EXPERIENCES WITH BENEFIT SHARING: ISSUES AND OPTIONS FOR REDD-PLUS

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PREFACE

International Union for Conservation of Nature (IUCN) received a grant from NORAD under Norway's Climate and Forest Initiative. The project is entitled: "Scaling up voices for influencing the post 2012 climate regime: Shaping pro-poor REDD options". The objective of the first phase of the project from June 2009 – February 2010 is to give voice to stakeholders who have no formal role in climate negotiations, to explore challenging issues in the development and implementation of REDD strategies, and to provide constructive inputs to national and international REDD processes. The project was implemented by IUCN in cooperation with The Forest Dialogue and Econ Pöyry.

This report is a contribution to one particularly challenging issue related to the implementation of REDD-plus at the national level: to design mechanisms for sharing benefits or revenues that are legitimate and fair and that create incentives for efficient and effective REDD-plus activities. The report is, to our knowledge, one of the first attempts to distill experiences with current benefit sharing mechanisms in forestry and other sectors and to assess these in relation to REDD-plus.

A draft of this report, and a brochure based on the report in Spanish and English, were distributed for discussion and comments during COP 15 in Copenhagen[1]. This final version has been revised based on comments received. In addition, a chapter has been added summarizing first hand review of experiences in Guatemala, Cameroon and Ghana conducted during three country visits. Experiences from a range of other tropical forest countries collected from the general literature are also covered.

Thanks are extended to Arild Angelsen, Jan Willem den Besten, Gabriella Larsson, Haakon Vennemo and Michael Wells for commenting on parts of the report and to Edmund E. Barrow, Joshua Bishop, Mario Escobedo, Robert Fischer, James Gordon, David Huberman, Patrice Bigombe Logo, Stewart Maginnis, Adonis Milol, James Mayers, Peter Neil, Rene Oyono, Gill Shepherd for providing suggestions for relevant experiences and literature for review. The views and recommendations[2] in this report are those of the authors, and do not represent the views of IUCN or NORAD/Norwegian Government.

The ultimate aim of this work is to provide the first, and by no means exhaustive, review and assessment of benefit sharing (BS) mechanisms. Learning from existing experiences can help our effort to develop more practical design, application, testing and demonstration of BS under REDD-plus strategy implementation. This is something IUCN plans to pursue from 2010.

February 2010

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[1] Both the report and the brochure can be downloaded from: http://www.iucn.org/knowledge/news/focus/2009_redd/?4359/Sharing-the-benefits-under-REDD

[2] As well as any remaining errors or omissions

ACRONYMS

ABS	Access and benefit sharing (under the UN Convention on Biodiv.)
BL	Biodiversity Law (in Costa Rica)
BS	Benefit sharing
CCE	Chicago Climate Exchange
CBD	UN Convention on Biological Diversity
CBNRM	Community-based natural resource management
CCBS	Climate, Community and Biodiversity Standards
CDM	Clean Development Mechanism
CF	Community Forest
CFM	Community Forest Management
CFUG	Community Forest User Group
CIB	Congolaise Industrielle des Bois'
COP	Conference of the Parties to UNFCCC
COTCO	Cameroon Oil Transportation Company
CPC	Commune People's Committee
CSR	Corporate Social Responsibility
CWF	Community wildlife management
DRC	Democratic Republic of Congo
EITI	Extractive Industries Transparency Initiative
ES	Environmental Services
FAO	UN's Food and Agriculture Organization
FCPF	Forest Carbon Partnership Facility of the World Bank
FONAFIFO	The National Forestry Financing Fund (in Costa Rica)
FPDRs	Forest Protection and Development Regulations
FRT	Forest Resource Tax (in Indonesia)
FSC	Forest Stewardship Council
FUBPF	Forest Utilization Business Permit Fee (in Indonesia)
GEF	Global Environment Facility
GHG	Green House Gases
ICDP	Integrated conservation and development
IMF	International Monetary Fund
IIED	International Institute for Environment and Development
INBio	National Biodiversity Institute (in Costa Rica)
IUCN	International Union for Conservation of Nature
MA&D	Market Analysis and Development
NDDC	Niger Delta Development Commission
NGO	Non-Governmental Organization
NKCAP	The Noel Kempff Climate Action Project
NORAD	Norwegian Agency for Development Cooperation
NTFP	Non-timber forest product
ODA	Official Development Assistance

OECD	Organisation for Economic Co-operation and Development
PA	Protected area
PAM	Policies and measures
RFA	Annual Forest Tax (in Cameroon)
RUPES	Rewarding the Upland Poor for Ecosystem Services
SFM	Sustainable Forest Management
UN	United Nations
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
VFMB	Village Forest Management Board

SUMMARY AND CONCLUSIONS

Abstract

Reducing emissions from deforestation and forest degradation (REDD) is potentially a significant source of monetary benefits or revenues for developing tropical forest countries. From a developed country perspective, paying these countries for REDD actions is expected to be an attractive and cost-effective approach to climate change mitigation. How such benefits should be shared between stakeholders within developing countries has not been fully explored. It is an essential question in national REDD strategy design and implementation. To inform the discussions about how to develop national benefit sharing (BS) systems under REDD, we review experiences with existing BS arrangements in the forest sector and related areas. Experience suggests that appropriate BS systems should aim to provide clear and direct incentives for action and build support and legitimacy for the REDD mechanism. Otherwise the overall effectiveness of the mechanism may be compromised. To achieve this dual objective, benefits may be shared more widely than a strict focus on economically optimal incentives would prescribe. Based on our review, we propose five features for a well-functioning BS mechanism applicable to REDD: (1) Engages the right stakeholders; (2) Determines the right form and level of incentives; (3) Creates a legitimate mechanism for management of benefits; (4) Enforces effective transparency provisions; and (5) Develops effective dispute settlement mechanisms.

Background

International Union for Conservation of Nature (IUCN) received a grant from the Norwegian Agency for Development Cooperation (NORAD) to provide inputs to the international climate negotiations and contribute to country processes related to reduced emissions from deforestation and forest degradation (REDD[3]). As one project component, this study addresses an important challenge for REDD: how to set up systems for sharing monetary REDD benefits or revenues between national stakeholders. An important aim of such systems is to give monetary rewards or incentives to individuals, companies, associations or organizations for REDD activities. At the same time, it may also be important to consider issues of equality, support and legitimacy of the REDD mechanism. Many studies focus on how to design an international REDD mechanism. Less attention has been paid to the national implementation issues. This study is to our knowledge one of the first attempts at clarifying and discussing important issues related to national benefit sharing (BS) for REDD.

Objectives

This study attempts to address the following three questions:

- What is benefit sharing (BS) and why is it important?
- What are the experiences with existing mechanisms to distribute benefits from forests and other natural resources?
- What can be learnt from these experiences for the design and implementation of national BS mechanisms for REDD?

[3] An international mechanism where developed countries will compensate developing forest countries for foregone revenues from additional efforts to reduce their deforestation rates, keep their forests intact or increase forest cover.

We only consider the sharing of monetary benefits, not other potential (co-)benefits, such as biodiversity conservation and other environmental services. Although we recognize the importance of considering distributions of costs and burdens of REDD in tandem with BS, for simplicity we focus most of our discussions on experiences and systems for BS. We further apply a broad definition of REDD, including both reduced emissions and enhancements of carbon stocks ("REDD-plus").

The study is based on a desk review of experiences with BS mechanisms in the forest sector as well as other areas, and supplemented by a field review of experiences of BS mechanisms in the forest sectors of Guatemala, Cameroon and Ghana. Specifically, we review integrated conservation and development projects (ICDPs) and protected area (PA) management, payment for forest environmental services, clean development mechanism (CDM) and voluntary carbon markets, community forestry and sustainable forest management. These may all be avenues for future REDD actions. In other areas, we review BS under the UN Convention on Biological Diversity (CBD), extractive resources and safeguard policies for infrastructure projects.

Conclusions and main findings

Overall benefits for sharing are determined by costs, demand and mechanism set-up

The total monetary benefits from REDD available for a country depends on its REDD potential, costs of actions in the country and on the demand for REDD credits from developed countries. In addition, how the reference emission level is set, i.e. the assumption of what would have happened in the absence of REDD, is a crucial determinant. The payments will consist of compensation for the costs of REDD activities plus a so-called REDD rent or surplus. The size of this rent will depend on how the international REDD mechanism is set up. A fully competitive market will give one price for REDD credits, and consequently high rent for cheap actions. The bulk of benefits are expected to come from compliance-based finance, i.e. payments for REDD credits to offset emission reduction targets in developed countries. REDD payments may end after some decades, when tropical countries are expected to take the full responsibility for their own emissions and carbon stocks, including those in the forest sector.

Sharing benefits to give incentives for action and create broad legitimacy for REDD

Benefit sharing (BS) for REDD can be defined as agreements between different stakeholders about the distribution of monetary benefits from the sale of carbon credits. There are two main reasons to share benefits. The first is to create effective incentives by rewarding individuals, communities, organizations and businesses for actions that change land-uses and thereby reduce emissions. This means providing benefits somewhat in excess of the costs of their sacrifices to change behavior. The second reason is to build wider national (and international) legitimacy and support for the REDD mechanism. This can only be achieved if people directly affected by REDD actions and the wider public are treated fairly and equitably. This may mean sharing benefits more widely than a strict focus on economically optimal incentives would dictate. Experiences from exploitation of extractive resources demonstrate that wider sharing of benefits is important to foster cooperation and avoid conflicts.

Careful balancing between effective incentives and legitimacy needed

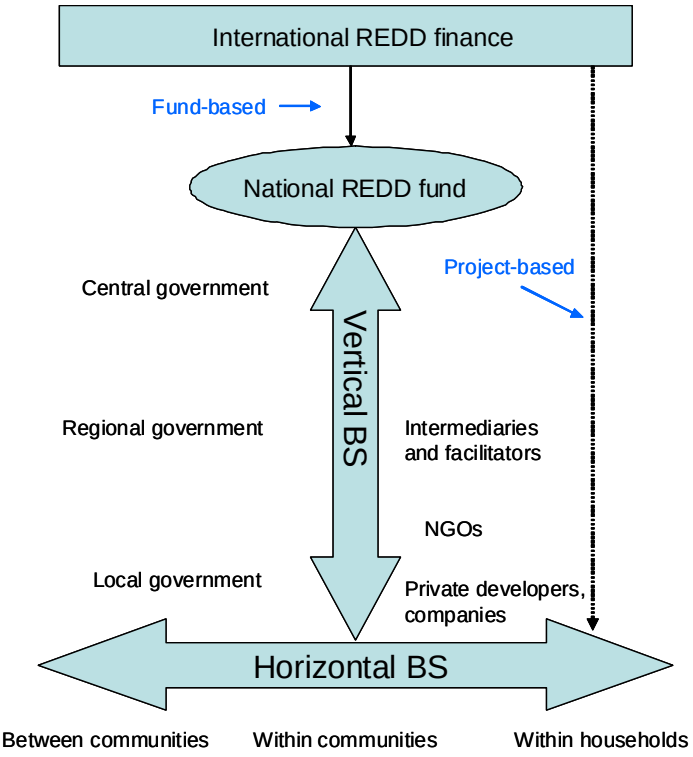
There is often a trade-off between providing effective incentives and creating a legitimate REDD mechanism. Change in behavior that reduce emissions need to be sufficiently rewarded individually or collectively (for example at community level). This is necessary for the REDD mechanism to be effective in changing land-use practices. If too many people benefit from something they have not actively contributed to (even if they could) or

have no legitimate claims to, incentives are diluted. The result will be lower emission reductions and overall benefits to share. On the other hand, if rewards are given only to certain groups, actions or geographical areas, people may feel unfairly treated and turn against the whole mechanism as illegitimate. This may lead to (increased) deforestation and degradation activities by those who feel left out or unfairly treated. The degree of sharing that is necessary to ensure support and legitimacy will also depend on the specific type of REDD policy and measure (PAMs) and stakeholders involved. Views on fairness and equity will typically also vary within and between countries.

Both vertical and horizontal benefit sharing must be considered

The international set-up for REDD will most likely rely on channeling payments into a country through a combination of a national REDD fund and direct project-based funding. This is called a nested approach. The national REDD fund may be set up separately from the state administration, within the state administration or as an integrated part of state budgets. Figure A illustrates the two main funding channels: a national REDD fund and funding going directly to projects. There are two main dimensions in BS: vertical and horizontal BS. The broad vertical arrow illustrates the sharing of benefits between national level government and non-governmental stakeholders down via regional government and intermediaries to the local level. Sharing benefits between and within communities and households and other local level stakeholders is called horizontal BS. The figure illustrates an important concern with operating by a national REDD fund: if too many stakeholders demand a share of the benefits on the way down to the local level, incentives for local actions will be weakened. This is an illustration of the trade-off discussed in the previous paragraph.

Figure A *Vertical and horizontal national benefit sharing*



Source: Adapted from Ellis-Jones (no date)

The time dimension should not be forgotten

REDD benefits are finite and time-limited. The overall REDD payment schedule, which will be hard to predict, will depend on the development in costs and carbon prices and other factors. REDD actions on a grand scale today are likely to raise the value of timber and agricultural products, increasing pressure on forest resources. This will make REDD actions more expensive and require higher compensations in the future since opportunity costs are increasing. Such factors are important when considering the overall scale of REDD and how to reward stakeholders over time. Poor and marginalized groups, for example, are much more in need of benefits today, rather than tomorrow. They may also require more of the payments up-front to make necessary changes in activities due to limited credit. Front-loading benefits in this way for emission reductions or carbon stock enhancements for delivery in the future may also dilute incentives to follow through on management obligations. Hence, a balance needs to be struck.

Benefit sharing mechanisms under REDD-plus should build on existing experiences

The design and development of BS mechanisms under REDD should build on existing experiences. This study has reviewed BS experiences for five broad forest conservation and management types or actions, as listed in the top part of the first column of Table A. There is a wide range of BS mechanisms currently in place. Some use existing government structures (e.g. local redistribution of tax revenues from production forestry) while others set up new institutions and dedicated channels to share benefits. The latter is typically the case for community forest management and integrated conservation and development projects (ICDPs). Benefits are delivered either as payments to individuals or communities or as contributions to local development projects, social services or similar. Combinations of these types are also common. Some key lessons from each of relevance to BS under REDD is given in the second column. Some lessons are common to several of the management types. This includes issues related to governance, transparency and accountability, unclear links between incentives and desirable actions[4], need for clarity and stability in the BS rules, and marginalization of poor and vulnerable groups in decision-making regarding BS. The clean development mechanism (CDM), (to some extent) voluntary carbon projects and ICDPs struggle to deliver both environmental services and livelihood contributions. Taxing carbon credits from projects to fund dedicated livelihood programs, has been suggested to strengthen the poverty dimension of projects.

[4] For example payments or community benefits that do not come with clear conditionality on required actions.

