

The state of REDD negotiations: Consensus points, options for moving forward and research needs to support the process

A BACKGROUND DOCUMENT FOR THE UN-REDD SPONSORED
SUPPORT TO REGIONAL GROUPS

LOUIS V. VERCHOT AND ELENA PETKOVA



PREPARED BY THE CENTER FOR INTERNATIONAL FORESTRY RESEARCH (CIFOR)

BOGOR, INDONESIA

OCTOBER 2009

Contents

Contents	i
Abbreviations.....	ii
Executive summary.....	iv
1. Introduction.....	1
2. Regional context: deforestation rates, drivers and trends	1
3. Scope and scale of REDD	8
3.1 Consensus	9
3.2 Unresolved issues and options	9
4 Financing and benefits distribution.....	10
4.1 Consensus	10
4.2 Unresolved issues and options	11
4.3 Research needs.....	16
5 Monitoring, reporting and verification (MRV).....	17
5.1 Consensus	17
5.2 Unresolved issues and options	18
5.3 Research needs.....	19
6 Stakeholder involvement.....	20
6.1 Consensus	20
6.2 Unresolved issues and options	20
6.3 Research needs.....	21
7. Environmental and social co-benefits.....	22
7.1 Consensus	23
7.2 Unresolved issues and options	23
7.3 Research needs.....	24

Abbreviations

2006GL	2006 IPCC Guidelines for National Greenhouse Gas Inventories
AFOLU	agriculture, forestry and other land use
AR4	IPCC 4 th Assessment Report
ASB	Alternatives to Slash and Burn Partnership for the Tropical Forest Margins
AWG-LCA	Ad Hoc Working Group on Long-term Collaborative Action
BAP	Bali Action Plan
BAU	Business As Usual
BioCF	BioCarbon Fund
CAIT	Climate Analysis Indicators Tool (World Resources Institute)
CCBA	Carbon, Community and Biodiversity Alliance
CDM	Clean Development Mechanism
CIFOR	Center for International Forestry Research
COP	Conference of the Parties
FAO	Food and Agriculture Organization of the UN
FCPF	Forest Carbon Partnership Facility (World Bank)
FRA	Forest Resources Assessment of the FAO
GEF	Global Environment Facility
GHG	Greenhouse gas(es)
GOFC-GOLD	Global Observation of Forest and Land Cover Dynamics
GPG	IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry
HFLD	High Forest, Low Deforestation
IP	Indigenous people
IPCC	Intergovernmental Panel on Climate Change
LC	Local community
LDCs	Least developed countries
LUCF	Land use change and forestry

LULUCF	Land use, land use change and forestry
MEA	Millennium Ecosystem Assessment
MRV	Monitoring, reporting and verification
NGO	Nongovernmental organisation
OECD	Organisation for Economic Co-operation and Development
RED	Reducing emissions from deforestation
REDD	Reducing emissions from deforestation and forest degradation in developing countries
RELS	Reference emissions levels
RL	Reference level
SBSTA	Subsidiary Body for Scientific and Technical Advice of the UN Framework Convention on Climate Change
UN	United Nations
UNDP	United Nations Development Programme
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
WGIII	Working Group III of the IPCC: Mitigation of Climate Change

Executive summary

The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD) commissioned this report from the Center for International Forestry Research (CIFOR) to summarize the current state of negotiations towards a decision in Copenhagen, specifically outlining areas of consensus, options for resolving areas where consensus has not yet been reached, and priorities for research to support successful implementation of an international REDD Programme following a decision at the 15th Conference of the Parties (COP) in Copenhagen.

The first section of the report (Chapter 2) summarises recently published data suggesting that forestry-related emissions are in the order of 5.8 Gigatonnes per year and that these emissions may be growing globally. Agriculture continues to be a major driver of deforestation in developing countries, with significant expansion of crop and pasture land on all continents. Expansion of pasture land makes up about two-thirds of the growth of agricultural area. Lands other than forest land are often converted to agriculture, so only part of this expansion is related to deforestation emissions. Nevertheless, expansion of agriculture is the number one cause of deforestation emissions globally. Agricultural expansion is now driven more by agricultural enterprises than by the needs of subsistence farmers and colonisation schemes, as was the case in the past.

Chapter 3 deals with the scope and scale of REDD-plus¹. There is general consensus that REDD-plus activities could form an important part of the mitigation efforts of developing countries. There is also agreement that implementation of these actions should generate so-called ‘co-benefits’ or sustainable development benefits in countries that host REDD-plus activities. There is also agreement that REDD-plus should be based on measurable and verifiable emissions reductions. Finally, there is agreement that REDD-plus should be implemented at the national level, rather than at subnational levels.

Consensus has not yet been reached on whether there should be a primary set of measures for deforestation/degradation, and a secondary set for other forest-based mitigation options. The Bali Action Plan (BAP) refers to actions that promote the ‘enhancement of forest carbon stocks’. It is not clear if this includes forest restoration only on lands already classified as forests, or also forestation of non-forest land. There is a need for definitions of forest degradation, forest conservation, sustainable forest management, and enhancement of carbon stocks. There are two ways of tackling this. First, Parties could attempt to define each individual activity based on a set of unique criteria. A second alternative is to use the frameworks from the IPCC 2003 Good Practice Guidance (GPG) and the 2006 revision of the Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories (2006GL).

Chapter 4 deals with financing and distribution of benefits. There is agreement that an effective financial framework is needed for the provision of financial resources and investment to support enhanced action on mitigation, adaptation and technology cooperation. There is agreement on the need for various sources and options to scale up the generation of new, additional and adequate financial resources. An approach based on a REDD Fund is considered to be more appropriate for capacity building and demonstration (readiness) activities. Market-linked approaches may best be used to scale up implementation of REDD activities. There is agreement that financial resources should be new, additional, adequate, predictable and sustainable. Generation of resources should be based on the principles of equity, common but differentiated responsibilities, and respective capabilities. Parties agree on the need for positive incentives and support for actions under REDD-plus. Thus, there needs to be financial support for policy reform processes and capacity building. There is agreement that governance of a possible financial framework should be under the guidance and authority of the COP.

¹ ‘Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries’. (FCCC/AWGLCA/2009/INF.1)

Parties and Observers have provided ideas and proposals for approaches to the generation of financial resources that include policy approaches, positive incentives, the use of non-market approaches and a combination of market and non-market approaches. There is a range of views on the roles of the public and private sectors in generating financial resources to support enhanced action. Further consideration is required on how public finance could leverage private finance effectively and ensure coherence among different sources of funding. Further consideration is also needed on other principles proposed by Parties, such as the ‘polluter pays’ principle and the principle of ‘historical responsibility’. One approach that may help overcome the current impasse is a novel means of attributing emissions reductions responsibilities according to the proportion of a population that leads a carbon-intense lifestyle. Through this approach, the principle of common but differentiated responsibilities is defined by the emissions of individuals rather than of nations. Further consideration is also needed of ways and means to support implementation of actions under REDD-plus. Parties have proposed a number of approaches, most of which are performance-based (i.e., funds are made available after benchmarks have been reached). There are also a number general considerations of governance and institutional arrangement for managing financial resources and delivery of these that will impact the REDD negotiations. Options for institutional arrangements for implementation of the financial framework include creating new institutions or reforming existing institutions.

Equitable distribution of funds requires particular consideration. The proposals of most Parties and Observers do not offer opportunities for redistribution of benefits and some countries are strongly against it. Thus, the majority of proposals reward historically high emitters and exclude low emitters. The question of equity is partially addressed through expanded activities allowed in a REDD-plus scheme and there are a number of proposals that address how financing could flow to support these activities, most of which are based on a phased approach starting with deforestation and forest degradation, and expanding over time to include enhanced sinks and conservation of forests.

Research could support more efficient and effective investments in national REDD-plus schemes by elucidating the key drivers of deforestation in different national settings in order to help structure the incentive mechanisms so that they effectively alter the economic incentives that promote deforestation and forest degradation. A second area of research should focus on institutional configurations needed to create an enabling environment in different country contexts. Benefit sharing with communities at the forest margin requires particular attention. Property rights (including rights to carbon and ecosystem services) is one area that receives much attention in REDD- and LULUCF²-related analyses. Research could support the development of knowledge on how property rights could play a role in the success of such schemes and how different property rights are, or may be, bundled within different national contexts.

Chapter 5 deals with issues concerning monitoring, reporting and verification (MRV). There are general issues associated with MRV that will have an impact on REDD implementation and MRV issues that are specific to REDD. Concerning the more general MRV issues, Parties agree that measurement and reporting of voluntary actions by developing countries in climate-change mitigation need to include information on the implementation of voluntary mitigation plans, programmes and actions. This should include monitoring reductions in greenhouse gas (GHG) emissions achieved by the action in relation to the national GHG emissions trajectories, the incremental cost of the action, and the sustainable development benefits and co-benefits. In issues specific to a REDD-plus scheme, Parties agree that MRV should take reference emissions and reference levels into consideration. A common methodology should be used for all policy approaches, based on remote sensing and ground verification. MRV will require both robust national forest monitoring systems and *ex-post* verification. There is also agreement that MRV should be based on national forest inventories and unbiased, periodic reviews to assess the application of agreed modalities, including review of data.

Among the outstanding issues, the question of what to monitor must be resolved before the discussion can proceed. Countries could be required to include all five approved carbon pools (aboveground biomass, belowground biomass, soil organic matter, dead wood and litter) in their emissions assessments. Alternatively, countries could be allowed to choose which pools to include and provide

² Land use, land use change and forestry.

evidence of the conservativeness with respect to carbon emissions of their choice. While there is some agreement that the reference level (RL) should be based on historical emissions levels, there is no consensus on what constitutes an RL. Some Parties prefer to use ‘reference emissions levels’ (RELs), while others prefer flexibility to set RLs that are not tied to emissions. There are several options for resolving this issue using either independent expert panels or the Subsidiary Bodies for Scientific and Technical Advice (SBSTA) to endorse RL/RELs. The next issue to resolve is whether monitoring will be based on gross or net emissions. Accounting based on gross emissions would not include carbon stocks in replacement vegetation, which could result in a two-track system based on gross emissions for deforestation and net emissions for other aspects of REDD-plus. Another area for further consideration is whether and how to measure leakage, and whether effects on biodiversity and other impacts or co-benefits should be included in the monitoring systems.

