton (Bolivia); Sven Wunder and Peter May (Brazil); Suwadu Sakho-Jimbira (Burkina Faso); Samuel Assembe and Jolien Schure (Cameroon); Samuel Assembe (DRC); Daju Resosudarmo and

2 <http://compon.org>

Moira Moeliono (Indonesia); Sheila Wertz-Kanounnikoff (Mozambique); Thuy Thu Pham (Nepal); Arild Angelsen (Norway); Andrea Babon (PNG); Mary Menton (Peru); Salla Rantala (Tanzania); Thuy Thu Pham and Moira Moeliono (Vietnam).

National partner organisations and their teams in the research countries undertook data collection and analysis, together with the country case leaders. In particular, we would like to thank: Walter Arteaga, Bernado Peredo, Jesinka Pastor (Bolivia); Maria Fernanda Gebara, Brent Millikan, Bruno Calixto, Shaozeng Zhang (Brazil); Mathurin Zida, Michael Balinga, Houria Djoudi (Burkina Faso); Guy Patrice Dkamela, Felicien Kengoum (Cameroon); Felicien Kabamba, Augustin Mpoyi, Angelique Mbelu (DRC); Levania Santoso, Tim Cronin, Giorgio Indrarto, Prayekti Murharjanti, Josi Khatarina, Irvan Pulungan, Feby Ivalerina, Justitia Rahman, Muhar Nala Prana (Indonesia); Almeida Siteo, Alda Salomão (Mozambique); Dil Badhur, Bryan Bushley, Rahul Karki, Naya Sharma Paudel (Nepal); Laila Borge (Norway); Daniel McIntyre, Gae Gowae, Nidatha Martin, Nalau Binging, Ronald Sofo, Abel Simon (PNG); Hugo Piu, Javier Perla, Daniela Freundt, Eduardo Burga Barrantes, Talía Postigo Takahashi (Peru); Rehema Tukai, George Jambiya, Riziki Shemdoe, Demetrius Kweka, Therese Dokken (Tanzania); Nguyen Thi Hien, Nguyen Huu Tho, Vu Thi Hien, Bui Thi Minh Nguyet, Nguyen Tuan Viet and Huynh Thu Ba (Vietnam); and many others supporting the country teams.

Efrian Muharrom, Sofi Mardiah, Christine Wairata and Ria Widjaja-Adhi provided invaluable research support and assistance.

We also would like to thank Jan Börner, Martin Herold, Markku Kanninen, Kaisa Korhonen-Kurki, Anne Larson, Cecilia Luttrell, Pablo Pacheco, Elena Petkova, Frances Seymour and many others for their inputs and support.

Component 2

The published version of Component 2's methods guide³ was written by Pamela Jagger, Erin Sills, Kathleen Lawlor, William Sunderlin and the technical guidelines⁴ were written by William Sunderlin, Anne Larson, Amy Duchelle, Erin Sills, Cecilia Luttrell, Pamela Jagger, Subhrendu Pattanayak, Peter Cronkleton, and Andini Desita Ekaputri. Credit is also due to those who made insightful comments and critiques during the process of designing and pre-testing the survey instruments in late 2009, and those who participated in a meeting to finalise the research design in January 2010: Arild Angelsen, Andre Aquino, Stibniati Atmadja, Abdon Awono, Huynh Thu Ba, Riyong

3 www.cifor.org/nc/online-library/browse/view-publication/publication/3283.html

4 www.cifor.org/publications/pdf_files/Books/BSunderlin1001.pdf

Kim Bakkegaard, Simone Bauch, Rizaldi Boer, Jan Börner, Miguel Calmon, Mariano Cenamo, Peter Cronkleton, Therese Dokken, Paul Ferraro, Maria Fernanda Gebara, Raissa Guerra, Dian Intarini, Markus Kaiser, Alain Karsenty, Anirudh Krishna, Erin Myers Madeira, Peter May, Steve Panfil, Ida Aju Pradnja Resosudarmo, Mustofa Agung Sardjono, Galia Selaya, Frances Seymour, Denis Sonwa, Satyawan Sunito, Peter Vaughan and Sven Wunder.

Component 2's field work is being carried out at 22 project sites (see Table A4). We are greatly indebted to the organisations associated with those sites for their supportive collaboration and patience with the demands we place on them.

Field research teams in the six study countries are composed of the following individuals.

Brazil: Amy Duchelle (country representative); Riyong Kim Bakkegaard, Marina Cromberg, Maria Fernanda Gebara, Raissa Guerra, Tadeu Melo (field research supervisors); Carolle Utrera Alarcon, Marileide Gonçalves, Leonela Guimarães, Thiago Machado Greco, Giselle Monteiro, José Roberio Rodrigues, Kaline Rossi (encoders).

Cameroon: Abdon Awono (country representative and field research supervisor); Henri Owona (encoder).

Indonesia: Ida Aju Pradnja Resosudarmo (country representative); Pangestuti Astri, Stibniati Atmadja, Yayan Indriatmoko, Dian Intarini, Augusta Mindry (field research supervisors); Merlinta Anggilia, Mella Komalasari, Jhon Roy Sirait, Tina Taufiqoh (encoders).