Table A Lessons for benefit sharing under REDD from review of experiences

BS area reviewed	Lessons for BS under REDD
Forest conservation and management types:	
Integrated conservation and development projects (ICDPs)	- Key stakeholders of BS need to be more carefully identified - Link between incentives/benefits & actions is often too loose - Criteria for BS could include cost, compliance, need and residency - Embezzlement and elite capture are often major problems - ICDPs take on too many things – lesson for REDD?
Payment for forest environmental services (PES)	- Link between incentives/benefits & actions stronger than for ICDPs - PES usually not targeting the poor, one reason is high transaction costs - Flexible tenure arrangements & up-front payments may improve BS
CDM & voluntary carbon markets	- Sustainable development concerns under CDM are left to countries - Standards related to social issues in voluntary markets may be useful - Front-loaded payment schedule is important for poor participants - Taxation of carbon credits can be redistributed for BS purposes
Community Forest Management (CFM)	- Vertical BS often specified in regulations, horizontal BS decided locally - Government procedures for CFM often cumbersome, small benefits - Clear & stable government rules on BS important for incentives - Including marginal groups makes BS more fair and transparent
Production forestry	- Sensitization and training needed before receiving monetary benefits - Transparency and accountability problems at different levels
Other areas and sectors:	
BS under the UN Biodiv. Convention	- Guidelines on BS very general, implementation decided nationally - BS complex & context specific, uncertain benefits in the future
Extractive industries	- Appropriate BS can induce cooperation also in difficult situations - Dedicated BS systems needed if existing systems are dysfunctional
Infrastructure project safeguards	- Available guidelines may be useful for BS under REDD - Monetary compensation systems may affect social and gender dimensions

Guatemala has interesting experiences from BS and incentive programs

Guatemala has the lowest forest area per capita in Central America and a relatively high deforestation rate. It also has the largest remaining tropical forest area in Central America: The Maya Biosphere Reserve of more than 2 million hectares. Implementation of a national REDD strategy in Guatemala is likely to require a nation-wide incentive program to encourage REDD activities. Guatemala is well-positioned to design such a program given the rich experience the country has with existing incentive programs in the forest sector. These programs provide monetary incentives for reforestation, forest conservation, forest regeneration, sustainable forestry and related activities generating environmental services. Payments are made per hectare and activity for limited time periods and supplemented by awareness raising and capacity building. The experiences from these programs seem to be encouraging in for example identifying the right stakeholders and priority areas, setting the level, form and timing of monetary incentives and ensuring

trusted delivery mechanisms, transparency and accountability as well as constructive ways of handling disputes. However, there are also challenges which need to be considered when drawing up a larger-scale REDD BS mechanism. These include the vulnerability of programs becoming politicized, in that they are not anchored properly in law. Risks of budgetary cuts and political interference with objectives or geographical coverage of programs may reduce trust and efficiency. Some of the programs also seem to be underfunded compared to demand and have not carefully considered the impact on promoted activities when payments cease.

Cameroon and Ghana – forest sector reform and BS in Africa

Cameroon is seen to be on the forefront of forestry sector reform in Africa and a country of still large forest resources. Ghana has also gone through recent reforms of the sector. Both countries should be in a position to play constructive rolls in REDD. They have had some years experience in sharing forest tax and other revenues with local communities. There are some encouraging signs that these BS systems have strengthened the role of local communities and promoted local development through recognition of customary rights to forest resources and revenue from forest activities. However, there are still challenges of accountability and transparency in transfer and management of funds and a need to sensitize and build capacity among local communities to utilize benefits in transparent and productive ways. Existing BS experiences should be carefully considered when designing and implementing national REDD strategies.

Other benefit sharing experiences are also valuable

We also reviewed the approach to BS under the UN Convention of Biological Diversity (CBD), experiences of BS for extractive resources and safeguard practices related to compensation and BS schemes for infrastructure projects. Some lessons from these are presented in the bottom half of Table A. The guidelines developed for access and BS of revenues from commercialization of biodiversity resources under the CBD are so general that almost any BS scheme would satisfy them. Implementation is left to the national country to decide. BS schemes for the CBD suffer from complexity and uncertain, future royalty benefits. Experiences from sharing revenues from extractive resources such as minerals and oil and gas span decades. One encouraging lesson is that appropriate BS arrangements may be able to induce cooperation even under the most difficult of circumstances. Another lesson is that if existing governance systems are dysfunctional, it is better to set up new BS mechanisms. However, as it is a desirable long-term goal to support and improve existing government institutions, a balance needs to be struck between working within existing systems and creating new parallel ones. Experiences with safeguard policies, the last area reviewed, also provide important lessons. There is best practice guidance both related to compensation and BS systems and stakeholder participation for hydro dams, pipelines and other large infrastructure investments. All of these may provide useful guidance also for BS under REDD.

Benefit sharing – international conditionality or up to countries to decide?

BS under an international REDD mechanism can either be left to each individual tropical forest country to decide and implement or be attached as a condition (in some form or another) to the payments for reduced emissions. The latter option smacks of classic conditionalities often used in aid assistance. On the other hand, the legitimacy of the REDD mechanism nationally and internationally, ultimately determining the effectiveness of the mechanism overall, depends to a degree on achieving appropriate BS. Some countries (such as Brazil) will not accept what they see as meddling in internal affairs. But some financing options will not be forthcoming unless there are stronger conditions on national actions. This is likely to apply both to national REDD actions and project level actions (as seen in the existing voluntary carbon markets, which have different standards

on social issues). A possible solution to this problem could be to develop guidelines for appropriate BS for different levels, contexts and REDD actions. These guidelines would have to be more specific then those developed for the CBD to be meaningful.

From drawing board to implementation

The design of BS may in theory be fairly simple. If there is clear land ownership, user and management rights; costs of sacrifices can be easily valued; satisfactory law enforcement; transparent, accountable and effective government systems for BS and trust between stakeholders, BS may be fairly straightforward. However, the physical, social, economic and institutional conditions often present in tropical forest countries, moves the design and implementation of BS mechanism into so-called “second best” territory For example, if governance and corruption are problematic within existing local government structures, REDD funds may have to be distributed through a new mechanism with extra checks and balances. If REDD funds just displace current transfers from the central government leaving total transfers the same as before REDD, REDD funds may need to be “earmarked” in order to be additional. If direct payments to poor individuals are difficult due to disturbance of traditional social and gender dimensions, then incentives may better be provided in kind as projects. Experiences from existing BS mechanisms may help in judging what would be the best approach under different circumstances.

Five features of well-functioning benefit sharing mechanisms

Given the degree of variation in the conditions affecting BS between and within countries, as discussed in the previous paragraph, we do not attempt to prescribe specific BS mechanisms for different circumstances. Instead we identify and describe five generic features or main characteristics of well-functioning BS mechanisms. We utilize discussions in Bennet (2002) and add lessons drawn from the BS experiences reviewed in this study. The five features should be equally valid to a national level system as to a small-scale REDD project, for example support to community forestry, an integrated conservation and development project or similar. Table B lists the five main feature areas (left column) and describes the key features (middle column). The last column describes the result or impact of this characteristic, in terms of achieving a well-functioning BS system. As can be seen from the table, to achieve a well-functioning BS system, stakeholders need to be carefully identified and engaged (not just consulted). Second, the level (amount), form (e.g. individually, in-kind) and timing (e.g. twice per year) of incentive payments to these stakeholders need to be decided and linked directly to actions agreed with them. Then a mechanism which is trusted and has the necessary accountability provisions in place should disburse timely payments to stakeholders. Information about all transactions should be in the public domain available for scrutiny by civil society, government and private sector. Finally, as a prophylactic move and given the novelty of REDD, BS agreements should be flexible and allow for necessary changes based on learning and have clear dispute settlement mechanisms.

Table B Five features of well-functioning benefit sharing mechanisms

Key area	Feature of BS mechanism	Results in…
1. Stakeholder engagement	*Identifies stakeholders, consults with them, and builds local capacity for them to engage*	*→ Basis for determining incentives, builds ownership, trust and legitimacy*
2. Incentive design	*Estimates costs of people's sacrifices, determines level, form and timing of benefit distribution*	*→ Clear and direct incentives for stakeholders to engage in REDD activities*
3. Delivery mechanism	*Ensures proper procedures for reporting, auditing, and monitoring of benefit streams*	*→ General trust and legitimacy, and effective safeguards against corruption*
4. Transparency provisions	*Harnesses internal and external forces for increased transparency*	*→ Cost-effective, meaningful levels of accountability*
5. Dispute settlement	*Prepares for changes in agreements, adopts dispute settlement mechanisms*	*→ Avoids costly conflict, disciplines actors and reduces uncertainty*

Concluding remarks and next steps

This study is a first attempt to grapple with the difficult issue of national benefit sharing systems under REDD. The intention is to stimulate discussion and provide a starting point for moving the design of such systems into the practical arena, e.g. in the form of guidelines or sourcebooks. The next, natural step to achieve this would be to test and learn from different BS arrangements as part of REDD demonstration activities which are urgently needed to move the implementation of REDD forward.

1 INTRODUCTION

1.1 BACKGROUND AND OBJECTIVES

International Union for Conservation of Nature (IUCN) has received a grant from the Norwegian Agency for Development Cooperation (NORAD) under its Forest and Climate Initiative to provide inputs to the international negotiations and contribute to tropical forest country processes on reduced emissions from deforestation and forest degradation (REDD)[5]. These inputs will, first, be based on utilizing broad stakeholder dialogues linking national and international levels and, secondly, through analyzing and learning from existing experiences from forest conservation, management and sustainable use of relevance to REDD.

Currently the debate on REDD is focused mostly on a potential post 2012 climate agreement, the structure of an international REDD mechanism, the costs and financing options of such a mechanism, and a host of more technical issues[6]. What the REDD set-up may look like at the national level in tropical forest countries and how it may be influenced by choices made at the international level, have received much less attention[7]. This is important not just for developing countries to know the likely implications of what they sign up to, but also for the international community to better appreciate the complex realities of developing country implementation of a full-blown REDD mechanism.

Objectives of the report

The analytical component of the project, of which this report forms a main part, aims to address one specific issue that has often been raised as a concern for the implementation of national REDD strategies; *how benefits or revenues from REDD could or should be distributed between different actors within tropical forest countries.*

The main reason for addressing this issue is to better understand how a REDD mechanism at the national level can balance the needs to effectively and efficiently deliver reduced deforestation and degradation while at the same time make sure that forest-dependent people, especially poor and marginalized groups, will gain an equitable share of any potential revenues. At a minimum, REDD should do no harm to the prospects of the poorest. It is also very likely that a REDD mechanism focused only on low costs (efficiency) and reaching emission reductions with high certainty (effectiveness), risks failure unless the equity dimension is factored in properly[8].

More specifically, this report attempts to address the following three questions:

- What is benefit sharing (BS) and why is it important?
- What are the experiences with existing mechanisms to distribute benefits from forests and other natural resources?
- What can be learnt from these experiences for the design and implementation of national BS mechanisms for REDD?

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5 "Scaling up voices for influencing the post 2012 climate regime: Shaping pro-poor REDD options".

6 See for example two main references: Angelsen et al. (2008) on most important issues concerning the international set-up and Eliasch (2008) on financing.

7 An important contribution on the national set-up for REDD is Angelsen et al. (2009).

8 In addition to jeopardizing the success in terms of efficient and effective REDD activities, equity or fairness may of course be considered a desirable objective in its own right, for moral and other reasons.

In the report we apply a broad definition of REDD, including both reduced emissions and enhancements of carbon stocks ("REDD-plus"[9]) (see next chapter).

1.2 SCOPE AND APPROACH

The report is written particularly for stakeholders, negotiators and decision-makers in developing countries with an interest in REDD. It should also be of relevance to the wider international REDD discussions, as the issue of BS, as mentioned, is not only a national level concern, but an integral part of a well-functioning international REDD set-up. The report's perhaps main contribution lies in providing a first attempt at raising and discussing important issues related to BS mechanisms, to draw on experiences from such mechanisms already in use in the forest sector and to relate these lessons to BS for REDD.

A small part of the poverty-REDD nexus addressed

The report is not an attempt at addressing the poverty dimensions of REDD more generally[10], but limits its attention to a small part of this nexus (as how benefits are shared certainly have poverty implications when poor and vulnerable groups are involved). Although we recognize the importance of considering distributions of costs and burdens of REDD in tandem with BS, we focus for simplicity most of our discussions on experiences and systems for BS[11].

We also focus our attention on monetary benefits, or revenues, for emission reductions, not other (co-)benefits (e.g. other environmental services, biodiversity or broader positive impacts or benefits from REDD)[12]. This means specifically performance-based payments for emission reductions and carbon stock enhancements, not "sharing" of funds for the ongoing preparatory stages of REDD ("REDD Readiness"). As we are mainly concerned with the set-up of REDD at the national level, the report does not evaluate financial or institutional options currently discussed at the international level or the equity implications of these between countries. Instead, we limit ourselves to discuss some BS conditions or requirements to national BS mechanisms that could follow from the international funding for REDD.

Finally, the report does not aim at this early stage of REDD to prescribe optimal or detailed BS mechanisms, but rather to raise and discuss some important issues and principles for the further consideration of BS under REDD. Many of the challenges of relevance for BS (e.g. governance) may also be important for REDD implementation more generally. A draft of this report was presented for discussion at the COP 15 in Copenhagen, 7-18. December 2009. This final version of the report incorporates comments and further country case studies and lessons.

Desk review of experiences and country studies

In terms of methodological approach, the report is primarily based on a broad survey of the forest conservation and management literature and the emerging REDD literature.

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[9] For simplicity and ease of reading we use the term "REDD", rather than "REDD-plus" meaning the wider interpretation of the term. In some headings etc. we use the full term to emphasize this meaning.

[10] See Peskett et al. (2008) for a study addressing poverty and REDD more generally.

[11] We touch on the issue of costs and burdens more indirectly. For example, the costs or sacrifices stakeholders make to implement REDD activities are an important criterion for deciding how to distribute benefits (see for example Streck 2009).

[12] We acknowledge that such benefits as well as costs may accrue to (or fall on) different groups and are important to consider in broader considerations of BS.

Specifically, we review integrated conservation and development projects (ICDPs) and protected area (PA) management, payment for forest environmental services, clean development mechanism (CDM)[13] and voluntary carbon markets, community forestry and production forestry. These may all be avenues for future REDD actions. In other areas, we review BS under the UN Convention on Biological Diversity (CBD), extractive resources and safeguard policies for infrastructure projects.

Although the literature on forest conservation and management is extensive, the issue of BS has rarely been carefully studied. This is why experiences from extractive industries, where BS issues have been given more attention, are potentially important. The revenues from such resources were always much larger than for forest conservation and management, but REDD funding would have to go far beyond current levels of forest funding to have the desired impacts. Another parallel to extractive natural resources such as oil and gas is also evident. REDD payments from developed countries will some time in the future – by mechanism design – have to stop. Then developing countries themselves have to take over the full responsibility for their carbon stocks. Hence, REDD benefits are an exhaustible resource in that regard.

Further, some of the issues have been discussed with selected professionals and stake-holders who have participated at dialogue meetings organized as part of the mentioned NORAD project. The report also draws on three rapid field studies of actual BS systems in the forestry sectors of Cameroon, Ghana and Guatemala conducted between October 2009 and January 2010. Examples from these are integrated into the main report (e.g. as text box examples) and main lessons are drawn out in a brief, separate chapter[14].