Research can support both the establishment of RL/RELs and carbon accounting. There is very little guidance in the agreed texts coming from the United Nations Framework Convention on Climate Change (UNFCCC) and there is no agreement among experts about how to set an RL/REL. One key area for research to support a REDD-plus programme is in developing methods and approaches for the integration of historical deforestation data with knowledge of deforestation drivers to construct scenarios and provide reasonable estimates of future emissions. With respect to carbon accounting, the 2006GL offers the most up-to-date methods for carbon accounting and covers all cases likely to be encountered in a REDD-plus programme. Unavailability of country- or region-specific factors for these GHG accounting equations is a limitation that could largely be overcome with a concerted research effort, and significant progress could be made within 5 years. Research needs to focus on providing appropriate factors for the equations that could improve project- and national-level carbon accounting, particularly with respect to approaching the specifications of a Tier 2³ approach. Finally, there is a need for research to address methods for linking national and subnational monitoring, estimation and accounting. This multifaceted area of research includes developing approaches for community participation in project-level accounting, developing methods for linking project baselines and performance with national baselines and performance benchmarks, and developing institutional innovations that will be required to implement a national REDD-plus scheme.

Chapter 6 presents issues related to stakeholder involvement. There appears to be no consensus on this issue at the moment and Parties are converging on a compromise that will make reference to the need to engage ‘local people’ in the consultation process of developing REDD projects and the national REDD scheme. This leaves open the possibility of addressing this issue in greater detail when the modalities of the REDD mechanism are decided. There are a number of options available to ensure proper stakeholder involvement in developing national REDD programmes and specific projects. One possibility is that REDD modalities include guiding principles that specifically refer to rights of access to information and consultation in national decision-making processes. These principles would enhance stakeholder participation by inclusion of references to both procedural rights within REDD processes and rights to land and natural resources. One means of avoiding difficult negotiations might be to refer to obligations in human rights instruments such as the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), but the disadvantage is that some Parties are not signatories to such agreements.

One area that may be singled out for specific attention by research is gender equity and equity for indigenous groups and minority groups in REDD-plus projects and programmes. Historically, women have often received few of the benefits associated with tree planting projects and are sometimes prohibited by local custom from planting trees. However, with poor women expected to play a major role in REDD projects, both as producers of carbon and as project designers and implementers, efforts must be made to provide a comprehensive analysis of women and REDD. Another area of research could focus on defining conditions for effective prior informed consent, and indigenous peoples (IPs) and local community (LC) involvement in REDD strategy and project design, implementation and

³ IPCC methods allow for inventories with different levels of complexity, called *Tiers*. IPCC recognizes three tiers. In general, inventories using higher tiers have improved accuracy and reduced uncertainty.

review at national and local levels. Finally, to be able to make informed choices on how to implement REDD at national level, governments will benefit from an assessment of the social implications of different approaches to addressing factors relevant, and sometimes critical, to REDD success. Such an assessment should outline options and costs of addressing rights and tenure issues, mapping and demarcation of land boundaries, integrating pro-poor policies, shifting development priorities and aligning REDD to them.

The final chapter in this report addresses environmental and social co-benefits. Indicative Guidance for demonstration activities, in the BAP, notes that *‘Demonstration activities should be consistent with sustainable forest management, noting, inter alia, the relevant provisions of the United Nations Forum on Forests, the United Nations Convention to Combat Desertification and the Convention on Biological Diversity’*. This sentiment is reflected in the draft text of the Assembly Document in several places and in the negotiation texts of SBSTA. However, there is disagreement on whether and how social (at national and community levels) and environmental co-benefits should be mandated in the design of the international REDD-plus regime. Some favour keeping REDD-plus simple and not encumbering it with additional requirements. Others, favouring a ‘pro-poor’ approach, argue that failure to specifically include co-benefits objectives in REDD-plus design will ensure failure of the programme. It is clear that decisions on the design of the financial mechanism will have significant implications for the generation of environmental and social co-benefits.

There are a number of research needs in the area of understanding co-benefits. First, if co-benefits are to be measured, there is a need for appropriate and internationally accepted indicators of these benefits. Second, there is a need to develop knowledge of how to generate synergies between co-benefits and atmospheric benefits within different country contexts and to understand the tradeoffs between the different objectives. Finally, there is a need to conduct market research on investor and project developer attitudes and concerns regarding the obligations for projects to generate these benefits.

1. Introduction

The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD) is a collaborative partnership between the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP). It was created in response to, and in support of, the United Nations Framework Convention on Climate Change (UNFCCC) decision on reducing emissions from deforestation and forest degradation in developing countries (REDD) at the 13th Conference of the Parties (COP 13) and the Bali Action Plan (BAP). The Programme supports countries to develop capacity to reduce emissions from deforestation and forest degradation and to implement a future REDD mechanism in a post-2012 climate regime. It builds on the convening power of its participating UN agencies, their diverse expertise and vast networks.

UN-REDD works at both the national and global scales, through support mechanisms for country-driven REDD strategies and international consensus-building on REDD processes. The UN-REDD work plan calls for activities to promote increased engagement of stakeholders in the REDD agenda, including raising awareness of REDD among stakeholders, ensuring that non-Annex I decision makers are informed and engaged. To that end, UN-REDD commissioned this report from the Center for International Forestry Research (CIFOR) to summarise the current state of negotiations leading to a decision in Copenhagen, specifically outlining areas of consensus in the negotiations, options for resolving areas where consensus has not yet been reached, and priorities for research to support successful implementation of an international REDD Programme.

2. Regional context: deforestation rates, drivers and trends

The Forestry chapter (Chapter 9) of the *Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*⁴ indicates that at the global scale, tropical deforestation is the major factor responsible for emissions in the forestry sector (5.8 Gt y⁻¹) and that these emissions **may be increasing**. Estimates differ with respect to the land use types that are included in the estimate and in the use of gross fluxes versus the net carbon balance, among other variables. This leads to difficulties in setting an acceptable emissions baseline for the forestry sector globally⁵. Thus, the report gives a range of estimates of carbon exchange between forests and the atmosphere in its Table 9.2 (reproduced as Table 1 herein). It is important to note that because of differences in methods and scope of the different studies, the values are not directly comparable between studies and, therefore, the table should be understood as presenting samples of reported results only.

Emissions from tropical deforestation remain uncertain and hotly debated. Several regional or continent-scale estimates of the CO₂ source or sink strength suggest greater sinks or smaller sources than bottom-up estimates based on analysis of forest inventories and remote sensing of land cover changes⁶. Expansion of agriculture is the number one cause of deforestation emissions globally and recently there has been a shift in drivers such that agricultural expansion is driven more by agricultural enterprises than by the needs of subsistence farmers and colonisation schemes, as in the past⁷. Figure 1 shows a regional breakdown of the drivers

⁴ Nabuurs, G.J., Masera, O., Andrasko, K., Benitez-Ponce, P., Boer, R., Dutschke, M., Elsiddig, E., Ford-Robertson, J., Frumhoff, P., Karjalainen, T. *et al.* 2007 Forestry. In: Metz, B., Davidson, O.R., Bosch, P.R., Dave, R. and Meyer, L.A. (eds.) *Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, 541–584. Cambridge University Press, Cambridge, UK and New York, NY.

⁵ *Ibid.*

⁶ *Ibid.*

⁷ Rudel, T.K. 2007 Changing agents of deforestation: from state-initiated to enterprise driven processes 1970–2000. *Land Use Policy* 24: 35–41.

of deforestation⁸. While tropical land use change is most often associated with agriculture, significant emissions are also related to wood extraction⁹.

Table 1. Reproduction of IPCC WGIII Table 9.2 (footnotes omitted): Selected estimates of carbon exchange of forests and other terrestrial vegetation with the atmosphere (in Mt CO₂ y⁻¹)

Region	Annual Carbon Flux based on international statistics UN-ECE, 2000 ¹⁰	Annual Carbon Flux during 1990s	
		Based on inversion of atmospheric transport models	Based on land observations
OECD North America		1,833 ± 2,200	0 ± 1,100
Separately: Canada	340	2,090 ± 3,337	293 ± 733
USA	610		
OECD Pacific	224		0 ± 733
Europe	316	495 ± 752	0 ± 733
			513
Countries in Transition	1,726	3,777 ± 3447	1,100 ± 2,933
Separately: Russia	1,572	4767 ± 2933	1,181 ± 1,588
Northern Africa		623 ± 3,593	1,907 ± 469
Sub-Saharan Africa			-576 ± 235
			-440 ± 110
			-1,283 ± 733
		-2,310 ± 3887	-1,617 ± 972
Caribbean, Central and South America			-1,577 ± 733
			-2,750 ± 1,100
			0 ± 733
Developing countries of South and East Asia and Middle East		-2,493 ± 2,713	-3,997 ± 1,833
			-1,734 ± 550
			-1,283 ± 550
Separately: China		2,273 ± 2,420	-110 ± 733
			128 ± 95
			268
Global total		4,767 ± 5,500	-7,993 ± 2,933
		2,567 ± 2933	-3,300 ± 7,700
		4,913	-4,000
		9,516	-5,800
			-8,485
Annex I (excl. Russia)			1,300

⁸ Project Catalyst 2009 Towards the inclusion of forest-based mitigation in a global climate agreement (Working Draft). <http://www.project-catalyst.info/Publications/Working%20Group%20papers/Towards%20the%20inclusion%20of%20forest-based%20mitigation%20in%20a%20global%20climate%20agreement%2014%20May%2009..pdf> (21 Sep. 2009).

⁹ Kanninen, M., Murdiyarso, D., Seymour, F., Angelsen, A., Wunder, S. and German, L. 2007 Do Trees Grow on Money? The implications of deforestation research for policies to promote REDD. CIFOR, Bogor, Indonesia.