Peru: Amy Duchelle, Peter Cronkleton (country representatives); Mary Menton (research fellow), Valerie Garrish, Galia Selaya (field research supervisors).

Tanzania: Therese Dokken (country representative and field research supervisor); Eliakimu Zahabu (former country representative); Demetrius Kweka, Susan Caplow (field research supervisors); Johannes Dill (encoder).

Vietnam: Huynh Thu Ba (country representative and field research supervisor); Nguyen Tien Dat (encoder).

Over 80 enumerators conducted most of the interviews and gathered data.

At the CIFOR headquarters in Bogor, Indonesia, the following people have been key in conducting the Component 2 work: Made Agustavia (database administrator); Made Dwi Astuti (secretary); Andini Desita Ekaputri (research

officer); Tini Gumartini (research assistant); Shijo Joseph (post-doctoral research fellow); Mrigesh Kshatriya (data analyst); Oktarita Satria (project assistant); Ida Aju Pradnja Resosudarmo (Indonesia country representative); William D. Sunderlin (component leader); Ria Widjaja-Adhi (project assistant).

We value the contribution of Josil Murray, a doctoral student conducting our research on REDD+ and biodiversity in Peru and Indonesia.

Component 3

The methods and guidelines used in this research component were designed by Louis V. Verchot, Arild Angelsen, Martin Herold, Markku Kanninen, Kristell Hergoualc'h and Daniel Murdiyarso. The field methods applied for work on emissions factors were designed by our PhD and MSc students: Jenny Farmer, Fitri Aini, Sebastian Persch and Margaret Thiong'o, and financially supported in part by the Global Environment Facility. They were supported by academic advisors Jo Smith (University of Aberdeen), Robin Matthews (McCauley Land Use Research Institute) and Dirk Hölscher (Georg August University of Göttingen). Research methods on leakage were designed by Stibniati Atmadja and Peter Vayda. Methods for reference levels (including reference emissions levels) were developed by Arild Angelsen, Simone Bauch, John Herbert Ainembabazi, Martin Herold and Arief Widjaya. Methods for institutional capacity assessments were developed by Martin Herold and Erika Romijn. Project-level MRV assessment methods were developed by Shijo Joseph, William D. Sunderlin and Louis V. Verchot.

Many people contributed to country case studies: Zulma Villegas and Bonifacio Mostacedo (Bolivia); Denis Sonwa, Pascal Cuny, Maden Le Crom and Adeline Giraud (Cameroon); Rizaldi Boer, Titiek Setyawati, Tania June and Doddy Yuli Irawan (Indonesia); Vu Tan Phuong, Vu Tien Dien, Pham Manh Cuong, Nguyen Thuy My Linh, Nguyen Viet Xuan and Vo Dai Hai (Vietnam). Country field data were collected by Margaret Thiong'o, Edith Anyango, Paul Mutuo, Sheila Abwanda, Denis Sonwa and Victor Kemeuze (Kenya). Oktarita Satria and Levanita Santoso provided invaluable research support and assistance.

Component 4

The knowledge-sharing component is overseen by John Colmey and Daniel Cooney. A big thank you must go to Sandra McGuire, who wrote the initial communications proposal for Component 4, but left CIFOR before it was launched. The Component has worked with numerous partners, including the Climate Change Media Partnership, Internews, the Society of Indonesian Environmental Journalists, Green Ink, PANOS London, Transparency International, the International Union for the Conservation of Nature, the Indonesian Forest Research and Development Agency, and the governments

of Denmark, Indonesia, Mexico, Poland and South Africa. The talented communications team of staff and consultants (part-time and full-time) includes: Leony Aurora, James Maiden, Michelle Kovacevic, Catriona Moss, Karin Holzknacht, Gabriela Ramirez, Kamal Prawiranegara, Gugi Ginanjar, Andrea Booth, Kate Evans, Mokhammad Edliadi, Aris Sanjaya, Budhy Kristanty, Nia Sabarniati, Mohammad Agus Salim, Arie Puntodewo, Yahya Sampurna, Gusdiyanto, Dodi Iriyanto, Wigid Triyadi, Gideon Suharyanto, Eko Prianto, Catur Wahyu, Vidya Fitriani, Erisa, Sufiet Erlita, Yuan Oktafian, Rizka Taranita, Wiwit Siswarini, Sekar Palupi, Dina Satrio, Santi Darmokusumo, Widya Sutiyo, Imogen Badgery Parker and Romy Serfaty. Past staff, consultants and partners include Nita Murjani, Edith Abilogo, James Clarke, Neil Palmer, Tim Cronin, Edith Johnson, Angela Dewan, Jeff Walker, Ramadian Bachtiar and Yani Saloh.

GCS project support

Invaluable administrative support was provided by Rosita Go, Ria Widjaja-Adhi, Rina, Made Dwi Astuti, Christine Wairata, Anna Luntungan, Susan Kabiling, Anastasia Elisa, Feby Litamahuputty and Oktarita Satria.

Donors

We gratefully acknowledge the financial support from the governments of Australia, Finland, Norway, the United Kingdom and the European Commission.