1.3 OUTLINE AND READER'S GUIDE

The report is structured as follows. Chapter 2 first briefly explains the overall idea and scope of REDD. Further, the chapter explains the main types of costs and benefits of REDD activities and some of the main factors that will drive the amount of funding that may be available for REDD activities in tropical forest countries. The last part of the chapter presents some estimates of required financing from developed countries to make REDD work at the desired scale. It then explains the major channels of finance and the proposed three-phased model of REDD implementation currently accepted by many countries (Meridian Institute 2009a). Those who are familiar with the main issues of REDD may skip this chapter, though the relevance to BS lies in understanding what determines the benefits (and costs) and how large these may be overall for tropical forest countries. More detailed discussions of REDD are given in Angelsen (2008) and Meridian Institute (2009b) (international architecture), Eliasch (2008) (financing), Angelsen et al. (2009) (national architecture), and Meridian Institute (2009a) (the three phases).

Chapter 3 first defines and clarifies what BS is and why it should be done – for REDD revenues as for other resource revenues. It is an attempt to delve a bit deeper into the issue than a simple discussion of percentage distribution between stakeholders. The second part of the chapter describes four options for distributing REDD payments from the national level, the concepts of vertical and horizontal BS and the stakeholders or beneficiaries involved in relation to different types of REDD policies and measures (PAMs). Chapter 3 aims to give the necessary background and framework to better appreciate the analysis of existing BS mechanisms in the forest sector more generally

[13] CDM is an arrangement under the Kyoto Protocol allowing industrialized countries with a greenhouse gas reduction commitment to invest in ventures that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries.

[14] Brief country reports are published under separate covers.

(Chapter 4) and in the case study countries (Chapter 5) and in other areas (Chapter 6). Chapters 4 and 6 end by drawing out some main lessons from existing BS systems. Chapter 7 attempts to apply these lessons to the design and implementation of national BS mechanisms for REDD. Specifically, we develop five features characterizing well-functioning BS systems. The unnumbered first chapter serves both as a summary of the report as well as a concluding chapter.

2 BENEFITS, COSTS AND FINANCING OF REDD-PLUS

2.1 ESSENTIALS OF REDD-PLUS

Deforestation accounts for around 15 percent[15] of global greenhouse gas emissions (GHGs). Combating deforestation is therefore seen as a crucial mitigation strategy to constrain the temperature increase on Earth below 2 degrees Celsius. In addition, it is considered less costly than many other emissions reductions (see Chapters 2.2 and 2.3).

Scope and meaning of REDD-plus

REDD stands for the objective of "reducing emissions from deforestation and forest degradation". More specifically, in the climate discussions, it primarily refers to two things (Angelsen and Wertz-Kanounnikoff 2008):

(1) A mechanism of payments to developing countries for activities achieving REDD, as compared to emission levels in the absence of a mechanism (business-as-usual)

(2) Preparation ("readiness") activities enabling developing countries to participate in a REDD mechanism.

The basis for REDD in the climate negotiations comes from the decision in the Bali Road Map of the UNFCCC COP-13 in 2007, calling 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; {1.(b)(iii)}".

This represents what has come to be known as "REDD-plus", a broad interpretation of the scope of credible mitigation activities in the forest sector, including actions that both affect forest cover and carbon density (see Table 2.1 below). Though not universally agreed, the REDD-plus scope is generally seen as required for the mechanism to be able to deliver emission reductions at the necessary scale and to make sure incentives are aligned across different forest mitigation options[16].

Table 2.1 Possible scope of activities under REDD-plus

Changes in:	Reduced negative change	Enhanced positive change
Forest area (hectare)	Avoided deforestation	Afforestation and reforestation (A/R)
Carbon density (carbon per hectare)	Avoided degradation	Forest restoration and rehabilitation (carbon stock enhancement)

Source: Meridian Institute (2009a)

[15] Current estimates vary from around 12 percent to at least 20 percent.

[16] Ultimately, other land-uses may be included in the future to reduce emissions from for example soils.

Model of REDD-plus system at different levels

Though there is broad agreement among most countries that it is important to include REDD efforts in developing countries as part of a new climate policy regime, it is not decided how exactly such activities would be included. Two main options are discussed:

(1) A separate REDD mechanism (around which most of the discussions have centered to date), or

(2) Integrated into broader mitigation strategies as part of low-carbon paths in developing countries17.

Figure 2.1 below depicts a useful model illustrating the different levels involved in payments and emissions reductions under REDD (when seen as a separate mechanism). REDD is at its core a so-called payment for environmental service (PES) scheme on an international scale. Implementing REDD activities on the national level can include a number of policies and measures (PAMs), one of which could be a national level PES scheme targeting main agents at the local levels, as also illustrated in the figure.

As mentioned in the introduction, most of the discussions so far have focused on set-up and financing options of REDD at the international level. Finance options include aid (official development assistance (ODA), especially for preparation or "readiness" activities), a fund mechanism under the UNFCCC, voluntary donations and funds outside the UNFCCC (or in an interim period[18]), or compliance-based finance[19] (either through carbon trading markets or different types of funds). The implementation of REDD in different countries is seen to go through three phases:

(1) REDD readiness and strategy development,

(2) Implementation of PAMs, and

(3) Compliance-based payments.

These phases, the related financing mechanisms and the likely required levels of such payments are discussed in Chapter 2.3 below.

The model in Figure 2.1 is also useful for thinking about benefit sharing (BS) (Angelsen and Wertz-Kanounnikoff 2008). BS can take place vertically between national and local levels and within levels (see Chapter 3).

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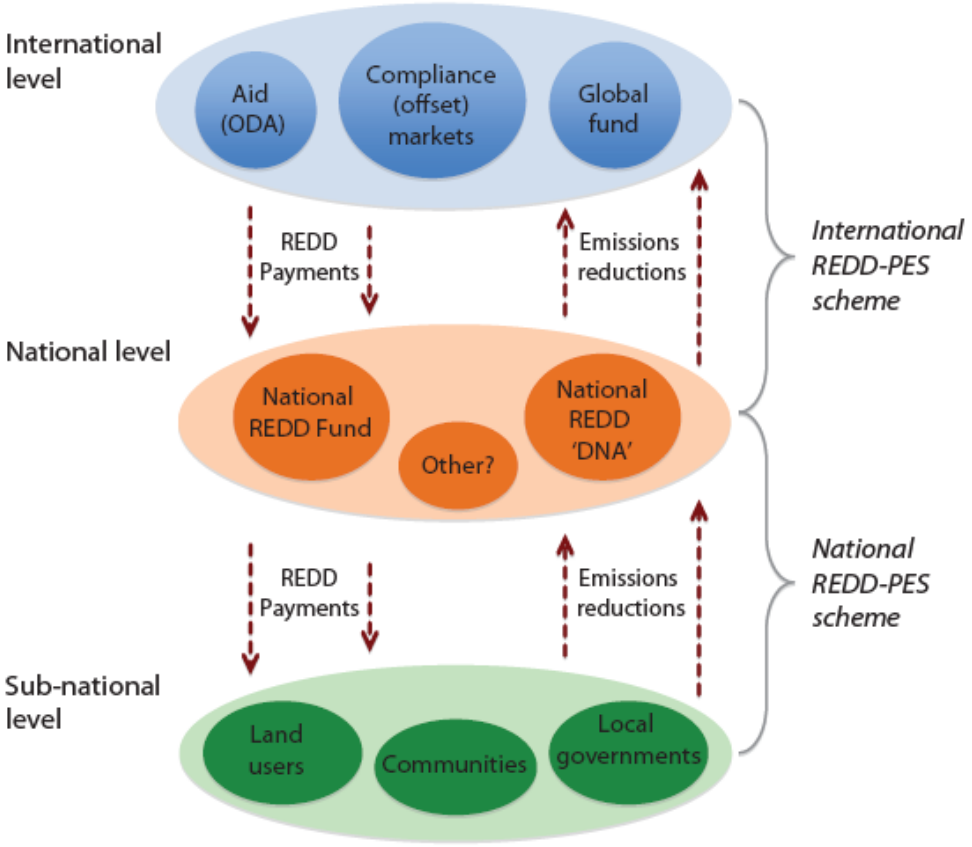
17 Before the Copenhagen meeting a competing proposal was floated by the USA in coalition with a few other countries proposing REDD as part of developing countries' low carbon strategies and not as separate mechanism.

18 The ("Informal working group for interim finance" has proposed a funding mechanism from 2010 to 2015 bridging the period up to the point where a formal UNFCCC funding mechanism could be in place (see http://www.regjeringen.no/upload/MD/Vedlegg/Klima/klima_skogprosjektet/Report_of_the_Informal_Working_Group_on_Interim_Finance_for_REDD-plus__IWG_IFR____October_2009_Final.pdf [accessed November 2009].

19 Where REDD credits can used by countries which have taken on emission reduction targets as offsets to fulfill their commitments.

Figure 2.1 Model of multi-level payments and emission reductions under REDD



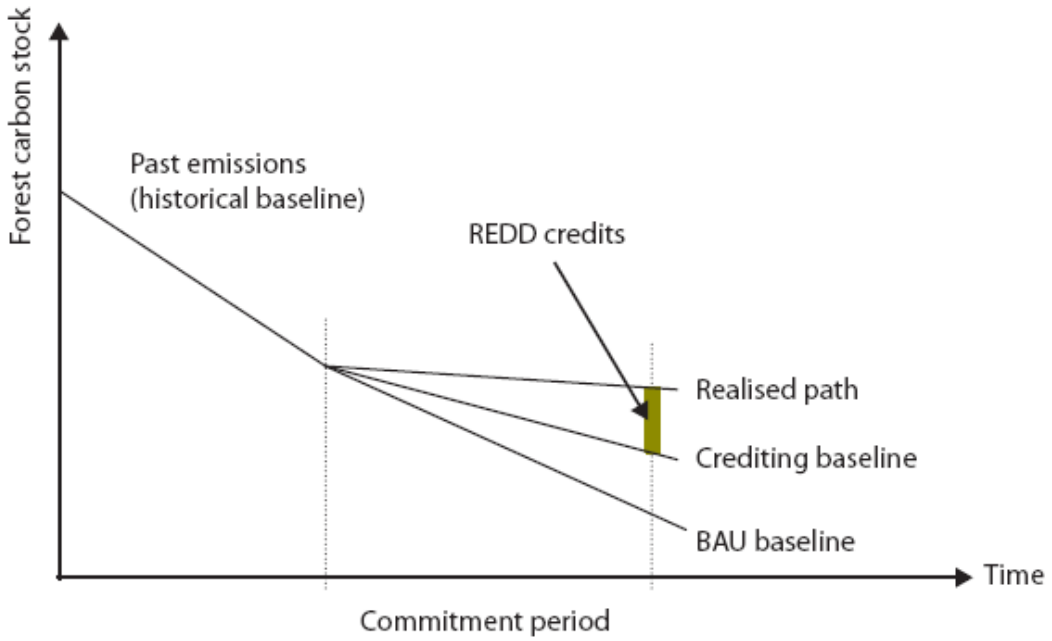
Source: Angelsen and Wertz-Kanounnikoff (2008). Key: PES = payment for environmental services, DNA = designated national authority. ODA = Official development assistance.

Payments depend crucially on how the reference level is set

The payments for REDD, and the corresponding REDD credits, will be calculated based on a comparison of achieved emissions reductions and the hypothetical emission path (reference or business-as-usual level) in the absence of the REDD mechanism. As illustrated in Figure 2.2, for various reasons[20], the country may only be paid for a share of these emission reductions, i.e. the difference between the realized emission path and the so-called crediting baseline.

[20] If there are uncertainties for example related to the permanence or accuracy of carbon measurements related to the REDD activities, this wedge may be interpreted as a buffer. Depending on which level of economic development a country is, the difference may also be due to some sharing of responsibility for better forest management.

Figure 2.2 Emission reductions compared to crediting and business as usual baselines



Source: Angelsen (2008)

How to determine the reference and crediting baselines is both a technical, political and emission rights issue (see for example Angelsen 2008, Streck 2009). It is one of the most important factors determining the potential funding available for different countries. Historical deforestation rates are a typical starting point, but this may need to be adjusted for where countries are on the U-shaped forest transition curve (starting from high forest cover and low deforestation rates, through a stage of higher deforestation rates, ending at lower forest cover and re-growth, the stage at which many industrialized countries are today). It is generally agreed that for the longer term and to ensure the environmental integrity[21] of the mechanism it is important not just to provide REDD payments to high forest cover - high deforestation countries, but also to give incentives to developing countries at other stages (i.e. to maintain and enhance carbon stocks).

A number of other technical issues related to REDD are yet to be resolved, e.g. monitoring, reporting and verification (MRV) systems, how to avoid leakage (displacing deforestation elsewhere) and permanence (lasting reductions). Discussion of these is well beyond the scope of this study[22]. We will only note that, in addition to the calculation of reference levels, how some of the other issues are resolved may also have a bearing on the amount of REDD funds available to be shared within a particular country.

It is worth emphasizing that the potential payments for REDD are not meant to be permanent, but will cease at some point in the future. This will take place through a gradual transition to a situation where developing countries take the full responsibility for maintaining their own carbon stocks, possibly as part of a system where such countries have taken on emission reduction targets. The exact point in time, i.e. where the reference level will converge with the realized emission level, will likely vary between countries, for

[21] I.e. to be sure that emission reductions are real and additional to what would have happened anyway, and that reduced deforestation in one place is not just balanced out by increased deforestation elsewhere (so-called leakage).

[22] An early attempt to summarize potential solutions to these issues is given in Angelsen et al. (2008).

example depending on the level of economic development and stage of forest transition. This will also be an issue for negotiation.

2.2 EXPLAINING BENEFITS AND COSTS OF REDD-PLUS POLICIES

Policies and measures (PAMs) under REDD-plus

According to IPCC (2007) some 75 per cent of all deforestation is caused by poor farmers using shifting cultivation[23], small-scale cash crop farmers and large scale companies clearing forest land for crops and cattle. The remaining 25 percent stem from a number of sources.

The main reason for continued deforestation and forest degradation is that the range of benefits from conserving or sustainably managing a forest typically cannot be captured in the marketplace by the forest owner or manager. The private value of forest conservation is typically lower than the private value of the alternatives, such as agriculture or animal grazing (the opportunity cost[24]). If parts of the value of the wider public goods of forest conservation, including carbon sequestration and other environmental services, could be captured by the forest owner in terms of income, his decision would in many cases tip in the other direction[25] (see example in Chapter 4.3). Hence, the main idea of REDD is to put an explicit market value or price on the carbon sequestration service of forests, so that decision-makers at different levels will take this value into account in their land-use decisions. This extends from the poor farmers and forest-dwellers at the local level all the way up to ministers in central government.

There are a number of REDD policies and measures (so-called PAMs) on the national level that can effectively "internalize" the wider forest benefits into the REDD market place and thereby reduce emissions. Angelsen (2009) categorizes the main policy options to reduce deforestation into four main areas (see Table 2.2).

[23] As cited by Angelsen (2009). Also known as slash and burn or swidden agriculture.

[24] The economic returns to converting forest to other uses minus the current economic benefits derived from the standing forest.

[25] Some deforestation and forest degradation would in any case be desirable for society, even if all benefits of forested could be priced. That is because the benefits of logging and other land uses in some cases are higher than the sum of carbon and other environmental services and market values of any sustainably harvested non-timber forest products.