¹⁰ UN-ECE/FAO, 2000: Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand (industrialized temperate/boreal countries), UN-ECE/FAO Contribution to the Global Forest Resources Assessment 2000. United Nations, New York, NY, USA and Geneva, Switzerland. *Geneva Timber and Forest Study Papers*, 17, 445 pp.

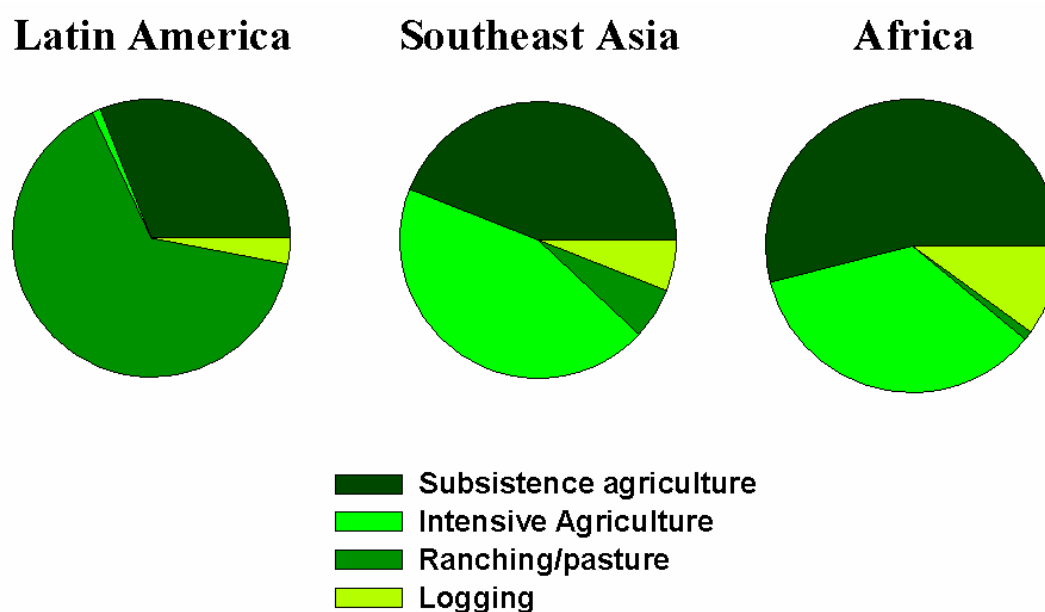


Figure 1. Regional breakdown of drivers of deforestation¹¹.

Emissions from land use change continue to grow as areas of crop and pasture land increase. Agricultural land occupied 49.7 M km² in 2005¹², 70% of which was pasture. Since 1965, agricultural land has increased by 4.7 M km², primarily in developing countries (Figure 2). Pasture land accounts for two-thirds of the increase, while arable and permanent croplands account for the other third. Agricultural land area has decreased in the developed world by around 2% (Table 2).

Since 1965, land under row crops and permanent crops has increased in Sub-Saharan Africa (by 37%), West Asia and North Africa (28%), East, South and South East Asia (23%), Latin America and the Caribbean (48%) and Oceania (32%). Recent trends suggest that land area for cropping is levelling off only in Latin America. Likewise, the area under meadow and pasture is increasing in West Asia and North Africa (40%), East, South and South East Asia (24%), Latin America and the Caribbean (48%) and Oceania (32%). Short-term trends suggest that growth of pasture area may be levelling off in all regions, with the exception of Sub-Saharan Africa.

¹¹ *Op. cit.* Project Catalyst (2009).

¹² FAOSTAT (2008).

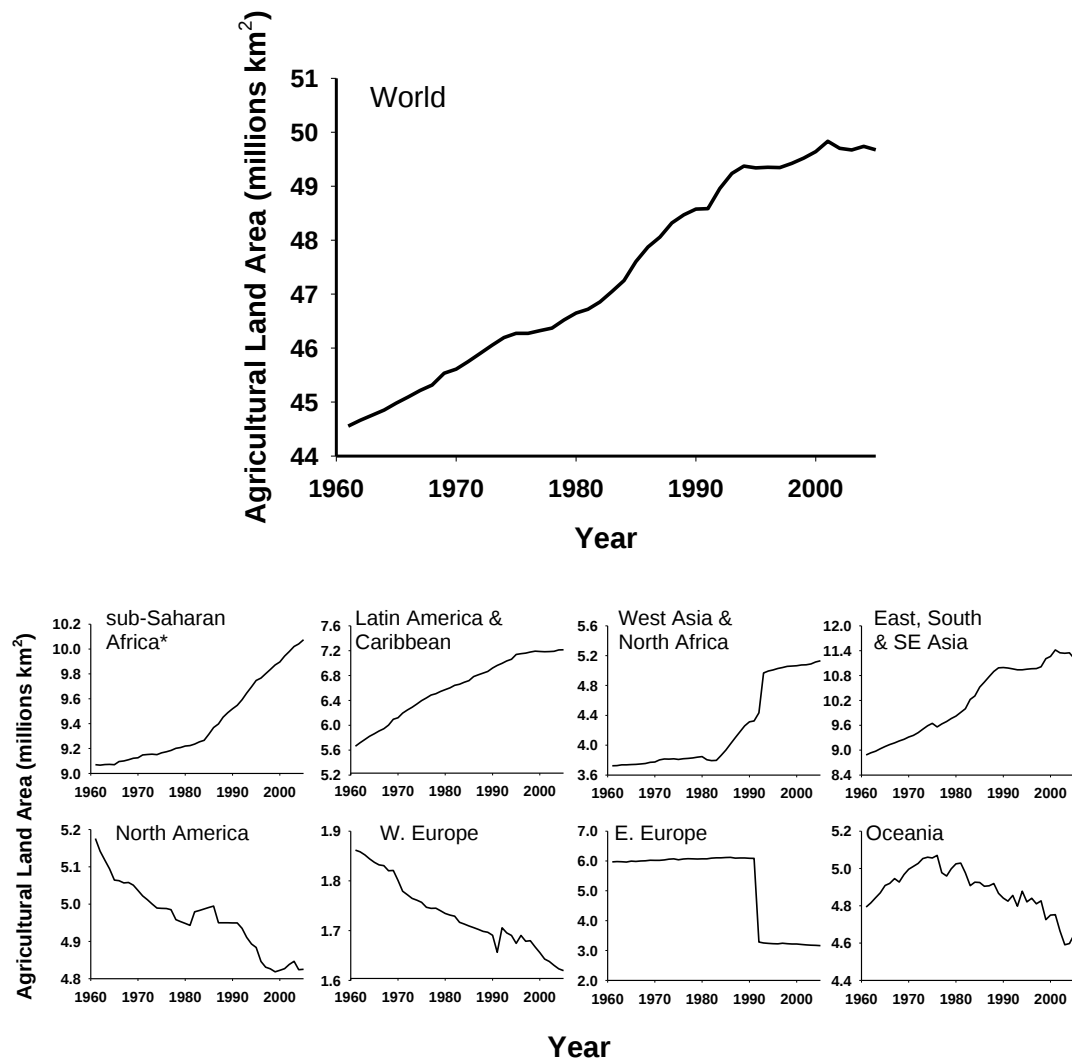


Figure 2. Global and regional land use change to agricultural land (crop and pasture land)¹³.

*Ethiopia was not included in the Africa panel as there were significant reporting discrepancies following the separation of Eritrea.

¹³ *Ibid.*

Table 2. Regional summary of the expansion of land areas under agriculture¹⁴

Region	Arable land and permanent crops				Pasture and meadow			
	Area (Mha)		Difference		Area (Mha)		Difference	
	1961	2005	Mha	%	1961	2005	Mha	%
Latin America and Caribbean	103	165	62	60	463	557	93	20
Sub-Saharan Africa	135	191	57	42	714	712	-2	0
W. Asia and N. Africa	74	97	23	32	299	416	117	39
South Asia	213	231	18	8	96	78	-17	-18
East Asia	116	167	51	44	379	529	150	40
South East Asia	68	98	30	43	16	17	1	7
Europe	391	296	-95	-24	392	182	-210	-54
North America	235	229	-6	-3	282	253	-29	-10
Oceania	35	55	20	57	444	410	-35	-8
World	1370	1562	192	14	3085	3406	320	10

Table 3 contains a summary of the top 30 countries for deforestation emissions in 2000 from the Climate Analysis Indicators Tool (CAIT) database¹⁵, with deforestation area estimates from the FAO Forest Resources Assessment (FRA) 2005¹⁶. Brazil and Indonesia combined account for more than 50% of the global emissions. Congo Basin countries represent much lower proportions of the global total. Among the top emitters, there are great differences in technical capacity to undertake a REDD scheme¹⁷.

Table 4 presents a regional summary of the CAIT and FRA datasets¹⁸. East, South and South East Asia have the highest share of land use change and forestry (LUCF) emissions, despite the expansion of forest area. Agricultural expansion in these regions has slowed since the 1980s (Figure 1). The Latin America and Caribbean region has the largest area loss, but only about half the emissions of Asia. Sub-Saharan Africa has a lower share of emissions in part because large deforestation occurs in dry forest areas like Sudan where carbon densities are low. However, there are also significant LULUCF emissions in high carbon density areas like the Congo Basin. Percentagewise the loss of forest area is largest in Central America and the Caribbean, followed closely by Africa and South America. In addition to the groupings listed above, according to the CAIT database, the least developed countries (LDCs) were responsible for over 20% of the LUCF emissions in 2000 (1544 Mt CO₂)¹⁹.

Finally, the summary in Table 5 presents other related data reported in various sources. These data help define the magnitude of emissions and forest loss to provide an understanding of the potential for a REDD scheme in developing countries. **They suggest that forestry related emissions may be growing globally, and that efforts to curb forestry related emissions in these countries could have a significant impact on the atmosphere.**

¹⁴ Table is based on data in FAOSTAT (www.faostat.org) (2009).

¹⁵ The Climate Analysis Indicators Tool (CAIT) of the World Resources Institute, Washington, DC.

¹⁶ FAO 2006 Global Forest Resources Assessment 2005, Main Report. Progress Towards Sustainable Forest Management. FAO Forestry Paper 147. Rome.

¹⁷ Boucher, D. 2008 Out of the Woods: A Realistic Role for Tropical Forests in Curbing Global Warming. Union of Concerned Scientists, Cambridge, MA.

¹⁸ Trines, E. 2007 Investment Flows and Finance Schemes in the Forestry Sector, with Particular Reference to Developing Countries' Needs: A Report for the Secretariat of the UNFCCC.

¹⁹ *Op. cit.* Trines (2007).

Table 3. Land use change emissions by country^{20,21}

Position	Country	Mt CO ₂ in 2000*	% of global LUCF emissions in 2000*	Forest Area in 2000 (×1000 ha)	Annual change rate 2000–2005	
					(×1000 ha)	(%)
		CAIT	CAIT	FAO	FAO	FAO
1	Indonesia	2,563.1	33.6	97.85	–1,871	–2.0
2	Brazil	1,372.1	18.0	493.21	–3,103	–0.6
3	Malaysia	698.9	9.2	21.59	–140	–0.7
4	Myanmar	425.4	5.6	34.55	–466	–1.4
5	DR Congo	317.3	4.2	135.21	–319	–0.2
6	Zambia	235.5	3.1	44.68	–445	–1.0
7	Nigeria	194.8	2.6	13.14	–410	–3.3
8	Peru	187.2	2.5	69.21	–94	–0.1
9	Papua New Guinea	146.0	1.9	30.13	–139	–0.5
10	Venezuela	144.1	1.9	49.15	–288	–0.6
11	Nepal	123.5	1.6	3.90	–53	–1.4
12	Colombia	106.1	1.4	60.96	–47	–0.1
13	Mexico	96.8	1.3	65.54	–260	–0.4
14	Philippines	94.9	1.3	7.95	–157	–2.1
15	Cote d'Ivoire	91.1	1.2	10.33	15	0.1
16	Bolivia	83.8	1.1	60.09	–270	–0.5
17	Cameroon	77.1	1.0	22.35	–220	–1.0
18	Canada	64.5	0.9	310.13	0	0
19	Madagascar	60.2	0.8	13.02	–37	–0.3
20	Ecuador	58.9	0.8	11.84	–198	–1.7
21	Guatemala	56.6	0.7	4.21	–54	–1.3
22	Cambodia	56.1	0.7	11.54	–219	–2.0
23	Argentina	55.1	0.7	33.77	–150	–0.4
24	Russian Federation	54.2	0.7	809.27	–96	0.0
25	Nicaragua	53.7	0.7	5.54	–70	–1.3
26	Thailand	47.6	0.6	14.81	–59	–0.4
27	Panama	47.5	0.6	4.31	–3	–0.1
28	Zimbabwe	47.4	0.6	19.11	–313	–1.7
29	Liberia	39.4	0.5	3.46	–60	–1.8
30	Uganda	39.3	0.5	4.06	–86	–2.2
Total		7,638.2				

²⁰ *Op. cit.* Trines (2007).²¹ *Data source:* Houghton, R.A. 2003: 'Revised estimates of the annual net flux of carbon to the atmosphere from changes in land use and land management 1850–2000'. *Tellus B* 55B: 378–390.

Table 4. Land use change emissions by region

Country	Mt CO ₂ in 2000	% of global LUCF emissions in 2000	Forest area in 2000 (×1000 ha)	Annual change rate 2000–2005	
				(×1000 ha)	(%)
<i>Data source</i>	CAIT	CAIT	FAO	FAO	FAO
Asia	3,958	52	566,562	1,003	0.18
South America	2,054	27	852,796	–4,251	–0.50
Central America & Caribbean	303	4	29,543*	–231*	
Caribbean			5,706	54	0.9
Central America			23,837	–285	–1.2
Oceania	154	2	208,034	–356	–0.17
Sub-Saharan Africa	1,399	18			
Middle East & N. Africa	52	0.7			
Africa			655,613	–4,040	–0.62
Europe	33	0.4	998,091	661	0.07
North America	–338	–4	677,971	–101	–
World	7,619	100	3,988,610	–7,317	–0.18

* Calculated as the sum of FAO regions ‘Caribbean’ and ‘Central America’.

Table 5. Other related data on forests²²

Source of data	Period	Parameter/source of emissions/removals	Quantity (either in ha or in net emissions)
MEA 2005	2000–2050	Forest area:	
		Industrialised countries	+ 60–230 million ha
		Developing countries	– 200–490 million ha
FAO 2006	2005	Global forest cover	3,952 million ha
	2000–2005	Deforestation	12.9 million ha
	2000–2005	Net loss of forest area	7.3 million ha y ⁻¹ (equalling 4000 Mt CO ₂ e y ⁻¹)
	1990–2000	Deforestation	13.1 million ha
	1990–2000	Net loss of forest area	8.9 million ha y ⁻¹
WG III / AR4 chapter 9	1990–2000	Forest degradation	2.4 million ha y ⁻¹
WG III / AR4 chapter 11	2004	Global emissions from forestry (excluding peat and other bog fires)	5.8 Gt CO ₂ e y ⁻¹
	2030	Global emissions from forestry (excluding peat and other bog fires). This estimate is the same as for 2004 because no baseline emissions for 2030 from the forestry sector are reported	5.8 Gt CO ₂ e y ⁻¹

3. Scope and scale of REDD

In 2005, Parties to the UNFCCC began discussions on the scope of REDD at the Montreal COP. Discussions were initially limited to reducing emissions from deforestation (RED), but expanded to include forest degradation (REDD). As part of the Bali Action Plan²³ and the Bali Road Map²⁴, the discussion broadened further in 2007 and the parties to the UNFCCC called for: ‘Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries’. This expanded discussion has been labelled ‘REDD plus’ in the current discussions.

²² *Op. cit.* Trines (2007).

²³ UNFCCC Decision 1/CP.13.

²⁴ UNFCCC Decisions 2–4/CP.13, Decision 2/CP.13 being dedicated to REDD.

3.1 Consensus

Considerable progress has been made in the UNFCCC negotiations and there is consensus on a number of areas regarding the scope of a REDD-plus scheme²⁵. The immediate priorities are deforestation and forest degradation and there is consensus that a future REDD mechanism could be implemented in a phased approach that could perhaps integrate conservation and carbon stock enhancement activities at later stages²⁶. There are also proposals that REDD should be incorporated into a broader agriculture, forestry and other land use (AFOLU) programme. There is agreement that only developing countries can participate in REDD, and participation should be on a voluntary basis.

In March 2009, the chair of the Ad Hoc Working Group on Long-term Collaborative Action (AWG-LCA) prepared a summary of the state of consideration by the AWG-LCA of Parties' ideas and proposals on all the elements of the Bali Action Plan (BAP)²⁷. The document outlined the following points of consensus regarding para. 1 (b) (iii) (hereafter referred to as 'REDD-plus'):

- Parties concur that REDD-plus could form an important part of the mitigation efforts of those developing countries that have mitigation potential in this area.
- There is convergence on the view that as part of the implementation of these actions, co-benefits, broad participation and sustainable forest management (consistent with long-term sustainable land management) should be promoted, and the issues of permanence and leakage should be addressed.
- There is also convergence on the view that policy approaches should be performance based, so that support for implementation is based on results (i.e., based on measurable and verifiable emissions reductions).
- There is consensus that the REDD-plus mechanism should aim to be implemented at the national level, rather than at subnational levels, taking into account national circumstances. In this regard, further consideration is needed on the extent to which subnational approaches should be allowed in the initial phases of implementation.

3.2 Unresolved issues and options

As much as there has been a significant convergence of views over the scope of REDD during the past year, there are a number of outstanding issues that have implications for both the effectiveness of the REDD-plus scheme and the participation of countries. A report by the Meridian Institute²⁸ notes several areas where consensus has not yet been reached:

- Whether there should be a primary set of measures for deforestation/degradation, and a secondary set for other forest-based mitigation options.
- Whether Parties intended the reference to 'enhancement of forest carbon stocks' in the BAP to include forest restoration only on lands already classified as forests, or also forestation of non-forest land. In the latter case, double counting with eligible Clean Development Mechanism (CDM) afforestation/reforestation projects activities must be avoided.
- Whether the legal nature of actions (voluntary and non-binding or binding) should be different for different groups of countries (these would be identified according to a set of criteria reflecting countries' economic development and capacity).

²⁵ FCCC/AWGLCA/2009/4 (Part II).

²⁶ Parker, C., Mitchell, A., Trivendi, M. and Madras, N. 2009 The Little REDD+ Book. The Global Canopy Foundation, Oxford, UK.

²⁷ FCCC/AWGLCA/2009/4 (Part II).

²⁸ Angelsen, A., Brown, S., Loisel, C., Peskett, L., Streck, C. and Zarin, D. 2009 Reducing Emissions from Deforestation and Forest Degradation (REDD): An Options Assessment Report. The Meridian Institute. 116p. (<http://www.REDD-OAR.org>).

Among the key areas requiring resolution for a REDD-plus scheme are the definitions of forest degradation, forest conservation, sustainable forest management, and enhancement of carbon stocks. The Meridian Institute report suggests that there are two ways of tackling this problem. First, Parties could attempt to define each individual activity based on a variety of unique criteria, taking into account national circumstances. However, even experts do not agree on defining forest degradation; thus, it seems that it would be impractical to attempt to come to an agreement on definitions of all potential activities included under a REDD-plus mechanism as described in the BAP.

A second alternative is to use the IPCC 2003 Good Practice Guidance (GPG) and the 2006 revision of the IPCC Guidelines for National Greenhouse Gas Inventories (2006GL) framework²⁹. The 2006 revision of this framework has yet to be accepted by Parties. This framework gives approaches and methods for accounting for changes in carbon stocks from changes in land use. Deforestation is covered in the other land use chapters as other land converted to that particular land use (e.g., land converted to cropland). Afforestation and reforestation are covered in the Land Converted to Forest Land subsection of the Forest Land chapter. Degradation, forest conservation, sustainable forest management, and enhancement of carbon stocks activities other than deforestation that are mentioned in the BAP are covered in the Forest Land Remaining Forest Land subsection of the 2006GL.