Table 2.2 Policy options to reduce deforestation

1.Reduce (extensive) agriculture rent
▪ Depressing agricultural prices ▪ Creating off-farm opportunities for labour ▪ Support to intensive (lowland) agriculture ▪ Selective support to extensive (upland and frontier) agriculture ▪ Avoid extensive road building ▪ More secure property rights
2.Increase forest rent and its capture
▪ Higher price of forest products ▪ Community forest management – capture local public goods ▪ Payment for environmental services – capturing global public goods
3. Protected Areas (PA)
▪ Expand (and strengthen) forest PA networks
4. Cross-cutting policies
▪ Good governance ▪ Decentralization

Source: Adopted from Angelsen (2009)

The cost per ton CO_2 reduced through a REDD mechanism vary with the type of PAMs, but is generally found to be very low compared to more conventional mitigation measures in other sectors. The cost per ton is particularly sensitive to the value of alternative uses of land (typically agriculture), i.e. the opportunity cost. McKinsey and Company (2009) ranks some main PAMs by cost per ton and finds that the cheapest measure is to reduce deforestation from slash and burn agriculture conversion, at less than Euro 2 per ton. Reducing intensive agriculture conversion is estimated as the most expensive of the forest measures at around Euro 27 per ton. There are also other costs involved in implementing REDD, such as the cost of administration and capacity building (see Chapter 2.3 below). The costs of REDD is an important factor in determining the benefits available for sharing, as discussed below.

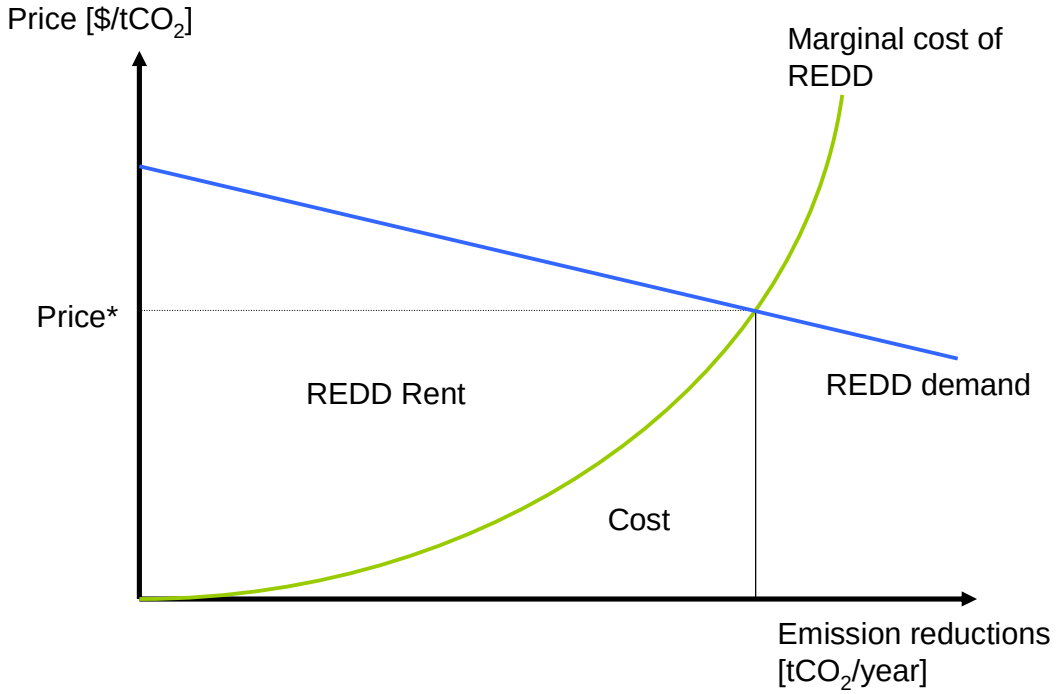
Benefits available for sharing depend on REDD-plus demand and costs

The interplay between the supply of available REDD credits that can be delivered through various PAMs and the demand for such credits is illustrated in Figure 2.3. The upward sloping supply curve reflects the marginal costs of different REDD credits, in this case including opportunity costs[26] of different land uses and the transactions costs[27]. The area

[26] Opportunity cost is the revenues foregone from alternative land-uses like agriculture, cattle grazing etc.

under the marginal cost curve equals the total costs of emission reductions. The downward sloping demand curve illustrates the value attached to such REDD credits by developed countries. The more developed countries have to pay for the credits, the less they want to buy as they can reduce emissions more cheaply elsewhere. Similarly, there are some measures that can reduce emissions very cheaply, but when these are taken the higher costs will be for additional measures. This is why the marginal supply curve is increasing.

Figure 2.3 Supply and demand for REDD



Source: Authors' own interpretation, based on a common diagram in the REDD literature.

One important aspect of this figure is that it demonstrates that the total payments for tropical forest countries will crucially depend on whether developed countries only cover the costs of REDD measures or pay the same price for all emission reductions (up to where the two curves cross and supply equals demand). In a competitive market, there will only be one price for REDD credits (and possibly all emission reductions also from other sectors). The difference between the costs and the price paid is called the *REDD rent*, as indicated in the figure.

The design of the international REDD mechanism would have implications for whether and how much REDD rent would be paid for emissions reductions by developing countries. In a situation where there are a few large countries participating, and not a free, competitive market for REDD credits, there may be negotiations about prices for credits. There may be so-called market power both on the supply and demand side[28]. The international mechanism for REDD may therefore be important for the size of payments to

[27] Transaction costs can be understood as all the costs involved in making and enforcing the carbon transaction, for example calculating reference emission levels, setting up contractual arrangements, monitoring and verifaction protocols, preparing with documentation etc.

[28] Resources for the Future (RFF 2009), for example, has recently suggested that the USA set up a separate fund that can negotiate purchases of REDD credits from developing countries in order to exploit its market power and get lower prices.

tropical forest countries. It is also likely that the prices of credits will be low in the first few years and increase gradually as the value of carbon increases.

While developed countries are interested in achieving emissions reductions at the least possible cost, and therefore only cover opportunity costs, developing countries will have an interest in earning a rent on their emission reductions – as for any other traded good. This issue is therefore a point of negotiation between the two groups of countries. Neutrally considered it is of course an advantage for the climate to be able to achieve emission reductions as cheaply as possible (especially as costs may be the most important limiting factor to reduce emissions sufficiently).

Another point worth making in relation to Figure 2.3 is related to the likely wedge between the reference (business-as-usual) and crediting baselines. If developing countries only get paid for a share of the emission reductions, they may in a market situation where one price is paid, still get covered the costs of these reductions through REDD rent on the payable emission reductions (see Angelsen 2008: page 59). In other words, the area of the graph defining the REDD rent may be larger than the area between the reference and crediting baselines.

So, what is the REDD benefit available to share? In principle, the direct costs are paid to *compensate* for necessary changes of management practices or land use and are not benefits *per se*. The net benefit available for sharing is strictly speaking the REDD rent. However, when considering the whole host of PAMs and the difficulty of separating between REDD rent and compensation for costs, we will adopt a broader interpretation and consider all REDD revenues flowing to a developing country as “REDD benefits” for sharing. We will come back to this issue further in Chapter 3.

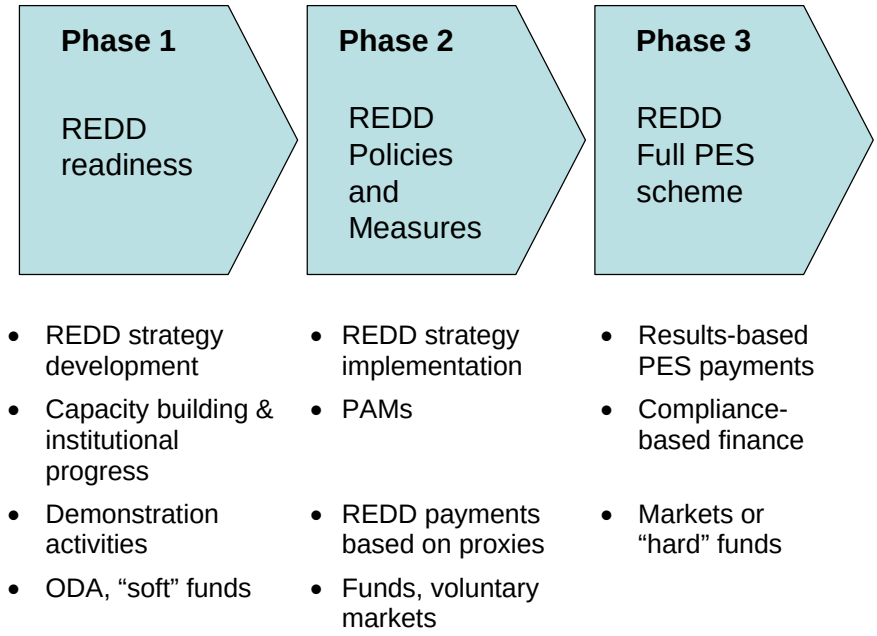
2.3 FINANCING AND IMPLEMENTATION PHASES

This section gives a brief overview of some recent estimates of what the financing needs are to cover the opportunity and other costs of REDD implementation, the instruments that are currently discussed to deliver this finance and the relation to widely accepted phases of REDD implementation.

The three phases of REDD implementation

In the international debate on REDD a consensus has emerged that a phased approach is necessary in order to bring countries through from the preparation to the implementation stage, see Figure 2.4.

Figure 2.4 The three phases of REDD implementation



Source: The authors

As shown in Figure 2.4, different financial instruments will likely be required at different stages (Meridian Institute 2009a):

- ***Phase 1 – Readiness:*** an initial support instrument which allows countries to access immediate international funding for national REDD strategy development, including national dialogue and consultations processes, institutional strengthening and demonstration activities. During this preparation phase, costs are mainly related to readiness and upfront actions as well as ongoing capacity building and institutional strengthening. It is estimated that a typical forest country will have to spend around USD 91 million in total on readiness activities, such as strategy development, establishment of emission reference level, land-tenure reform, monitoring and various reforms of legal and institutional framework (Eliasch 2008). Relevant funding sources could be voluntary contributions, bilateral funds and multilateral schemes such as the Forest Partnership facility of the World Bank (FCPF) and UN-REDD, i.e. typically ODA (see also Figure 2.1). This phase is currently ongoing in several tropical forest countries. The length of this phase will be very country specific. Brazil, for example, is quite advanced in some areas (e.g. deforestation monitoring), while others are likely to need many years to get the necessary systems in place.
- ***Phase 2 – Implementation of policies and measures (PAMs):*** a fund-based instrument which allows countries to access predictable REDD finance based on agreed criteria (either a funding mechanism under the UNFCCC or an interim mechanism). This support has to be results-based, and evaluated not only by emission reductions but also by other progress criteria, much like (other) development assistance. In the REDD strategy phase, costs will be related to implementation of various PAMs. Estimations of total financing needs to cover the opportunity costs of reducing deforestation are offered by numerous studies; an overview can e.g. be found in Meridian Institute (2009a). There are several funds available both at the multilateral and national levels, in addition to sources from various NGO's and the private sector that can be used for this purpose. One example here is Brazil's

Amazon Fund which was established in 2008 and is intended as a means to obtaining additional resources towards the implementation of an action plan on Protection and Control of Deforestation in the Amazon rainforest in Brazil[29]. The payments to this fund (e.g. from Norway) is based on documented and verified emission reductions. There are also other similar regional and national (bilateral) funds under establishment, for example the Congo Basin Forest Fund[30].

- ***Phase 3 – Full PES scheme:*** a GHG-based instrument which rewards performance on the basis of quantified forest emissions and removals only, measured against agreed reference levels. Payments would typically come from compliance-based finance, either from different types of funds or through full or partial integration with international emission trading markets. Full market integration is the most advanced stage and will take the longest to develop, but it is also the instrument that has the largest potential to fill the funding gap for REDD. This is because the private sector will be involved to a much larger extent to offset emission reduction requirements compared to public funding.

Funding needs and available finance

There are many recent studies which aim at estimating the funding needs to cover the costs of REDD during the preparation and implementation phases. They use a range of methodologies and assumptions which makes it hard to compare the cost estimates. The data used in the analysis are not consistent between studies, with gaps for some countries and for some time periods. Neef and Ascui (2009) estimate that the minimum annual cost of achieving any meaningful reduction in emissions from forests is USD 2.5 billion per year. This amount ignores upfront capacity building costs and only focus on the ongoing opportunity and forest protection cost. Another estimate offered in the Eliasch Review (2008) amounts to USD 17-33 billion per year for a 50 percent reduction in emissions from deforestation by 2030.

The Meridian Institute (2009a) summarizes estimates in the literature of the funding needs for REDD. They conclude that REDD readiness and implementation costs for a 50 percent global reduction in forest emissions will range from USD 15 to USD 35 billion per year. There are contributions planned to fund this need by multilateral organizations such as the World Bank and UN-REDD as well as bilateral and private sector. However, the funds currently available[31] are about USD 2 billion, which leaves a substantial gap to be filled[32].

The details of financing options and REDD architecture remain unclear and is a matter of discussion and negotiation. There are several key design options that will have a large influence on the ability of the REDD mechanism to raise capital and cover the costs (Neef and Ascui 2009). This includes for instance the choice of a market or fund(s) as the main financing mechanism for emission reductions, and whether crediting should be at either national or project level. A nested approach combining both markets and different types of funds within the same overall REDD mechanism is a likely option. Perhaps most importantly, the choice between a voluntary and regulatory (compliance) approach is fundamental.

The voluntary carbon market has so far not been able to raise the necessary capital for REDD, and although it is growing it is estimated that total transactions in 2015 could be

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29 See http://www.amazonfund.org/ for further details.

30 This is administered by the African Development Bank. More information available at: http://www.cbf-fund.org/

31 Pre Copenhagen.

32 See Annex 2 of Meridian Institute (2009a) for details.

around USD 380 million (Neef and Ascui 2009). Other sources of funding such as official development assistance to forestry amounted to USD 564 million per year in the period 1996 to 2004, while the annual funding of GEF for the period 2006-2010 is USD 782 million. In contrast to these relatively small amounts, the ability to raise capital by trading carbon credits under the Kyoto protocol regulated marked is estimated at around USD 7.8 billion per year. An extended Kyoto regime including REDD credits into the larger compliance market therefore seems to be the most promising, if not the only realistic, option for REDD financing (Neef and Ascui 2009).

This chapter has summarized the basics of REDD and demonstrated that the size of the potential REDD pie – the stream of revenues – available for sharing depends on a number of different issues, notably the scope of credible activities, reference levels, types and costs of policies and measures, prices of REDD credits and the international financing options currently under negotiation.

3 WHAT IS BENEFIT SHARING?

This chapter first explains what benefit sharing (BS) is and discusses reasons why it is important – for REDD and more generally. Second, we explain some options for how international REDD finance can be distributed nationally on an overall level (i.e. type of administrative or institutional set-up), and describe types of vertical and horizontal BS and the stakeholders or beneficiaries involved in relation to different types of policies and measures (PAMs).