4 Financing and benefits distribution

Financing and benefits distribution has been a major area of discussion in the negotiations and remains a key area where resolution is needed to move forward. Whatever funding mechanism is adopted, it will probably have to be integrated into the overall financing provided under the UNFCCC as part of the agreement that will come in Copenhagen.

4.1 Consensus

Parties concur that an effective financial framework is needed for the provision of financial resources and investment to support enhanced action on mitigation, adaptation and technology cooperation. This framework would require clear and focused mandates and responsibilities, and would help in the planning, coordination, monitoring and review of progress of financial support provided for enhanced action, in a measurable, reportable and verifiable manner, in the case of mitigation activities.

International REDD finance should complement domestic funding by developing countries in accordance with their respective capabilities, taking into account pre-existing national efforts and expenditure on sustainable forest management, forest protection and forest inventories.

There is convergence on the need for various sources and options to scale up the generation of new, additional and adequate financial resources. An approach based on a REDD Fund is considered to be more appropriate for capacity building and demonstration (readiness) activities. Market-linked approaches may best be used to scale up implementation of REDD activities. Markets and market-linked approaches are considered to provide more consistent and greater scale for the long-term financing of a REDD-plus programme³⁰.

There is also convergence among Parties on the underlying principles for the generation of financial resources, namely³¹:

- Resources should be new and additional, adequate, predictable and sustainable;
- Generation of resources should be based on the principles of equity and common but differentiated responsibilities and respective capabilities. What constitutes equity is less clear, but it appears at this point that the consensus is around the possibility of all

²⁹ Elisach, J. 2008 Climate Change: Financing Global Forests. UK Stationary Office, London, UK.

³⁰ *Op. cit.* Parker *et al.* (2009).

³¹ FCCC/AWGLCA/2009/4 (Part II).

countries being able to participate, not just the rainforest countries that currently have high emissions, and it does not appear to refer to subnational equity issues;

- Parties are converging on the view that positive incentives and support should be provided for actions under REDD-plus. Thus, there needs to be financial support for policy reform processes and capacity building. There is a lack of convergence on how these actions should be supported (see below);
- On the subject of which elements should receive support, there is convergence on supporting readiness activities (including capacity building, institutional strengthening, technical assistance, improving governance and enforcement), as well as on initiating national programmes and demonstration projects.

There is convergence among Parties that the overall governance of a possible financial framework should:

- Be under the guidance and authority of the COP;
- Ensure full transparency, efficiency, effectiveness, openness, and the equitable and balanced representation of all Parties;
- Provide coherence and coordination among various sources of financing.

There is convergence among Parties on the principles for delivery of new and additional financial resources, to guide access to these resources and their disbursement. It is unclear how these principles would apply in practice to REDD-plus, particularly in so-called ‘High Forest, Low Deforestation’ (HFLD) countries, countries with low forest cover or countries that have predominantly dry forests with low carbon densities. The contradiction comes from the consensus among parties that the mechanism must be based on actual emissions reductions (more on this below in the discussion related to redistribution of benefits). These principles include³²:

- All developing countries should be eligible to access financial resources, with emphasis on the needs of vulnerable countries in the context of adaptation;
- The delivery of resources should preferably take a programmatic approach, but use a project-based approach where national circumstances require it;
- The delivery of resources should be measurable, reportable and verifiable;
- Improved access should be ensured (with direct access as a proposed option).

4.2 Unresolved issues and options

Parties and Observers have provided ideas and proposals for approaches to the generation of financial resources for REDD-plus. These comprise policy approaches, positive incentives, the use of non-market approaches, and a combination of market and non-market approaches. Proposals include the following options for generating new and additional financial resources³³:

- An assessed contribution from developed country Parties as a percentage of their gross national product or gross domestic product;
- An assessed contribution from all Parties, except LDCs, based on a predefined set of criteria, including GHG emissions, respective capacity and population;
- Auctioning of assigned amounts or emission allowances at the international and/or domestic level;

³² FCCC/AWGLCA/2009/4 (Part II).

³³ *Ibid.*

- A uniform global levy on CO₂ emissions, with exemption for LDCs;
- Levies on emissions from international aviation and maritime transport;
- A tax on air travel;
- A share of proceeds from market-based mechanisms under the Kyoto Protocol;
- A global levy on international monetary transactions.

There is a range of views on the roles of the public and private sectors in generating financial resources to support enhanced action. Further consideration is required on how public finance could leverage private finance effectively and ensure coherence among different sources of funding. Further clarification is also needed on the subject of enabling environments to foster investment and financial flows, including the issue of support needed to establish enabling environments in developing countries.

Market-linked approaches can use revenues generated through the auctioning of allowances or from emissions trading within a dual market. In an auctioning process, emissions reductions from REDD would be additional to existing developed country commitments. The percentage of allowances and scale of auctions (national, multinational, international) could be agreed by the COP. Alternatively, dual markets could use emissions reductions from REDD to meet existing Annex I commitments or could require that emissions reductions be additional to existing targets. Both of these approaches would require that emissions reductions from REDD not be fungible with other types of emissions reductions³⁴.

Further consideration is needed on other principles proposed by Parties, such as the polluter pays principle and the principle of historical responsibility. One approach that may help overcome the current impasse is a novel means of attributing emissions reductions responsibilities according to the proportion of a population that leads a carbon-intense lifestyle³⁵. Through this approach, the principle of common but differentiated responsibilities is defined by the emissions of individuals rather than of nations.

Further consideration is also needed of ways and means to support implementation of actions under REDD-plus. Parties have proposed a number of approaches:

- A performance-based approach that rewards emission reductions, supported by non-market positive incentives;
- A performance-based approach that rewards successful actions, supported by non-market positive incentives (e.g., a Compensated Successful Efforts approach^{36,37});
- Financial support provided through a comprehensive set of modalities and mechanisms, including an increased level of official development assistance, loan funding and non-repayable financial flows, assessed contributions by developed countries and carbon credits from the global carbon compliance market;
- Financial support provided to fund alternative, sustainable development plans that address the drivers of deforestation. The payments would be based on the cost of implementing these development plans³⁸;

³⁴ *Op cit.* Parker *et al.* (2009).

³⁵ Chakravarty, S., Chikkatur, A., deConinck, H., Pacala, S., Socolow, R. and Tavoni, M. 2009 Sharing global CO₂ emission reductions among one billion high emitters. *Proceedings of the National Academy of Sciences of the United States of America* 106: 11884–11888.

³⁶ Pirard, R., Combes-Motel, P. and Combes, J-L. 2009 Providing financial support where action takes place: ‘Compensated Successful Efforts’ for REDD. *Climate Change: Global Risks, Challenges and Decisions*. IOP Conference Series: Earth and Environmental Science, vol. 6: 152002 (doi:10.1088/1755-1307/6/5/152002).

³⁷ Pirard, R. 2008 *The Fight against Deforestation (REDD): Economic Implications of Market-Based Funding*. *Idées Pour le Debat* (vol. 20). Institut du Développement Durable et des Relations Internationales, Paris, France.

³⁸ The Prince’s Rainforests Project 2009 *An Emergency Package for Tropical Forests*. The Prince’s Rainforests Project, London, UK.

- A two-track approach that includes support provided by market-based mechanisms for deforestation and forest degradation, and fund-based support for a broad range of land use activities such as conservation;
- An overall voluntary approach, separate from the Clean Development Mechanism, to support implementation of actions under REDD-plus in three steps: (1) promoting readiness and capacity building; (2) expanding implementation under the Convention through non-compliance and voluntary market instruments; and (3) introducing compliance-based market mechanisms;
- A performance-based approach supported by diverse funding sources where emissions reductions could be allocated in international markets.

There are also a number of general considerations of governance and institutional arrangement for managing financial resources and delivery of these that will impact the REDD negotiations. Options for institutional arrangements for implementation of the financial framework include the following:

- Creating new institutional arrangements, including funds;
- Making efficient and effective use of current institutional arrangements, including funds;
- Reforming the existing institutional arrangements, including funds, such as the Global Environment Facility, an operating entity of the financial mechanism of the Convention, and creating new institutional arrangements including funds, if needed.
- Parties have proposed the creation of a single umbrella body, as an institutional arrangement under the authority and guidance of the COP, to coordinate the activities of different specialised bodies in providing financial resources including resources for REDD actions.
- Further consideration is also required of proposed institutional arrangements of specialised national and international funds and mechanisms to generate, manage and deliver financial resources from private and public sources for mitigation, including REDD-plus actions.

Equitable distribution of funds is another area that requires further consideration. The proposals of most Parties and Observers do not offer opportunities for redistribution of benefits and some countries are strongly against it. Thus, the majority of proposals reward historically high emitters and exclude low emitters³⁹. A minority of proposals specify a distribution mechanism that redistributes funds from the revenues generated from emissions reductions to HFLD countries that would otherwise not benefit from REDD. The proposed redistribution mechanisms follow two approaches:

- A global historical baseline is used to allocate a proportion of benefits to countries other than those generating emissions reductions.
- A fixed portion of revenues is withheld from countries generating emissions reductions and redistributed to HFLD countries.

Some proposals support a stabilisation fund that would use a revenue stream, separate from the financing of emissions reductions, to support conservation activities. Revenues withheld using a stabilisation mechanism could also be held in a buffer to address permanence issues. Redistribution of revenues from emissions reductions to reward HFLD countries could be supported by a stabilisation fund.

Others have proposed alternative models for equitable distribution of funds⁴⁰:

³⁹ *Op. cit.* Parker *et al.* (2009).

⁴⁰ *Op. cit.* The Prince's Rainforests Project (2009).

- Transferring funds directly to national government accounts (e.g., UNFCCC Adaptation Fund).
- Establishing special agencies or accounts in-country to handle funds (e.g., Brazil's Amazon Fund, USA's Millennium Challenge Accounts).
- Implementing projects through multilateral and bilateral aid structures, such as the World Bank or UN agencies (e.g., Global Environment Facility, the Multilateral Fund for the Implementation of the Montreal Protocol).
- Disbursing funds directly to multiple recipients in-country, including governments, NGOs and the private sector (e.g., The Global Fund to Fight Aids, Tuberculosis and Malaria).