3.1 WHY SHARE BENEFITS?

Definition of BS

Benefit or revenue sharing mechanisms can in the context of REDD be defined as:

> "Agreements between stakeholders, such as private sector, local communities, government and non-profit organizations, about the equitable distribution of benefits related to the commercialization of forest carbon"

This definition is adapted from the UN's Food and Agriculture Organization's (FAO) definition related specifically to commercialization of different products from forests[33]. The World Bank (2009) notes that BS arrangements are distinguished from partnerships in that stakeholders (e.g. communities) can receive a share of the benefits without being engaged in productive activities. In the case of REDD, there are three main types of revenues for stakeholders:

(1) Compensation for the opportunity costs of changing land use (i.e. to reduce emissions),

(2) Payments for productive activities that store more carbon (the "plus" in "REDD-plus")[34], and

(3) Distribution of REDD rent, the "carbon profits".

In relation to REDD the benefits for sharing include, as mentioned earlier, only the monetary transfers from the international community for emission reductions or carbon sink enhancements, not other non-monetary benefits or co-benefits from more carbon friendly forest management (such as non-forest environmental services, biodiversity conservation, local economic development, and improved rights and governance).

When talking about BS mechanisms in the following we do not just think of actual agreements or partnerships between stakeholders (formal or informal), but about the broader institutional set-up in place to deliver and manage such monetary benefits or revenues.

Two main reasons to share benefits

The main underlying idea of BS is that the financial revenues from the extraction and commercialization of a natural resource should not only benefit the agent(s) who directly or indirectly exploits the resource, but a wider constituency of stakeholders. Why? In principle, there are two main reasons to share benefits:

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[33] http://www.fao.org/forestry/5836/en/ [accessed November 2009]

[34] In World Bank (2009) sharing of revenues under 2 between e.g. local communities and the government would be called partnership.

- ***Create incentives***[35]**:** To reward individual agents or communities for engaging in desired behavior (typically behavior which is in society's wider interest), i.e. REDD agents see and factor the value of carbon into their decisions affecting forests. This means *compensating* decision-makers for any sacrifice they must make to achieve reduced emissions or enhanced carbon stocks compared to business-as-usual. This reward would be for the costs of changing otherwise legal deforestation and degradation or for enhancing carbon stocks (not a reward for halting illegal activities[36]).
- ***Create legitimacy:*** The utilization of natural resources and the use of revenues – either by government, business or civil society – require that the majority of affected people and the wider society see the activities as legitimate. This means that people directly affected and the wider public are perceived to be treated fairly and equitably. For REDD, this may not just mean that the majority of stakeholders nationally must perceive REDD activities and the level of BS as legitimate, but possibly also the broader international community. If BS from REDD is not seen as legitimate and politically acceptable, the mechanism will not work, due to possible conflicts between resource users, people breaking regulations or informal rules, necessary funding from developed countries may be held back etc[37].

Sometimes when evaluating and comparing policy measures three criteria are used: effectiveness (achieving emission reductions and stock enhancements), efficiency (minimum cost) and equity (fair distribution). Sometimes a fourth criterion is added: political legitimacy. To assess the suitability of different BS sharing mechanisms, in our discussion we loosely collapse these four into the two main aims above: Create incentives (is about effectiveness and efficiency) and legitimacy (is about equity, political and wider acceptability).

Stakeholders and the role of government in BS

It can be noted from the definition above that BS mechanisms need not involve the government, though they typically do – directly or indirectly. In some cases NGOs or a private company may negotiate and set up an agreement for a REDD project directly, without government involvement, with for example a community. This could for example be a payment for an ecosystem service scheme or cooperation on a community forestry project.

But even if the government is not directly involved in this type of agreement, it is likely to be indirectly involved through regulating how transactions between non-government actors should be set up, for example to ensure BS, an environmentally responsible project etc. As will be discussed in Chapter 7.1, such regulations (or less strict: guidelines) may

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[35] An incentive is anything that motivates or stimulates people to act in certain ways, for example to manage forests more sustainably. An important group of incentives involve payments, subsidies or direct benefits people receive for changing their behavior, for example in payment for environmental services.

[36] It may sound obvious that those who conduct illegal activities should not be compensated to stop. However, it is difficult to define and decide what is illegal in practice. As pointed out by Angelsen (pers.com.) Indonesia has in the past had a law making shifting cultivation illegal, but should that mean that all poor farmers should not be compensated? Large scale timber and oil plantations are allocated in ways that may not be directly illegal, but still reflect current power structures. Should such actors be compensated? Hence, this is difficult to decide in practice. Another point is that if full compensation is paid widely also to those who conduct illegal activities, it may undermine the legitimacy of the mechanism.

[37] Börner and Wunder (2008:508) also make this point in the context of REDD in Brazil: "..for a REDD program to be politically acceptable in Brazil, and to avoid leakage to the small-holder sector, it may turn out to be beneficial to invest more than threat-proportional share of REDD money into rewarding good forest stewards and local communities for assistance in monitoring protected areas. A general sense of fairness will be crucial for the political acceptance of REDD, both in environmental service buyer and seller communities".

be specified in the set-up of the international REDD mechanism or be left for individual countries to decide.

For many types of REDD policies and measures, for example the regulation of commercial forestry concessions, the government will be a direct party in any BS agreement and will have to decide how revenues should be shared and distributed.

The reasons for creating incentives and legitimacy through BS are perhaps quite abstract, but when considering them carefully, they are fundamental. They are also closely linked, as one needs to have both in mind when designing BS mechanisms. Some examples will make this more clear, starting with legitimacy.

Reason 1: Why legitimacy is important

A government of a country which is well-stocked with oil and gas resources can have those resources exploited, but unless revenues are seen to be shared locally with (typically negatively) affected communities and with the wider population, both constituencies will turn against the activity. Locally this can result in the destruction of facilities and infrastructure (as seen in Nigeria) or lower support for the government (eventually leading to full distrust between the government and the population, as seen in many resource-rich developing countries).

Similarly, a company that operates a deep mine for diamonds in an area where traditional resource users are affected, needs not just to obtain a "license to operate" with the local communities by sharing revenues and offer jobs etc, but also to share some of the gains in the form of taxes with the broader population. Otherwise, the company may experience trouble locally and risk a tarnished reputation. In addition, it will not be seen as fair if the company does not pay taxes in order to contribute its share to the common expenditures of a country.

These issues transcend simply looking at who has the formal legal ownership of a natural resource or the land where the resource is located. It is generally not seen as legitimate that a resource owner keeps all the revenues to himself/herself. Traditionally, resources below the land surface are seen as state owned (such as oil, deep mines etc). Such resources are typically extracted by public companies or private companies under licenses/concession arrangements. The government collects taxes on the profits and the resource rent[38] for its general budget. This is then redistributed (in principle) across the whole population through funding government programs and sometimes more locally, as compensation to affected communities in the form of money transfers, infrastructure projects or similar.

For some natural resources, such as oil offshore or diamond mines, it is not obvious that communities that by historical coincidence happen to be located near the resource should receive more revenues than people living in other parts of the country where there are no such resources. On the contrary, it may be considered fair that such revenues are shared more widely. However, it is usually accepted that local communities receive compensation for any environmental or other harm caused by extraction or use of the resource. In some cases, for example for mines on Aboriginal lands in Australia, local communities receive a share of the proceeds from the mine in addition to compensatory measures in money or in kind. This is also the practice of international financing institutions such as the World Bank, which operate by specific safeguard procedures to compensate people who are affected by infrastructure projects and to encourage wider sharing of revenues (an example involving the construction of a pipeline is discussed in Chapter 6.4).

[38] Extraordinary profits, beyond covering costs and normal return on investment.

For forests, the form of ownership varies. Some countries have a high share of public ownership, others a high share of private (or even undetermined) ownership. In contrast to extractive resources such as oil, forests are sources of several types of revenues and benefits, to which many different stakeholders may have legal or customary rights. Depending on the revenue generating activities, some of the revenues may be shared as direct compensation (e.g. in case of a timber concession affecting local forest users) or as legitimate share of revenues for reasons related to formal or customary rights to forest resources and any revenues generated from these resources (such as non-timber and timber products from community owned forests). It is more complex to decide the right key to distribution of REDD revenues among stakeholders locally and more widely, compared to extractive resources such as oil and diamonds.

The question of who owns the carbon in a formal sense, which is often asked in the REDD debate, is perhaps not the most important question for the bigger picture (though clarity on this is essential for the implementation of REDD). A more overarching question is who needs to benefit from REDD for the mechanism to be seen as legitimate, so that different stakeholders which may have impacts on forests through their activities accept to participate constructively and not undermine REDD policies and measures. The answer to this question will partly depend on formal tenure rights and the ownership of carbon. However, we argue it will also crucially depend on who can be viewed as legitimate beneficiaries of resource revenues from a wider perspective. A wider group of beneficiaries should in many contexts be included in order to secure legitimacy. It is a controversial question in the REDD debate since different stakeholders will have different views about what is fair and equitable. Some governments claim all rights to carbon values while others devolve rights locally[39]. However, how rights are determined and benefits distributed have implications for incentives, as we discuss below.

Reason 2: The role of incentives and importance of BS

The government of any tropical forest country participating in REDD will have a number of policies and measures at its disposal to reduce emissions from deforestation and forest degradation. Some examples of these were given in Table 2.2. The most effective measures will depend on the specific drivers of deforestation and degradation in a particular country. In order to achieve emission reductions, it is essential that the national government devolve the national incentives created by the international REDD payments down to the local level – where the deforestation and degradation activities occur. Keeping carbon rights and REDD revenues entirely with the state will not give forest dependent people incentives to manage forests in a more carbon friendly way.

Often the central government does not have the information or capacity to exert full command and control of activities at the local level. Accordingly, stopping deforestation by prohibition or decree will not be effective in most countries. Instead, it is more effective to provide monetary rewards (and punishments) within a decentralized system. It must pay off for people, organizations, associations and companies to choose the right land-use decisions, and to participate in disciplining other stakeholders. However, it is also clear that economic incentives must be combined with strong enforcement of the rules, i.e. some degree of command and control is needed.

This means that REDD payments should at least cover the opportunity costs and other costs of agents engaging in legal land-use activities, in order for them to change to more carbon enhancing activities. In addition, the agents will require something on top of the cost – an extra reward for changing behavior (i.e. their part of the REDD rent, see chapter

[39] See for example Gould et al. (2008) for a discussion of carbon sequestration rights in Australia and New Zealand.

2.2). For those who are engaged in illegal deforestation activities, e.g. clearing of land for ranching in Brazil, they must be punished (fines, legal actions) so that their (expected) costs of continuing their activities are higher than conserving or managing the forest sustainably. In this case, punishments ("the stick") may be coupled effectively with rewards ("the carrot") providing subsidy payments for certain types of forest management which is better than continued deforestation. This will give incentives to change behavior, and create some legitimacy at the same time. REDD incentives must be provided so that the clearing of natural forests for the establishment of plantations, a general concern for the effectiveness and legitimacy of the mechanism, is avoided.

Some PAMs will not involve direct payments or incentives to local agents. Examples of relevant PAMs not involving BS are strengthening of tenure systems, improving forest law enforcement, removing (explicit and implicit) subsidies for agriculture and deforestation. However, they would typically be most effective when combined with some sort of compensation or rewards for alternative activities (e.g. alternative livelihood programs etc). Hence, most PAMs will require some BS to provide appropriate incentives and to ensure broad legitimacy.

The balance between legitimacy and appropriate incentives

In many cases there is a trade-off between legitimacy and effective incentives. Agents, for example a project developer who wants to invest in a forest management project, need to feel that they get sufficient reward for their investments. If too much of the surplus value generated by a project has to be shared and cannot be kept by the agent, the project will not be realized or will be smaller than desired. A high degree of BS with a local community may in this case be seen as legitimate by the local people, but not offer a strong enough incentive for the project developer to invest. And the project developer may not see for example a 50 per cent share of revenues to the government or local community as legitimate, and shy away.

It is important to keep in mind in the REDD discussion that the prosperity of developed countries generally has been created by rewarding individual initiative and effort, over any strong consideration of equity of BS (though there are differences between e.g. USA and Scandinavian countries). The main reason is that such systems typically generate a bigger pie to share. Hence, though REDD will not be the main catalyst of economic development in tropical countries, equity of BS under REDD should not overshadow the strong need for clear and efficient incentives.

This point is related to the trade-off in economics between efficiency and equity. Change in behavior that degrades forests needs to be sufficiently rewarded individually or collectively (e.g. a local community). Otherwise the change in behavior will not materialize or be less than what is desirable. Furthermore, if too many people benefit from something they have not actively contributed to (for reasons other than bad health, age etc) or have no acceptable claims to, then the legitimacy of the mechanism or system is undermined. The parallel is obvious in many parts of society. If people feel their incomes are taxed too heavily to support people who do not work or to cover "excessive" government expenditures, people's motivation to work will be reduced and informal sectors where tax is avoided will develop.

Another example of a trade off that may arise is between targeting the cheapest and most carbon effective actions first and supporting activities that involve a broader share of the poor population more directly (e.g. community forestry). Many smaller scale REDD projects locally which has the potential for wide disbursement of (small) benefits to many poor forest dependent people may be more expensive to implement and give less carbon than larger scale projects involving commercial operators. Chapter 4.3 and 4.4 give

examples of the importance of transaction costs in BS. In other words, the right balance needs to be struck between equitable BS and legitimacy of a national REDD mechanism on the one hand and the need for effective incentives to create cost efficient emission reductions and carbon stock enhancements on the other.

What is considered to be acceptable, "legitimate", or equitable will vary within and between countries. The trust between different beneficiaries in a BS agreement will also depend on history, culture and allegiance and identity, with a group (e.g. a tribe) and with a nation (if government is a partner in the agreement). In many African countries, for example, the national identity is weak and there is little trust between local people and central government.

In summary, for a REDD strategy to work in a developing country, the payments received from the international community will need to be translated into incentives that cover agents' opportunity costs plus an extra benefit for changing to carbon enhancing activities. However, at the same time, payments from REDD, and especially any "surplus" or REDD rent, must be distributed with the aim to build legitimacy and support for the REDD mechanism.

In Chapters 4, 5 and 6 we go through experiences and examples from BS mechanisms in the forest sector and other sectors, illustrating the importance of the two aims of BS.

3.2 HOW AND WITH WHOM?

The previous section discussed why BS is important for securing legitimacy and appropriate incentives for REDD. Below we describe more specifically how and to whom REDD benefits can be distributed.