There are a number of proposals around how financing could flow to support REDD schemes. The Meridian Institute report⁴¹ indicates that US\$ 10 billion per year could be usefully used internationally to support REDD actions. In accordance with national REDD implementation plans, these funds could usefully support a wide range of activities, including:

- Land tenure reforms;
- Forest management planning;
- Reduced impact logging;
- Expansion of forest reserves;
- Wildfire prevention;
- Forest law enforcement;
- Modernisation of agriculture and the wood energy supply chain; and
- Payments for environmental services to indigenous peoples, local communities, farmers and/or municipalities.

The Meridian Institute report also proposed a three-phase approach (Table 6) that is widely appreciated—several Parties have endorsed the idea of a phased approach. Overlap between phases within countries may be necessary and even desirable as the boundaries between the phases are transitions, not clear breaks. Phase 1 finance will be limited in scale and can be contributed on the basis of voluntary pledges from countries bilaterally or via multilateral organisations. As soon as the financial instrument for Phase 2 funding has been established, the international funding for capacity building could be converted into a window of the Phase 2 instrument. Capacity building funds would remain separate as they cannot be tied to particular performance or results, but they could be administered jointly with other Phase 2 funds.

In particular, for the transition from Phase 2 to Phase 3, modalities are required to ensure that there is no double counting (i.e., no Phase 3 REDD units should be earned for emission reductions or enhanced removals achieved during Phase 2), and that there are no incentives to delay action (i.e., reference levels for Phase 3 should allow crediting for the results of the continuation of policies and measures undertaken during Phase 2).

There are two options for delivery of international finance in Phase 2. In the first, disbursement would be made according to approved national REDD budgets. Countries would translate their national REDD strategies into national REDD implementation plans that would serve as a request for international funding. National REDD implementation plans would cover a 5 year period and contain key elements like identification of priority actions and associated funding needs, an implementation schedule, a budget that identifies expenditures eligible for international financing, performance benchmarks related to

⁴¹ *Op. cit.* Angelsen *et al.* (2009).

administration, activities, expected impacts, and a monitoring plan. The second option is that disbursement be made according to national REDD board decisions. Under this option, international funding would be disbursed to a nationally administered fund. There would be no need for *ex-ante* identification of spending decisions. REDD funding allocation would be decided on a regular basis by a national REDD board that would commit to transparency, effective stakeholder participation, and fiduciary responsibility.

Table 6. Phasing options in Meridian Institute Report for REDD actions and corresponding financial instruments⁴²

Phase	Scope	International financial instrument
Phase 1	National REDD strategy development, capacity building, institutional strengthening. Demonstration activities. Strategy development elements include, <i>inter alia</i> , reference level and MRV assessments, and participation of IPs and LCs.	Voluntary contributions. <i>Eligibility:</i> Demonstrated cross-sectoral commitment to REDD strategy development within national government. <i>Examples:</i> Forest Carbon Partnership Facility of the World Bank (FCPF) and UN-REDD ‘readiness’ funding.
Phase 2	Implementation of National REDD Strategy PAMs. Strategy implementation elements include, <i>inter alia</i> , reference level setting, improvement of MRV, and participation of IPs and LCs.	Global facility (unitary fund, or clearinghouse that records eligible bilateral and multilateral contributions relative to binding commitments). <i>Eligibility:</i> Demonstrated cross-sectoral commitment to REDD strategy implementation within the national government. Continued access dependent upon performance, including proxy indicators of emission reductions and/or enhanced removals. <i>Example:</i> Brazil’s Amazon Fund.
Phase 3	Quantified changes in GHG emissions and/or removals.	Transition from global facility to integration with compliance markets. <i>Eligibility:</i> Compliance-grade MRV and emissions/removals accounting relative to agreed reference levels.

The annual level of funding could be increased or decreased every year by a decision of the global facility after consideration of an annual national REDD report. National caps could be periodically adjusted taking into account a number of criteria, including: performance, accountability, continuous improvement of monitoring, reporting and verification (MRV), domestic co-investment, benefits for indigenous peoples and local communities, and ecological co-benefits.

For Phase 3, a REDD financing instrument would provide direct rewards for provision of climate benefits based on a GHG metric. A REDD mechanism could foresee the conversion of emissions reductions or enhanced removals from REDD-plus actions into REDD units that could then be sold to industries or governments for compliance with quantified emission reduction obligations. Alternatively, the compensation mechanism could rely on direct, non-market payments for emission reductions/removals.

⁴² *Op. cit.* Angelsen *et al.* (2009).

A direct payment mechanism could rely on the institutional arrangements described for Phase 2. *Ex-ante* disbursement based on criteria, such as forest coverage or national REDD implementation plans, would be replaced by disbursement against emission reductions/enhanced removals.

Two carbon market design options are also possible within Phase 3: emission reductions and enhancement of removals could be measured against an agreed reference level and REDD units could be issued *ex-post* after the environmental benefits have accrued and been measured and verified (*Option 1 – Sectoral Baseline and Credit*). Alternatively, REDD units could be issued *ex-ante* based on an agreed reference level. A country could sell REDD units to raise funds or allocate units to subnational actors. At the end of the crediting period, the country would be liable to match emissions from deforestation and forest degradation with REDD units (*Option 2 – Sectoral Cap and Trade*). Option 1 is easier to implement and does not require the maintenance of registries or the management of an allowance asset. It also limits a country's liabilities, as there is no compliance requirement at the end of the commitment period. The disadvantage is that it does not give countries an asset and collateral against which they can raise finance. The ability to manage the asset comes with a liability to manage compliance.

4.3 Research needs

Significant drivers of deforestation and forest degradation originate from outside the forest sector. Effective REDD policies will therefore need to account for these drivers and accommodate extrasectoral policies. Research could support more efficient and effective investments in national REDD-plus schemes by elucidating the key drivers of deforestation in different national settings in order to help structure the incentive mechanisms so that they effectively alter the economic incentives that currently promote deforestation and forest degradation.

A second area of research needs to focus on institutional configurations needed to create an enabling environment in different country contexts. Producing carbon emissions reductions, reporting and verifying these reductions, and setting up institutional structures for administering such a programme and linking local actions with an international mechanism all have costs. Recent analyses have focused on opportunity costs^{43,44}, but little attention has been paid to institutional and other transactions costs. Yet, the costs of establishing a benefit sharing system and managing initial transactions may be high, and must be met through equitable sharing of the financial flows generated by an international REDD-plus mechanism. Research is needed to support rapid reductions in transactions costs, to increase efficiency of intermediary institutions and ensure equitable distribution of benefits. Comparisons of current experiences between compliance and voluntary markets with respect to transaction costs, meeting emissions reductions objectives, monitoring and verification, etc., may be useful. Inherent in this research agenda is the need to consider appropriate means of integrating public and private finance to better ensure coherence among different sources of funding.

In particular, benefit sharing with communities at the forest margin requires attention. During the early phases of REDD, pilot projects should be developed to test different types of benefit sharing schemes—direct payments, collective payments, development support, infrastructure development for participating communities, and schemes that provide mixed benefits. These projects should have the learning objective firmly implanted into the project design, with mechanisms to capture information, analyse practical experiences and disseminate lessons learned. Some key lessons could also be learned from the experiences in current voluntary

⁴³ Swallow, B., van Noordwijk, M., Dewi, S., Murdiyarso, D., White, D., Gockowski, J., Hyman, G., Budidarsono, S., Robiglio, V., Meadu, V. *et al.* 2007 Opportunities for Avoided Deforestation with Sustainable Benefits. An Interim Report by ASB – Partnership for the Tropical Forest Margins. ASB – Partnership for the Tropical Forest Margins, Nairobi, Kenya.

⁴⁴ Stern, N. 2007 The Economics of Climate Change: The Stern Review. Cambridge University Press, Cambridge, UK.

and compliance markets, particularly with respect to community-based and NGO-led management schemes as a benefit-sharing, market-oriented approach.

While it is not essential to adopt specific laws for the creation of LULUCF climate change mitigation schemes, it may be necessary to modify the regulatory framework and/or fiscal policies to support the development of these schemes. Property rights (including rights to carbon and ecosystem services) is one area that receives much attention in REDD- and LULUCF-related analyses. Research could support the development of knowledge on how property rights could play a role in the success of such schemes and how different property rights are or may be bundled within different national contexts. Linking the protection of community forest rights, promotion of community participation in REDD, and understanding of the role of forests in local livelihoods could provide useful guidance in setting priorities for REDD policies and institutional frameworks.

5 Monitoring, reporting and verification (MRV)

There are a number of issues around MRV that are under discussion, many of which will impact on this area under a REDD-plus scheme. One of the key issues is whether all actions should be verified by national entities and in accordance with national procedures, or whether verification should occur at the international level (e.g., under the auspices of the UNFCCC) and involve an independent review process. A possible solution explored by Parties is that verification should be carried out at the national level, but in accordance with internationally agreed guidelines or procedures, for nationally funded actions, and at the international level for actions implemented with external support. There is a need for consideration of whether verification requirements should be different for different groups of countries or different types of action.

5.1 Consensus

Parties agree that measurement and reporting of voluntary actions by developing countries in climate change mitigation need to include:

- Information on the implementation of voluntary mitigation plans, programmes and actions themselves (including REDD-plus);
- The reduction in GHG emissions achieved by the action in relation to the national GHG trajectories (e.g., at a national or sectoral level);
- The incremental cost of the action, and the support needed;
- The sustainable development benefits and co-benefits.

With respect to a REDD-plus scheme, Parties have converged on the view that monitoring, reporting and verification of actions should take the following main elements into consideration:

- Reference emissions and reference levels need to be established and verified, taking into account national circumstances;
- A common methodology should be used for all policy approaches, based on remote sensing and verification on the ground;
- Robust national forest monitoring systems and *ex-post* verification are both necessary.

There appears to be convergence on the view that measurement, reporting and verification systems in this area should be based on:

- National forest inventories, existing or to be developed;
- Unbiased, periodic reviews (possibly organised under the auspices of the UNFCCC) to assess the application of agreed modalities, including review of data.