National REDD set-up: Four options for distributing funds[40]

As discussed in Chapter 2, the level of finance for REDD and the international set-up determining how it will be delivered is still not decided. Vatn and Angelsen (2009) see the government in any REDD country as having four main functions or roles:

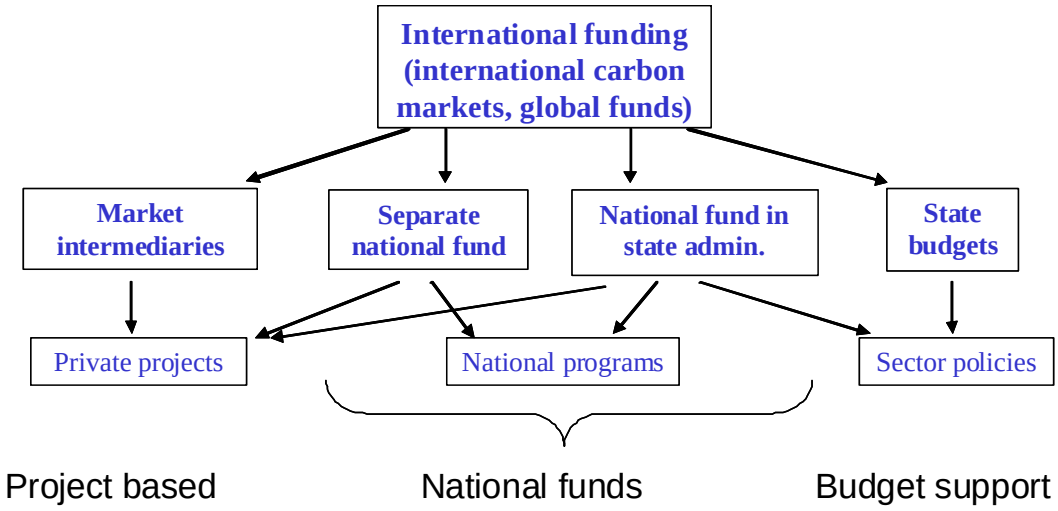
- ***Overall responsibility:*** REDD strategy development and implementation, stakeholder consultations, review of progress and reporting to relevant bodies.
- ***Channeling international funding:*** Disburse resources to relevant REDD activities.
- ***Coordinate activities across sectors:*** Process to assess activities outside the forest sector affecting REDD and initiate appropriate incentives.
- ***Monitoring and reporting:*** MRV, social and environmental safeguards, conflict/grievance procedures.

The second bullet is particularly related to setting up a national BS system, though the other functions will have to be closely linked with this system. Once received by a tropical forest country, Vatn and Angelsen (2009) see four main options for a national set-up through which REDD funds can be administered and channeled for implementing REDD policies and measures and distributing benefits – within and outside the forest sector (see Figure 3.1):

[40] This section is based on Vatn and Angelsen (2009)

1. ***Project-based funding:*** The private sector is directly involved in REDD projects on the ground which generates credits.
2. ***Separate REDD fund[41] outside state administration:*** A fund established outside the state administration, governed by a board which could include international and national representatives.
3. ***REDD fund within the government administration:*** A national fund which is established within existing structures of the state administration, with representatives from various national stakeholder groups on the board.
4. ***Regular budgets:*** Under this option REDD funds are distributed as general budget support through existing channels. The funds could also have some degree of earmarking attached.

Figure 3.1 Options for a national REDD set-up for channeling funds



Source: Vatn and Angelsen (2009)

A combination of project-based funding utilizing private sector involvement directly and a national fund for other REDD activities has been discussed as the most promising REDD mechanism internationally. This is sometimes referred to as the nested approach. An alternative only including project-based funding (like the current CDM) is not realistic, among others because the REDD requires broad reforms and government-wide involvement, not the least to deal with national level leakage and permanence of emission reductions.

Vatn and Angelsen evaluate the four options at the general level, in terms of political legitimacy on the national and international levels, governance and transparency, transaction costs, sector coordination, leakage and additionality, level of co-benefits and the need to change societal structures (e.g. property rights). The choice of national set-up for REDD will very much depend on the country and the specific circumstances. Further, different options will score differently along the criteria above depending on such circumstances.

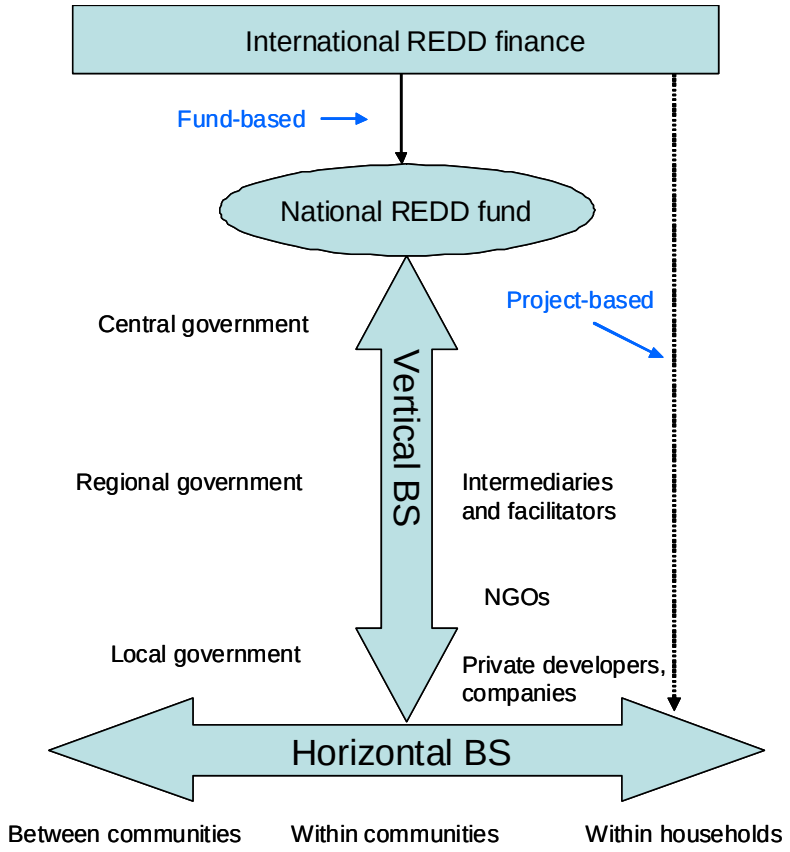
[41] In this context a "fund" does not necessarily entail the accumulation of assets. A fund could be an arrangement for the channeling of current receipts from the carbon.

It is clear that the choice of option (or combination of options), will have implications for how benefits could or should be shared and which types of stakeholders are likely to benefit. We return to some of these considerations, as relevant for BS, in Chapter 7.

Vertical and horizontal BS

The model discussed above only gives the general, overall framework for channeling REDD funds from the national level. Assuming some sort of national REDD fund in combination with project-based funding, as the most likely option, Figure 3.2 gives a more detailed model of vertical and horizontal BS.

Figure 3.2 Vertical and horizontal benefit sharing



Source: Adapted from Ellis-Jones (no date)

First, benefits can be channeled through government structures via regional government or directly to local government or communities from the national REDD fund, as indicated by the shaded vertical arrow. Non-governmental Organizations (NGOs) also operate on various levels as do various intermediaries and facilitators (e.g. project investors), all of which may receive funding for REDD activities vertically from a central national fund. In addition, some funds may go directly from international (or national) investors to the project and community level, as indicated by the dashed arrow to the right

Second, on the local level, benefits can be shared within and between communities and, at the lowest unit, between household members. This is indicated by the horizontal, shaded arrow. There is a range of potential stakeholders and beneficiaries at the local levels. They include community groups and organizations, villages, local government, NGOs as well commercial companies in the forest and other sectors.

Third, the vertical, shaded arrow also indicates a potential flow of revenues from the bottom up to the central government, i.e. from local communities, NGOs, project developers and other stakeholders involved in REDD activities at the local level. This can be taxes paid on carbon credits generated on forest land where the central government (the state) also has a stake. China, for example, has a tax on CDM project revenues, which keeps some of the CDM rent for the state (see Chapter 4.4).

There are a number of different stakeholders and potential beneficiaries at different levels and within and between communities. Different policies and measures will affect these stakeholders differently, and the systems for BS will depend on specific REDD actions promoted. We return to BS experiences in Chapter 4 for some potential REDD actions.

BS over time

In addition to the vertical and horizontal dimensions of BS, it is also worth noting that BS over time is also an important issue. As discussed in the previous section, BS outcomes will depend on whether only the cheapest REDD actions are chosen first at the expense of activities that have the potential to be more pro-poor. Further, REDD payments are finite and time-limited. Hence, the overall REDD payment schedule, which will be hard to predict, will depend on the development in costs and carbon prices and other factors. REDD actions on a grand scale today are likely to raise the value of timber and agricultural products – causing more pressure on forest resources. This will make certain REDD actions more expensive to implement and require higher compensations in the future to generate the same net benefits to be shared. Such factors may be important when considering BS between stakeholders over time. Poor and marginalized groups typically are much more in need than other groups of benefits today, rather than tomorrow. Appropriate BS mechanisms should take such issues into account.

Timing in BS could also be important for the creation of sufficient incentives. If benefits are paid prior to actual improvements in forest management, incentives to keep up the good management may prove insufficient late in the project cycle. If benefits are distributed much later than the agreed improvements in forest management has taken place, one may find in communities with weak traditions for contract enforcement that a lack of trust in future benefits coming, may stop proper action from taking place up front. Thus, one may find it optimal to distribute benefits more or less in step with the value of the sacrifices provided by the respective players.

PAMs and BS – learning from previous experiences

Based on the discussion above, it is clear that there are many potential types of BS mechanisms – differentiated by type of PAM, stakeholders involved (vertically and horizontally), type of revenues and delivery (in cash or in kind) and institutional set-up (who decides what, mechanism for delivery).

PAM and BS mechanisms must clearly be adapted to the specific circumstances where and when they are implemented. That is one reason why there is such a broad range of BS mechanism types. For some of these, goals have largely been met, while others might be considered failures – in terms of creating legitimacy and incentives. In the following three chapters we will present some BS arrangements. Some function in situations where actions are taken almost solely by professional investors or companies well integrated into the monetary economy and well used to formal contracts that are enforced in formal legal systems. In other cases, communities suffer from degradation of their environment and are compensated either through the sub-national government system or through tailor-made institutions set up to ensure dialogue and justice between parties who do not normally trust each other.

In Chapter 3.2 we referred to the categories of BS systems produced by Vatn and Angelsen. Although their categories are useful, it is only a first step in defining such schemes. In Chapter 4, we present some examples of BS schemes from the forest sector. They are particularly useful experiences as REDD implementation will have to consider using existing BS systems or create new, dedicated systems for REDD. That decision will depend on how well existing BS schemes have functioned. Chapter 5 presents summary findings from forest BS systems in Guatemala, Cameroon and Ghana. In Chapter 6, we present some examples from other areas, particularly BS under the UN Convention on Biological Diversity and experiences from extractive sectors. These experiences have many parallels to BS under REDD. The presentation is meant to show some of all the possibilities that exist, and also the importance of adapting the scheme to the particular situation in which the scheme shall function. In Chapter 7 we attempt to extract some lessons learnt and to present some key features of well-functioning BS systems.

4 BENEFIT SHARING EXPERIENCES FROM THE FOREST SECTOR

4.1 INTRODUCTION

Relevance of reviewed forest conservation and management types

This chapter reviews some of the experiences with benefit sharing (BS) related to five broad forest conservation and management types or actions:

- Integrated conservation and development projects (ICDP)
- Payment for forest environmental services (PES)
- Clean Development Mechanism (CDM) and voluntary carbon markets[42]
- Community forestry management (CFM)
- Sustainable forest management (SFM[43])

All of these five areas have lessons of relevance to national implementation of REDD and BS. ICDP, PES and CFM are likely policy options for reducing deforestation, as mentioned in Chapter 2[44]. It may also be possible to envisage more carbon friendly production forestry (e.g. through certification schemes) as a REDD policy option, though this is more controversial. All five areas may give insights into whether existing BS mechanisms function well and can be used to channel REDD funds or if new mechanisms need to be put in place.

ICDPs are projects with the primary purpose of conserving biodiversity within protected areas (PAs), while at the same time achieving social development goals. Payment for environmental services (PES) is a much more recent concept or type of regulation, which may or may not be part of ICDP initiatives. While ICDPs (and CFM) may provide in-kind or other benefits to stakeholders, the idea of PES is to reward much more directly through monetary payments to those who deliver certain types of environmental services. Both ICDPs and PES projects have particular challenges related to BS and poverty.

Experiences with projects under the CDM and voluntary carbon markets may be very useful since there is limited experience yet with REDD projects. While some projects generating carbon credits in the voluntary market have similarities with ICDP and particularly PES, such projects have their specific characteristics justifying a separate treatment.

The last two areas are community forest management (CFM) and sustainable forest management (SFM). SFM generates revenues primarily through harvesting timber, though non-timber forest products (NTFPs) may also be important. CFM aims at generating sustainable, forest-based revenues from timber and NTFPs for communities by devolving

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[42] Companies, individuals, and events buy emission reductions to reduce their carbon footprint. Voluntary carbon credits may also be traded in voluntary markets.

[43] There is some controversy about this term. Some organizations use the term “sustainably managed forests” to distinguish what they see as a more environmentally benign forestry practice than what they think is practiced by a large majority of the forestry industry (“SFM”). We use the term SFM in a neutral way here, not advancing any particular view on this controversy.

[44] See for example Angelsen et al. (2009) for a thorough review of these.

forest management responsibilities to the local level. There is a rich body of experiences with BS within community forestry spanning several decades.

Production forestry is typically carried out by commercial companies either on private land (or more commonly) under concessions in state owned natural forests[45]. Though large-scale logging in natural forests is seen as one of the culprits, making management requirements of some concessions more carbon-friendly (e.g. through types of certification schemes) may also be part of REDD strategies. The relevance for REDD of BS related to production forestry is linked to the experiences both with the taxes that companies typically are required to pay and share with local communities and government, and the direct local contributions in kind (e.g. schools and infrastructure) as corporate social responsibility actions or as a requirement in management plans.

Structure and scope of the review

Each forest conservation and management type is reviewed below following roughly the same structure or outline:

- Background and introduction
- Objective description of how the BS mechanism(s) function(s). How were benefits distributed and who were the beneficiaries? Examples in the text and in boxes describing particular BS cases.
- Assessment of how the BS mechanism(s) has(have) worked in providing efficient, equitable and effective BS between beneficiaries. What were the main lessons?

The review does not claim to be exhaustive or scientific in its approach. The diversity and vastness of experiences makes that an almost impossible task. Instead, we have had a more moderate aim of providing a number of interesting cases and illustrations of how BS is implemented in different contexts. Further, though admittedly anecdotal, we combine this case analysis with a limited literature evaluating or assessing general experiences with the different forest management initiatives. Some of these studies address poverty and BS sharing issues more generally.

At the end of each sub-chapter, we pull out and summarize the key lessons of relevance to BS. The challenge is to apply the lessons for BS under REDD, which we attempt in Chapter 7.

4.2 INTEGRATED FOREST CONSERVATION AND DEVELOPMENT PROJECTS

ICDP – killing two birds with one stone?

ICDPs are projects with the primary purpose of conserving biodiversity within protected areas (PAs), while at the same time achieving social development goals. Improving livelihoods of people in and around parks were seen (mostly) as a means of achieving more effective biodiversity conservation through reducing pressure on park resources and create local support for the PA. Over time, though, the development objectives have gradually been put on a more equal footing with conservation objectives. ICDPs were first introduced by the World Wide Fund for Nature in the 1980s in an attempt to address some of the challenges and shortcomings of the traditional “fences and fines” or “fortress

[45] We consider logging in natural forests only, not plantation forestry.

conservation" approach to biodiversity conservation in protected areas (Wells and Brandon 1992).

ICDPs exist under a variety of names such as "people-centered conservation and development". Some authors include projects that have more commonly been termed community-based natural resource management (CBNRM)[46] or community wildlife management (CWM) programs (Hughes and Flintan 2001). These latter kinds of projects have been called "second-generation ICDPs" (Larson et al. 1998), addressing concerns related to the mixed success of original ICDP projects. In particular, they have greater focus on empowering local people in the management process in the hope of creating a sense of ownership and accountability (Spiteri and Nepal 2006).

PAs have expanded in recent years and now cover around 27 percent of the tropical forest biome (Nelson and Chomitz 2009). PAs have been found to be effective in protecting forests, though there is scope for improvement on many fronts, especially in managing relations with local and indigenous people (WWF 2004).

Further expansion and strengthening of forest PA networks around the world may form an important part of REDD strategies (see e.g. Brandon and Wells 2009, Oestreicher et al. 2009). PAs typically generate low economic returns compared to alternative land uses, and need extra funding to make up for the shortfall. REDD payments for already established and existing PA networks will most likely not be considered additional under REDD (e.g. there may be exceptions if PAs are under significant and increasing pressure, have acute shortage of management funding etc). Forest PAs contain large amounts of carbon, and their further expansion not only has the potential to avoid loss of important carbon stocks, but will generate substantial biodiversity and other environmental service benefits as well.

Regardless of whether ICDP and PA expansion will form part of creditable REDD strategies, more than 20 years of experience related to integrated conservation and development and sharing of benefits from PAs, hold many relevant lessons for BS schemes for a range of PAMs involving local communities. We review some of these experiences below.

BS arrangements within ICDPs and PA management

The most common threats to forest PAs around the world are poaching, encroachment by agriculture, ranching and urban development, and logging (legal and illegal), with collection of non-timber forest products (NTFPs) also being a widespread problem (WWF 2004).

The idea of ICDP and community-based conservation projects more generally is to deal with these threats through a mechanism which distributes revenues to those who most immediately affect and are affected by a PA. These two groups are not necessarily the same. The assumption is that through direct and indirect benefits in the form of individual or household level payments or (more commonly) community level goods (e.g. schools) to communities in and around PAs, people's attitudes towards the park will become more friendly and damaging behavior will be reduced or stopped. Support is given both to cover initial costs caused by the establishment of the park (e.g. resettlement of people) and recurring costs from reduced access to resources. This is the essence of so-called incentive-based conservation. BS is one important component of ICDPs. However, a range of activities in addition to BS are undertaken to make such projects work, including

[46] Variations on this term include community-based management or community-based conservation.

education and sensitization programs among communities, monitoring and enforcement activities around park boundaries etc.

While there may be good reasons for providing support from national governments to the management of PAs in tropical forest countries, such parks are generally chronically underfunded. In addition to (modest) government support, the benefits available for sharing generally come from the park itself and from external donor funding. The emphasis on financial sustainability of parks, independently of government or donor support, has created a need to generate revenues from the PA directly (see e.g. Lindhjem et al. 2003, IUCN 2006). The majority of such revenues typically come from tourism (access fees, hunting and wildlife viewing activities, hotel fees etc). For communities there may some income from limited access to collection of non-timber forest products (NTFPs) and hunting.

The mechanisms for sharing such benefits vary widely with country and context, but involve both dimensions of vertical and horizontal BS, as discussed in Chapter 3. Typically, a semi-autonomous national park or wildlife management authority on the national level is responsible for management of PAs and for allocating budgets. This institution generally has low budgets and is in need of finding additional revenues to the central budget allocations it receives. The concerns of the management authority include funding staff and ongoing conservation science activities and ensuring some cross-subsidization from high-revenue to low-revenue PAs in the country network. In some cases, also the mother ministry (e.g. Ministry of Environment, Ministry of Natural Resources) may claim revenues generated from parks, though the PA authority typically is a financially independent entity.

On the ground level, several stakeholders and institutions may be involved in BS. In addition to park management, there may be tourism operators, companies and community groups operating small shops or payable activities on park grounds, different types of trusts set up to handle external (and internal) funding for conservation and/or development activities, community-based organizations, local government institutions, and community members in and around the park. The BS mechanisms linking these stakeholders on the local level vary, but some common elements can be noted.

Typically, a percentage of entrance fees and/or tourism payments for different activities (e.g. for guided wildlife viewing) is shared with local communities adjacent to the park. The “park neighbor” principle is the most common approach, though local claims may be made on other grounds (e.g. need) (Adams and Infield 2003). In many cases, there is a compensation scheme for farmers who have crops damaged by wildlife. In addition, revenues typically go towards creating alternative income generating activities and for community development projects (such as schools, health clinics etc). The criteria for determining who in the community and individual level to compensate and the percentage of park revenues allocated vary widely. Further, the majority of revenues generated from the park is typically transferred to the national park authority, who then decides budget allocations for individual PAs based on needs. One example of a BS scheme for a national park in Ghana is given in Box 4.1. The main lessons from BS schemes for ICDP around PAs are discussed in Chapter 4.3.

Box 4.1 Kakuma National Park in Ghana[47] – Classic BS set-up for protected area, with potential embezzlement problems

The Kakuma National Park was established in 1989 and covers an area of 360 km^2. The park is managed by Ghana Heritage Conservation Trust (an NGO created by the government and Conservation International) in collaboration with the Wildlife Division of the Forestry Commission. It is estimated that the park has about 50 000 visitors per year, a mixture of national and foreign nationals. The park generates substantial revenues, and operates with the following benefit sharing system:

1. The main attraction in the park is the Canopy Walkway. It costs 2.50 cedis per person for nationals, and 9 cedis per person for foreigners. The revenues from this activity are shared in the following manner: 60 percent to the Trust and 40 percent to the Wildlife Division.
2. Revenues from the entry fee (0.20 cedis per person applied equally to nationals and foreigners) are being used to maintain the infrastructure of the park.
3. There is also a lodge, a restaurant and a gift shop in the park operated by two individuals. The rent from these activities is paid in full to the Trust.
4. The park also offers guided tours in smaller groups. The revenues from this activity are paid in full to the Wildlife Division.

The revenues generated to the Trust are transferred to a bank account in the region, while the revenues accruing to the Wildlife Division are transferred to the headquarters of the Forestry Commission in Accra which can choose how and where to spend it. The 17 persons employed under the Wildlife Division in the park get their salaries from the headquarters of the Forestry Commission. The communities around the park do not get any direct benefits in the form of money, but do get some indirect benefits such as jobs, selling food to the tourists, renting living space to staff etc. The communities do not have access to the park, it is closed off. The main challenge in the park is illegal hunting. It is also an expressed concern that the revenues accruing to the Trust is not being invested in the park but is used for personal gain of the Trust management board.

Experiences with BS under ICDP and PA management

BS mechanisms for ICDPs and PA management generally need to be legitimate and give the appropriate incentives, as discussed in Chapter 3. In this case, appropriate incentives are those which align individual behavior of local communities and other stakeholders with the conservation objectives of the PA. More than 20 years of experience demonstrates that this has been hard to achieve in practice. Below we summarize some of the main lessons, particularly related to BS. We start by assessing issues relating to horizontal BS, i.e. on the ground level around PAs, while turning to vertical BS at the end.

Funds are limited and incentives often unclear

A general problem worth noting from the outset is that revenues generated from PAs rarely are enough to cover the sacrifices made by neighboring communities. Ideally, park revenues should more than compensate local stakeholders for the costs they incur. Even the parks generating high revenues from tourists viewing charismatic mammals, such as the Mgahinga Gorilla Park in Uganda, do not generate enough revenue for affected people to cover their costs of conservation. This is the case for Mgahinga even if all of the revenues were used for compensating affected communities (Adams and Infield 2003). This immediately points to the importance of identifying which stakeholders should be compensated first to achieve park objectives.

An important weakness of many ICDPs is that the link between local benefits and the conservation behavior such benefits are intended to stimulate, is too indirect and vague. Even if alternative income generation activities are developed and park revenues are shared with local communities, there is no reason why damaging extractive uses of the

[47] Based on author interviews with park management staff, November 2009.

park will stop if individuals can add to their income by continuing such activities and enjoy other park benefits at the same time. The reason is partly that benefits typically are shared on a community level and there is limited opportunity for cutting off benefits to individuals if extractive activities continue.

In some cases, poor members of communities who typically are the most dependent on PA resources for their survival may be unable to afford the services from schools and clinics provided by ICDP funding. High benefits on the community level may, however, also create a community-level sanctioning mechanism if enough people see the benefits threatened if certain illegal activities continue. If there are no such mechanisms in place, either internally or from the park authority, each individual has an incentive to exploit any additional income generation from the park. Hence, to be more effective, incentives must be more directly targeted and must always be combined with careful monitoring and enforcement of access rules (e.g. Brandon and Wells 2009). As noted by Spiteri and Nepal (2007: page 4): "If benefit distribution is not distinguished based on individual compliance or contribution to conservation objectives, incentive-based conservation can offer little incentive for community conservation".

Deficiencies both in design and implementation of BS schemes

The BS for ICDPs has in many cases been unfair and inequitable – an important reason for reduced effectiveness. This result seems partly to stem from inadequate BS mechanism design and partly from problems in implementation. It is also a fact that BS outcomes under ICDPs often reflect the political economy of the area in question, for example the relative power of different stakeholders. Even if the right beneficiaries can be identified, as discussed below, the means of reaching them in cash or in kind are marred by many classic problems. In some cases, benefits from parks may benefit those who are close to tourists or park facilities, rather than those who have potential of affecting park resources (Lapeyre 2009, He et al. 2008). In other cases, monetary benefits distributed in communities through village committees are embezzled, captured by elites or generally spent on projects and activities not favored by the majority of community members (see Box 4.1 above). Vulnerable groups with a limited voice are commonly marginalized.

Furthermore, corruption in the implementation of ICDPs on different levels is a potential problem of unknown proportions (Smith and Walpole 2005), which solution may have unclear impacts on BS and conservation outcomes (Ferraro 2005). Sommerville et al. (forthcoming) suggests providing non-rival and non-excludable benefits that accrue to the largest number of community members, such as community-level social events, to reduce elite capture of benefits. If whole communities including women and marginal groups are involved in decision-making, experience shows that transparency and accountability are improved (Scherl et al 2004). Clear and effective dispute settlement mechanisms to deal with failures in the implementation stage are potentially important and disciplining for all involved. However, many ICDPs fail already at the BS design stage.

Careful identification of target communities for benefits important

Several reviews of ICDP experience, points to the importance of careful identification of target communities and beneficiaries in the design of BS mechanisms. A review of ICDPs in Indonesia revealed that the majority of ICDPs had targeted the wrong beneficiaries and that benefits were limited to a few stakeholders (Wells et al. 1999). To stretch scarce funds, benefits should be shared with those who bears the greatest costs of conservation and/or has the highest impact on natural resources (Wells and Brandon 1992). This creates legitimacy for the BS mechanism. The incentives can be made more direct and effective by trying to identify individual costs (e.g. crop damage from wildlife or direct costs of conservation) and compensate on the individual level. However, as pointed out by Archbald and Naughton-Treves (2001) making this matching is administratively difficult,

sometimes costly and politically-charged. It can undermine the legitimacy, efficiency and effectiveness of the mechanism. Also as seen in many parts of the world, such compensation mechanisms give individuals incentive to over- report and exaggerate wildlife damage costs[48]. Spiteri and Nepal (2007) recommends that benefits should be distributed based on the criteria of need, cost, compliance, and residency and think this is difficult but essential for equity in BS.

To make benefits more directly linked to conservation objectives and behavior, Archbald and Naughton-Treves (2001) recommends combining community-level projects, some individual-level compensation and allowing some sustainable collection of NTFPs. They see this as the best way to reduce conflict levels on community and individual levels and to create positive attitudes for PA objectives. And as shown in several studies positive attitudes are often linked with appropriate behavior around PAs (Groom and Harris 2008). An example of a conservation project that has been hailed as successful to date, combining direct family level incentives with wider community benefits and compliance requirements, are given in Box 4.2.

[48] This is the problem of asymmetric information between the regulator (principal) and the regulated (the agent). To make agents reveal their true costs, public auctions are commonly used mechanisms also within forest conservation. See Ferraro (2008).

Box 4.2 Juma Sustainable Development Reserve in Brazil – individual and community level incentives with compliance requirements

Juma Sustainable Development Reserve in the Brazilian Amazon is a nature reserve of 600,000 hectares bordered by two highways. Traditionally the pavement of these two highways would have led to illegal logging and subsequent deforestation, but due to the Juma Sustainable Development Reserve Project the local population is paid to prevent the trees from being cut down. The idea behind the project is to recognize and value the role traditional and indigenous populations have in the conservation of forests, rivers, lakes and streams, and provide these people living in the forest an incentive to preserve it. The project includes a Forest Conservation Grant Program named *Bolsa Floresta*, designed through a participatory process including both the State of Amazonas government and non-government organizations.

Bolsa Floresta consists of three different types of forest grants:

- Each family living in the reserve receives R$50 (US$28) per month to a program debit card if complying with the rules of the project. Rules include prohibition to expand their crop and pasture area, keeping kids enrolled and attending school, actively participate in the Community Dwellers Association and in the construction and implementation of the Conservation Unit Use and Management Plans and comply with the rules of these plans. Families not complying with the rules (e.g. keep deforesting to expand agricultural areas) will be excluded from the Grant Program.
- A Community Investment Program is set up to benefit communities participating in Bolsa Floresta. The government invests on average R$4,000 a year into creation of sustainable income generating activities in participating communities. These investments are either transferred straight to the communities or given as a credit in the local commerce.
- 10 percent of the annual amount paid to the local dwellers is set aside to the Association of Reservation Dwellers. The money is transferred directly to the association or as a credit in the local commerce. How this money is spent are discussed and approved by the communities in meetings.

Funding for the payments stem from interests on the State Fund for Climate Change, and total amount of resources available to improve the living standards for the communities depend on the government's success in attracting partners to this fund.

Positive community impacts of the project include access to more advanced schooling (5th to 8th grade opposed to previous 1st to 4th grade), better housing conditions, better access to medical support, access to clean energy from solar heaters, improved access to clean water, and improved agriculture and aquaculture practices.

Source: FAS (2008) and Anonymous (2007)

Communities are not homogenous

An additional point related to identification of target beneficiaries in a BS scheme, is the need to acknowledge that communities are not homogenous units. This is related to the point made above that implementation of BS schemes may fail in many respects reaching those who should benefit. This has been a grossly underappreciated fact in development and conservation projects (Agrawal and Gibson 1999). As argued by Spiteri and Nepal (2006), ignoring the difference between individuals in a typically heterogeneous community inhibits the success of ICDPs by narrowing the definition of target beneficiaries. "It also conceals power relations within communities and further masks biases in interests and needs based on prevailing differences in age, class, caste, ethnicity, gender, and religion" (Spiteri and Nepal 2006: 4). Community leaders, like leaders anywhere, may be benevolent and wish for the common good or simply opportunistic and rent-seeking (Mansuri and Rao 2004). Being aware of the heterogeneity of communities and power relations within them is essential for the implementation of horizontal BS mechanisms.