5.2 Unresolved issues and options

Few of the issues related to MRV have been resolved and the question of what to monitor must be resolved before the discussion can proceed. The Meridian Institute report⁴⁵ indicates that there are two options for determining which pools to include in a monitoring system under REDD. First, countries could be required to include all five approved carbon pools⁴⁶ in their emissions assessment. This would require fairly high technical capability and be costly to implement. Second, countries could be allowed to choose which pools to include and provide evidence of the conservativeness of their choice. This choice would be consistent with the rules for afforestation and reforestation activities under the CDM and consistent with national GHG inventories in the AFOLU sector in countries with an emissions reduction commitment. It is also likely to be the more cost effective option. Regardless of which pools are included in the reference level and REDD interventions, there must be consistency within the country in the selection and subsequent monitoring over time.

While there is also convergence that the reference level (RL) should be based on historical emissions levels, taking into account national circumstances, there is no consensus on what constitutes an RL. Some Parties prefer to use 'reference emissions levels' (RELs), while others prefer flexibility to set RLs that are not tied to emissions. For the sake of this discussion, the Meridian Report makes a distinction between a business-as-usual (BAU) baseline and a crediting baseline. A BAU baseline is a technical prediction of what would happen without REDD and serves as a benchmark to measure the impact of REDD policies. A crediting baseline is the benchmark for rewarding the country if emissions are below that level (and not giving any reward or—depending on liability—invoking debits if emissions are higher). The report outlines four options for setting a crediting baseline or REL:

Option 1: Parties could negotiate a table of country-specific RL/RELs. Any negotiation should include a global RL to ensure global additionality of the REDD scheme. Proposed RL/RELs could be established following the application of a general formula reflecting broadly agreed upon principles based on country-specific data.

Option 2: Parties wishing to participate in the REDD could submit individual RL/RELs to the SBSTA for consideration and eventual approval by the COP. Under this option, the SBSTA would periodically forward a list of national RL/REL recommendations to COP for endorsement.

Option 3: Similarly, as candidate Parties become ready to participate, the candidate country would propose an REL which would be considered and approved by an independent panel of experts established under UNFCCC. The Committee would be involved in exchanges with the focal point of each candidate Party and external expert assessments based on agreed upon criteria for RL/REL setting.

Option 4: Finally, future COP decisions over the years could be taken to endorse RLs/RELs, after consideration and recommendation by the SBSTA. The SBSTA will base its recommendations on the advice of a formal committee established under its auspices. The committee would receive proposed RELs from Parties and consult with the relevant Party focal point and external experts prior to forwarding advice to the SBSTA based on agreed criteria for RL/REL setting.

The next issue to resolve is whether monitoring will be based on gross or net emissions. Accounting based on gross emissions would not include carbon stocks in replacement vegetation. Net accounting includes accounting for the carbon emissions from deforestation and accumulation of carbon stocks in replacement vegetation. Accounting based on gross emissions is simpler to implement than net accounting approaches, but overestimates the

⁴⁵ *Op. cit.* Angelsen *et al.* (2009).

⁴⁶ Aboveground biomass, belowground biomass, soil organic matter, dead wood and litter.

impact of avoided deforestation on the atmosphere. Accounting based on net emissions provides the most accurate assessment of the impact of deforestation on the atmosphere, but is technically more complex to implement.

The issue is further clouded by the expanded list of activities considered in a REDD-plus scheme. Monitoring changes in carbon stocks for forest degradation, sustainable forest management, forest conservation, and enhancement of carbon stocks of forest remaining forests requires a net approach to carbon accounting as outlined in the 2006GL. For these activities, incremental carbon storage above the carbon stocks in the original forest is credited. Thus, the original carbon stock must be estimated, as well as the net increment in carbon stocks (minus any increment in N₂O emissions in the case of plantation of N fixing trees). Basing emissions reduction calculations on gross emissions for avoided deforestation and net emissions for all other activities adds complications to the accounting system, but these are not impossible to overcome. However, given that the more costly net accounting system will be required for the 'plus' activities, it would not be much more complicated to apply this accounting system to avoided deforestation and it would provide a more accurate assessment of the impact of land use change on the atmosphere.

Once the REDD policy framework is established, Parties may wish to ask the IPCC to review the 2006GL and assess whether further elaboration is needed for REDD. This could include, for example, further development of internationally acceptable methods, guidance, and standards, building on the existing Good Practice Guidance (GPG) framework.

Another area for further consideration is whether to measure leakage, and if so how, and whether effects on biodiversity and other impacts or co-benefits should be included in the monitoring systems.

5.3 Research needs

Baselines. Setting the reference emission levels or baselines is among the more challenging aspects of implementing REDD-plus projects in developing countries. There is very little guidance in the agreed texts coming from the UNFCCC. The annex of decision 2/CP.13 suggests that 'Reductions in emissions or increases resulting from the demonstration activity should be based on historical emissions, taking into account national circumstances'. There is no agreement among experts about how to set a level. Santilli *et al.*⁴⁷ suggested using a 5 year average and updating it every 3 years. Others have suggested using 10 year averages (e.g., the recent Brazil commitment to reduce emissions). Global Observation of Forest and Land Cover Dynamics (GOFC-GOLD)⁴⁸ recommends using forest cover values from 1990, 2000 and 2005 when better data are not available. While setting national emissions reductions targets is ultimately a political decision, there is an expressed desire to base these targets on both historical emissions and national circumstances. One key area for research to support a REDD-plus programme is in developing methods and approaches for the integration of historical deforestation data with knowledge of drivers of deforestation to construct scenarios and provide reasonable estimates of future emissions.

Carbon accounting. The 2006GL offers the most up-to-date methods for carbon accounting and covers all cases likely to be encountered in a REDD-plus programme. Unavailability of country- or region-specific factors for these GHG accounting equations is a limitation that could largely be overcome with a concerted research effort, and significant progress could be made within 5 years. Several groups have developed REDD accounting methods, but these focus on estimating aboveground biomass carbon stocks and ignore the other four pools⁴⁹. However, in many tropical forest ecosystems, more than half of the carbon can actually be

⁴⁷ Santilli, M., Moutinho, P., Schwartzman, S., Nepstad, D. and Curran, C. 2005 Tropical deforestation and the Kyoto Protocol: an editorial essay. *Climate Change* 71: 267–276.

⁴⁸ GOFC-GOLD 2009 Reducing Greenhouse Gas Emissions from Deforestation and Degradation in Developing Countries: A Sourcebook of Methods and Procedures for Monitoring, Measuring and Reporting. GOFC-GOLD Report version COP14-2. GOFC-GOLD Project Office, Natural Resources Canada, Alberta, Canada.

⁴⁹ e.g., BioCF draft REDD methodology.

below ground⁵⁰. Research needs to focus on providing appropriate factors for the equations that could improve project- and national-level carbon accounting, particularly with respect to approaching the specifications of an IPCC Tier 2 approach. This work could be carried out by national forestry research services and universities, and could be supported by international research institutions. This work should lead to a better understanding of human-induced long-term carbon stock changes in all five pools (effects of forest degradation and sustainable forest management, responses of soil carbon pools, etc.).

Linking national and project-level carbon assessments. There is a need for research to address methods for linking national and subnational monitoring, estimation and accounting. This is a multifaceted area of research that includes:

- Developing approaches for community participation in project-level accounting exercises to increase transparency and community ownership of projects;
- Developing methods for linking project baselines and performance with national baselines and performance benchmarks to facilitate project implementation;
- Developing institutional innovations that will be required to implement a national REDD-plus scheme—in particular, there is a need for knowledge to support rural institutional development for integration of community participation into carbon accounting and linking rural institutions with institutions at the national level that are responsible for carbon monitoring and reporting.

6 Stakeholder involvement

Protection of the rights of indigenous peoples (IPs) and local communities (LCs) in a REDD mechanism has been one of the major areas of contention in the REDD-plus negotiations. The effective participation of local stakeholders will be important to environmental effectiveness of the programme. LCs and IPs face many challenges with respect to meaningful participation in the dialogue around forest management and REDD due to the fact that they are often in remote locations and of low political standing within the power structures of many countries. Some countries want to see this issue addressed explicitly in the future agreement under the UNFCCC; others see this issue as an infringement on national sovereignty and want to address these issues domestically or through other instruments in the UN.

6.1 Consensus

There appears to be no consensus on this issue at the moment and Parties are converging on a compromise that will make reference to the need to engage ‘local people’ in the consultation process of developing REDD projects and the national REDD scheme. This leaves open the possibility of addressing this issue in greater detail when the modalities of the REDD mechanism are decided.

6.2 Unresolved issues and options

The Meridian Institute report⁵¹ indicates that there are a number of policy options available to ensure proper stakeholder involvement in developing national REDD programmes and specific projects. One possibility is that REDD modalities could include guiding principles that specifically refer to rights of access to information and consultation in national decision-making processes. These principles would enhance stakeholder participation by inclusion of references to both procedural rights within REDD processes and rights to land and natural resources. Likewise, terminology could refer to ‘Indigenous Peoples and Local Communities’, encompassing a broad category of actors and recognising collective rights, although it appears that Parties are not willing to use such specific language. One means of

⁵⁰ Nepstad, D.C., de Carvalho, C.R., Davidson, E.A., Jipp, P.H., Lefebvre, P.A., Negreiros, G.H., da Silva, E.D., Stone, T.A., Trumbore, S.E. and Vieira, S. 1994 The role of deep roots in the hydrological and carbon cycles of Amazonian forests and pastures. *Nature* 372: 666–669.

⁵¹ *Op. cit.* Angelsen *et al.* (2009).

avoiding difficult negotiations might be to refer to obligations in human rights instruments such as the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), but the disadvantage is that some Parties are not signatories to such agreements.

When modalities are negotiated, the principles of stakeholder participation could be strengthened through the development of specific guidelines covering procedural aspects of programme implementation. For example, the Meridian Institute report suggests that guidelines for IP and LC participation could cover:

- Establishing public consultation procedures at national or international level;
- Strengthening local organisations and groups that represent the interests of IPs and LCs;
- Training staff in local regulatory and funding agencies;
- Developing social impact assessments and involving IPs and LCs in assessments.

The Meridian Institute report indicates that the international architecture for REDD will set the framework for implementation. However, the social implications will be the result of how governments choose to implement REDD at national and subnational levels. Key considerations for promoting IP and LC participation include:

- Ensuring prior and informed consent of peoples that are likely to be affected by any actions associated with implementation of national REDD strategies;
- Strengthening rights and governance through implementation of forest tenure reforms, mapping of lands, and recognition of rights to ecosystem services;
- Prioritisation of ‘pro-poor’ policies and measures to achieve REDD;
- Alignment with national development processes, for example, by integrating REDD into inclusive and broad-based development strategies;
- Using REDD funding to support local government reform processes and social capital development, to help channel financial flows to IPs and LCs, and also to improve broader forest governance;
- Development of stronger accountability structures and institutions, for example, transparent information provision to IPs and LCs, inclusive multistakeholder processes, monitoring systems for the social impacts of REDD, and appeals systems.

Donors could provide voluntary support for IP and LC participation through supporting rights reform processes, provision of technical assistance (e.g., on developing impact evaluation processes), supporting civil society across multiple sectors, and providing sources of upfront finance for IP and LC involvement in national and subnational REDD planning and implementation. Participation could also be enhanced by extension of the framework of standards like those of the Carbon, Community & Biodiversity Alliance (CCBA) to REDD, and support of the use of these standards by donors.

6.3 Research needs

One area that may be singled out for specific attention by research is gender equity and equity of indigenous and minority groups in REDD-plus projects. Historically, women have often received few of the benefits associated with tree planting projects and are sometimes prohibited by local custom from planting trees. However, with poor women expected to play a major role in REDD projects, both as producers of carbon and as project designers and implementers, efforts must be made to provide a comprehensive analysis of women and REDD. This could be undertaken as a targeted research activity by the Global Environment Facility (GEF), the objective of which would be to document case studies where rural women have succeeded in using agroforestry, community forestry and other carbon sequestration or reduced deforestation projects to improve livelihoods and the wellbeing of their families.

Such research could document cases where problems have arisen and identify the elements that have helped to overcome such problems. Development experience indicates that tens of thousands of women across the developing world have participated in tree planting and natural resources conservation, and there will be much to build upon. For the longer term, the study would seek to develop gender- and minority-centred frameworks that can be integrated to improve project design and implementation.

Another area of research could focus on defining conditions for effective prior informed consent and IP and LC involvement in REDD strategy and project design, implementation and review at national and local levels. Governance traditions, institutions and practices vary across countries and influence the level and effectiveness of involvement and contribution to decision making. Over the last 20 years, however, countries have followed similar paths of broadening public access to information, public involvement in decision making, and in strengthening accountability mechanisms. They have signed up to what have become globally recognised principles for access to information, participation and justice (principle 10 of the Rio Declaration on Environment and Development, reaffirmed in the Plan of Action for Sustainable Development, adopted in Johannesburg in 2002) and are involved in various national, binding and non-binding regional and global initiatives whose objectives are to translate these principles into practice. Review of experience across diverse REDD-participating countries, identification of commonly accepted policies and practices, and the formulation of a framework for informed involvement in the design and implementation of REDD strategies and projects at national level will be a useful contribution to national and local REDD initiatives. Such a framework should be based on an assessment of common working policies and practices in forest and environmental policy, as well as more broadly (such as the implementation of Access to Information laws or Environmental Impact Assessments). It is likely to encourage effective IP and LC involvement, to ensure more equitable distribution of benefits, to resolve potential conflicts early on, and to contribute to effective implementation. The framework can establish a nationally-led process to address other unresolved issues such as aligning a REDD programme with development objectives and prioritisation of pro-poor policies and measures to achieve REDD. Elements can be included in REDD modalities that specifically refer to rights of access to information and consultation in national decision making.

Finally, to be able to make informed choices on how to implement REDD at national level, governments will benefit from an assessment of the social implications of different approaches to addressing factors relevant to and sometimes critical to REDD success. Such an assessment should outline options and costs of addressing rights and tenure issues, mapping and demarcation of land boundaries, integrating pro-poor policies, shifting development priorities and aligning REDD to them. The assessment will have a practical value if it builds on a review of ‘accompanying’ issues of high priority for LPs and ICs and different experiences in addressing those issues.

7. Environmental and social co-benefits

There are a number of benefits that a properly designed REDD-plus scheme could generate:

- Social co-benefits associated with sustainable development and poverty reduction;
- Governance benefits associated with improved protection of human rights and improvement in forest governance;
- Environmental co-benefits, particularly enhanced biodiversity protection, soil and water conservation, and ecosystem restoration.

7.1 Consensus

The Indicative Guidance for demonstration activities in the BAP⁵² notes that ‘Demonstration activities should be consistent with sustainable forest management, noting, *inter alia*, the relevant provisions of the United Nations Forum on Forests, the United Nations Convention to Combat Desertification and the Convention on Biological Diversity’. This sentiment is reflected in the draft text of the Assembly Document⁵³ in several places and in the negotiation texts of SBSTA.

There is growing consensus that REDD-plus activities should generate social and governance benefits for developing countries and contribute to improving the quality of forest management. This is also reflected in the draft text.

7.2 Unresolved issues and options

There is divergence on whether and how social (at national and community levels) and environmental co-benefits should be mandated in the design of the international REDD-plus regime. Some favour keeping REDD-plus simple and not encumbering it with additional requirements. Among those who favour inclusion of REDD in a climate change regime, some argue that because the main aim of REDD is mitigation, not poverty reduction, the appropriate standard should be ‘do no harm’ to the poor. Others favouring a ‘pro-poor’ approach argue that failure to specifically include co-benefits objectives in REDD-plus design will ensure failure of the programme. This group views REDD as deriving much of its legitimacy and potential effectiveness from its ability to improve the welfare of the forest-dependent poor and foster development in some of the poorest regions of the world⁵⁴. Brown *et al.*⁵⁵ summarise the arguments in favour of a poverty reduction and environmental services approach:

Moral arguments concern not only the need to ensure that any major international initiative aims at improving welfare and equity, but also the need to address the interests of those with legitimate rights to use the forest who might be adversely affected by internationally supported interventions.

Practical considerations relate to the fact that the immediate forest managers, who are often the forest-dependent poor, will need appropriate incentives to ensure the effectiveness of REDD.

Risk reduction arguments address the risk of local rejection, even social conflict, which could be a major disincentive to external investment, particularly given forestry’s record as a highly charged policy arena.

Attractiveness of REDD investments will be greater for those investors whose motivations are related to corporate social responsibility if REDD delivers pro-poor benefits.

Political considerations: much REDD investment is likely to come from international donors and development agencies for which social development is an underlying rationale.

Procedural matters: the UNFCCC recognises the importance of social issues, including poverty, as global priorities (Decision 2/CP.13).

Decisions on the design of the financial mechanism will have significant implications for the generation of environmental and social co-benefits. Compliance markets are likely to deliver greater financial resources than concessional funding. However, market-based systems have

⁵² Decision 2/CP.13 – Annex.

⁵³ FCCC/AWGLCA/2009/INF.1.

⁵⁴ Brown, D., Seymour, F. and Peskett, L. 2008 How do we achieve REDD co-benefits and avoid doing harm? *In*: Angelsen, A. (ed.) *Moving Ahead with REDD: Issues, Options and Implications*. CIFOR, Bogor, Indonesia.

⁵⁵ *Ibid.*

two major limitations. First, markets are unlikely to fund the co-benefits aspects of REDD-plus. Second, market finance is likely to be unevenly distributed between emerging economies and less developed countries, because of issues related to private sector investor confidence. Patterns within CDM investments are telling and should be taken into consideration by negotiators. Thus, it is reasonable to expect that with a market-based REDD-plus mechanism, poorer countries and projects targeting poverty reduction will be unlikely to be able to attract effective prefinancing of REDD-related activities. In the short to medium term, most REDD funding to less developed countries will likely come from discretionary aid and voluntary sources, rather than from compliance markets.

Thus, if REDD-plus allows donor financing, it should be more feasible to develop a REDD-plus mechanism that generates social and environmental co-benefits than it would be under a scheme based on compliance market finance. An alternative approach would involve the use of a levy mechanism, for example, levying a fixed percentage from auctioning emissions reductions (e.g., European Union Emissions Trading Scheme revenues). This approach could combine the benefits of market finance and a fund-based approach to ensure the delivery of co-benefits. Despite advantages in generating co-benefits, fund-based finance (whether development assistance or levy based) weakens the link between payment and performance, and risks repeating the poor record of traditional aid to the forestry sector⁵⁶.

7.3 Research needs

There are a number of research needs in the area of understanding co-benefits. First, if co-benefits are to be measured, there is a need for appropriate and internationally accepted indicators of these benefits. These indicators need to be objectively verifiable and easily measured. Thus, there is a significant research agenda to develop these indicators and integrate them into REDD measurement and monitoring methodologies in a cost effective manner.

Second, there is a need to develop knowledge of how to generate synergies between co-benefits and atmospheric benefits within different country contexts and to understand the tradeoffs between the different objectives. Generating co-benefits is not always a win-win proposition and there are often significant tradeoffs⁵⁷. Understanding these tradeoffs will be essential for designing appropriate benefits sharing mechanisms and for developing tools for improving project design.

Finally, there is a need to conduct market research on investor and project developer attitudes and concerns regarding the obligations for projects to generate these benefits. It will be important to identify key stakeholder perceptions, verify these perceptions against reality on the ground, and design support programmes to mitigate real impediments and change attitudes where perceptions are erroneous, with objective information.

⁵⁶ *Ibid.*

⁵⁷ Gockowski, J., Nkamleu, G.B. and Wendt, J. 2001 Implications of resource-use intensification for the environment and sustainable technology systems in the Central African rainforest. *In*: Lee, D.R. and Barrett, C.B. (eds.) Tradeoffs or Synergies? Agricultural Intensification, Economic Development and the Environment. CAB International, Wallingford, UK.