Procedural fairness and real participation, not just level and equity of benefits

As discussed, perceived equity of BS outcomes is important for the success of ICDPs (e.g. Groom and Harris 2008). However, many authors point out that in many cases real participation in the decision-making processes determining BS mechanisms and outcomes may be just as important. As stated by a representative from a park in Uganda, as quoted by Archabald and Naughton-Treves (2001:146): “It is the participatory process of revenue-sharing that matters more than the benefits”.

In many cases leaving communities to decide what sort of projects they would like to implement would be an important factor. This point underlines that targeted monetary payments of course are far from everything that matters in ICDPs (Garnett et al. 2007). They are important, but to create broader support and positive attitudes and to stimulate ownership and participation, careful consideration of proper procedure and participation is essential. That said it is also important to make the right trade-off between central authority, management and guidance with devolution of rights and authority to local communities. Both carry risks, but growing evidence shows that local level management in many cases performs worse than hoped for (Blaikie 2006, Mansuri and Rao 2004).

Summary of key components of successful horizontal BS

Archabald and Naughton-Treves (2001) identify four key components of successful revenue-sharing programs in their review of ICDPs in Africa: (1) Long-term institutional support; (2) appropriate identification of the target community and project type; (3) transparency and accountability, and (4) adequate funding. By the first factor, they mean that unsteady institutions and rules make BS mechanisms subject to unexpected changes and shifts depending on bureaucrats’, wardens’ or politicians’ whims. In short, risks and uncertainty increase. Benefits need to be predictable and sustained over time to create lasting impact and build local support. Components (2), (3) and (4) we discussed above. Spiteri and Nepal (2006) in their review concur with component (2) but add the importance of including marginal communities and stress the need to build capacity and aptitude among communities in the longer term.

Vertical BS – also need for revenues centrally

The revenues used for horizontal sharing, as discussed above, can come from central park authority budgets, from donor support or from locally generated revenues. However, when significant revenues are generated from tourism locally national park authorities would like to have their share. For legitimacy of park activities and given the limited funds typically available, it is important for the viability of the PA to make sure that key local level actors benefit first. Further, in order to have incentives to generate more revenue (within ecologically safe limits), local park management should be able to retain a sizable share of additional revenues (Lindhjem et al. 2003). Additional efforts should be given additional rewards. However, even though local players need to see benefits linked to conservation, national PA networks depend on funding from parks that are popular with tourists to cover management costs at less popular, but maybe ecologically more valuable, parks. Hence, there are good reasons also for some vertical sharing of benefits. This is a trade-off that will have to be made in each case.

ICDPs often take on too much – like REDD-plus?

Brandon and Wells (2009) in assessing the relevance of ICDPs for REDD point out that many ICDPs were too ambitious and tried to do too many things. They note that there is a risk that REDD may also be overburdened by too many objectives and fail as a consequence. In BS for ICDPs the trade-off between simplicity, directness of incentives, cost efficiency and effectiveness on the one hand and the inclusion of the widest possible stakeholders vertically and horizontally becomes clear. Considering the situation at the

Mgahinga National Park, mentioned above, Adams and Infield (2003: 177) conclude that "The creation of multiscale multistakeholder partnerships for conservation built on revenue-sharing is a daunting institutional challenge".

Key lessons from BS under ICDP

The following key lessons can be identified:

- When limited funding, important to identify the key stakeholders whose costs should be covered first.
- Link between local benefits and conservation objectives typically too unclear or vague. Points to the importance of targeting incentives to some requirements of individual compliance and to have sanctioning mechanisms in place. Otherwise, people may receive benefits and continue damaging forest activities more or less as before.
- BS mechanisms fail both in the design and the implementation phases:
  - Designs often fail to identify and target those who bear the greatest costs and/or has the highest potential impacts on the PA
  - Implementation often fails to reach stakeholders due to embezzlement of funds, elite capture and marginalization of vulnerable groups.
- Poor people may not be able to afford community-level benefits such as schools and clinics – and are often the ones most reliant on forest resources. Example of benefits missing the target as incentive and causing inequitable distribution.
- Transparency and accountability on all levels of handling funds are important also for ICDPs.
- Benefits should be distributed based on a range of criteria and not just on the community level in the form of schools etc. Important criteria include: need, cost, compliance, and residency.
- BS should be combined with sensitization and capacity building among local communities to manage funds, plan and choose projects.
- Communities are not homogenous – acknowledge and identify differences and power relations.
- Procedural fairness and real participation in decision-making processes (not just consultation) may be as important as BS outcomes themselves.
- Institutional stability of BS mechanisms important. Benefits need to be predictable and sustained over time to create lasting impact and build local support.
- Horizontal BS needs to be balanced against legitimate needs for revenues also at the national PA management authority level.
- ICDP have often taken on too many things, and failed as a consequence – may REDD do the same?

4.3 PAYMENT FOR FOREST ENVIRONMENTAL SERVICES

PES – direct incentives for environmental service delivery

Payment for environmental services (PES) is a type of environmental policy instrument that gives the owner or manager (could be an individual or a community) of a natural

resource direct incentives to manage it in society's best interest (see Zandersen et al. 2009 for a recent overview). For the owner of forest resources this usually means giving up some income (for example from timber sale or farming activities) in exchange for a compensation for the environmental services (ES) provided (for example carbon sequestration, water purification, biodiversity protection, reduced nutrient runoff etc.).

The aim of PES is to internalize the external values of ES, and hence make it profitable for resource owners to forego alternative management options in order to produce and sell ES like carbon sequestration. PES is a more direct, and potentially more effective, way of providing conservation incentives than those typically used under conventional ICDPs as discussed in the previous section (e.g. alternative income generating activities outside a protected area) (Ferraro and Kiss 2002). PES can be seen as a response to some of the challenges experienced under ICDP and protected area management – and is considered a key tool for delivering emission reductions and carbon stock enhancements under REDD (see e.g. Bond et al. 2009). Indeed, the international REDD scheme is a form of large scale PES mechanism. However, PES carry challenges of its own not least related to poverty impacts and inequity[49].

A widely used definition of PES is (Wunder 2005):

1. a *voluntary* transaction where
2. a *well-defined* environmental service (ES) or a land-use likely to secure that ES
3. is being "bought" by minimum one ES *buyer*
4. from minimum one ES *provider*
5. if, and only if, the ES provider continuously secures ES provision (*conditionality*)

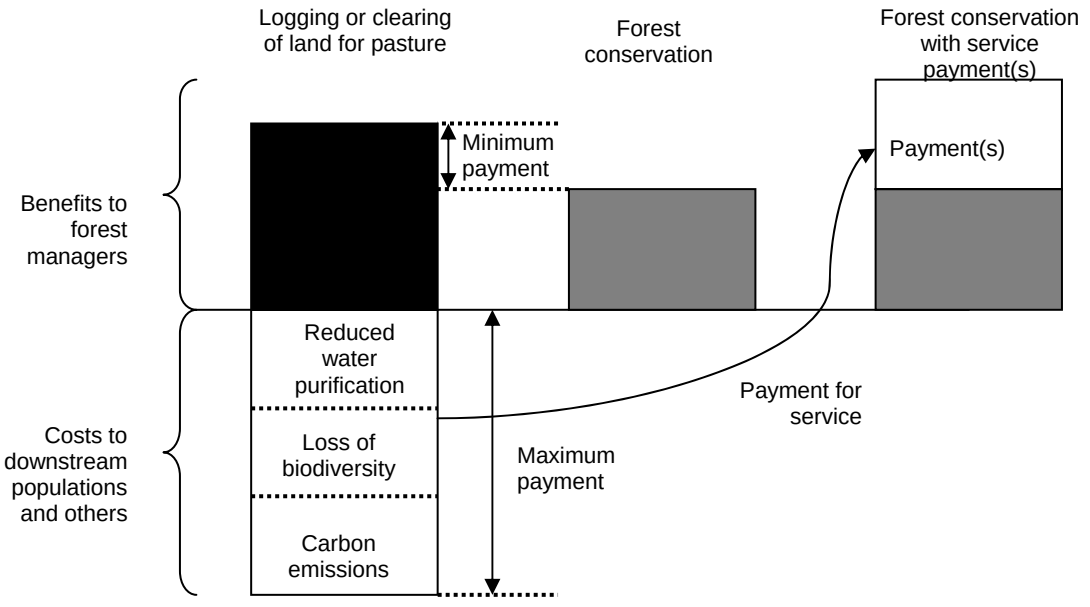
For a PES scheme to work, revenue flows to land owners need to be sufficient to make sure they implement and maintain desired land use practice, i.e. so that as a minimum their opportunity costs and transaction costs of entering the agreement are covered. Instead of one-time payments, the revenue flow should be spread out over the duration of the contract and be conditional on the demonstration of actual management practices implemented and maintained. This was briefly discussed in Chapter 3.2. The logic of PES is illustrated in Box 4.3 presenting a situation where payments for carbon only are sufficient to avoid land use conversion.

[49] This is illustrated by the publication of a forthcoming issue of *Ecological Economics* dedicated to equity and poverty issues in PES schemes.

Box 4.3 Logic of PES – Payments for carbon only may be sufficient to avoid land conversion

The logic of PES is illustrated in the figure. The black area illustrates the total amount of benefits a forest manager receives from logging or clearing his land for pasture. The gray area equals the benefits the same forest manager will receive from his land if the forest is conserved (for example non-timber forest products, ecotourism revenues etc). In order to make forest conservation attractive to the forest manager, PES payments need to at least cover the difference between benefits received from logging or clearing of land and benefits received from forest conservation marked as "minimum payment" in the figure. Payments do not necessarily need to cover total costs to downstream populations and other effected stakeholders (e.g. reduced water purification, loss of biodiversity and carbon emission) from logging or clearing of land for pasture (although this is the maximum amount that could be paid while the society as a whole would still benefit). The crucial point is that the land manager receives sufficient compensation for foregone revenue and other costs associated with forest conservation.

For the case in the figure, it can be seen from the size of the bars that the value of the reduced carbon emissions alone is higher than the minimum payment required, i.e. without considering the value of the other ES. In this case REDD payments for the carbon would be enough to keep the forest conserved and avoid land-use change, while generating water purification and biodiversity conservation as unpriced co-benefits. In other cases, where the total ES values of conservation are higher than the opportunity costs of land use, payment for carbon alone will not be enough to avoid land-use change. That is why many have argued that it is also important to incorporate payments for other services, though that will necessarily introduce additional complexity in valuing such services and in the measurement and monitoring of their delivery. Some coordination between UNFCCC and the UN Convention on Biological Diversity is under way, but it is unlikely that payments for both biodiversity and carbon will be bundled together in PES schemes under the two conventions in the foreseeable future. In voluntary carbon markets discussed in Chapter 4.4, carbon credits that deliver high co-benefits may be traded at a premium over other credits.



Source: Adapted from Engel et al. (2008)

PES is still a fairly new policy instrument, but it has attracted much interest and been implemented in many countries in order to capture and market indirect use values of forests. Most PES schemes are found in Latin America. It is emerging in Asia, but (almost)

non-existent in Africa. Current PES schemes tend to focus on four areas: landscape beauty, watersheds, biodiversity and carbon. Costa Rica was the first country worldwide to introduce a national PES program in 1996, and this program addresses a bundle of these four ES. This program is quite unique, as most other programs implemented typically are created at a small scale. An overview of the Costa Rican program is given in Box 4.4

Box 4.4 PES in Costa Rica - a national scale PES program. A type of scheme that may be seen as a component of national REDD programs.

The national PES program in Costa Rica came into being after the passing of a new forestry law (Forestry Law No. 7575) in 1996. This law establishes the needed regulatory basis to pay landowners for the ES they provide. The four ES recognized by the law is: (i) mitigation of GHG emissions, (ii) hydrological services, including provision of water for human consumption, irrigation, and energy production, (iii) biodiversity conservation, and (iv) the provision of scenic beauty for recreation and ecotourism. Provision of these ES has been linked to specified land uses, and landowners receive direct flat payments according to how they manage their land and not the amount of services they produce as such. Land uses included were:

- Forest protection – 5 year duration and USD 210/ha
- Sustainable forest management – 15 year duration and USD 327/ha
- Reforestation activities – 15-20 year duration and USD 537/ha

All payments are dispersed over five years. For forest protection the payments are dispersed evenly over these years, while for sustainable forest management and reforestation activities 50 percent of the money is received the first year and then smaller payments the remaining four years. In 2003 sustainable forest management was taken out of the program while payments for agroforestry systems were introduced instead. In 2006 natural forest regeneration were added as a fourth eligible activity.

Private landowners need at least one hectare of land to qualify for payments for reforestation activities and two hectares for forest protection. Maximum area a private landowner may receive payments for is 300 hectares. This limit is 600 hectares for indigenous people's reserves. Small projects may be bundled in order to keep transaction costs associated with payment contracts down. The National Forestry Financing Fund (FONAFIFO) operates under the Ministry for Environment and Energy, and is the agency in charge of administrating the PES program. In return for payments, FONAFIFO receives the right to carbon and other ES for the length of the contracts. These ES can then be sold on as a way of financing the program. Hydro-electric companies and agribusiness pay FONAFIFO for the protection of water resources, and private sector actors can buy *Environmental Service Certificates* as voluntary contributions to protection of ES. However, the main funding source is a fuel tax, often referred to as the *ecotax*.

Since the start of the program, the number of participants and size of area included has increased steadily. By 2005 about 500.000 hectares of land were covered by PES at a cost of USD 120 million, of which forest protection constituted almost 83 percent. Still, the interest in participating in the program far outweighs available funding, and only about 25 percent or applications are accepted. A broad list of criteria including carbon sequestration potential, hydrological importance, and proximity to existing protected areas are used to prioritize between applications.

Source: Karousakis (2007)

Effectiveness of PES – early to tell, but designs must be tightened up

Because PES is still a fairly new instrument, few evaluations of resulting impacts from these schemes are available. There are some experiences indicating that PES, if well designed, can lead to efficient, cost-effective, and equitable conservation (Wunder et al. 2008). Good intentions are however no guarantee that desired outcomes will occur. Looking to Costa Rica (see Box 4.4), deforestation rates in the country were already low

prior to implementing the PES scheme due to previous conservation policies, including creation of national parks, biological reserves and a 1997 legal restriction on forest clearing. Analyses after three years of PES payments show no significant impact on deforestation from the PES program (Sánchez-Azofeifa et al. 2007). It is still early to assess performance, so PES schemes should maybe be allowed to be strengthened and improved over a longer time period, before final judgment is passed.

Site selection criteria used to prioritize between applications in Costa Rica have been criticized for not taking actual delivery of ES into account. A large oversupply of sites compared to funding available in the program implies that payments exceed opportunity costs and that payments could have been lower. Then a larger area of land could have been included in the scheme for the same cost (Karousakis 2007).

Wunder (2009) argues that hard conditionality must be applied in order for PES schemes to work according to intentions. This is one clear difference between PES and ICDP. This means that performance must be monitored closely and there must be ways of sanctioning participants that do not stick to the contract. In addition, participating land owners need to be able to enforce their rights opposed to third-party intruders threatening delivery of ES (e.g. through illegal logging).

Sharing of payments: Can PES benefit the poor?

The discussion in Chapter 3 about universal, wide sharing of benefits vs. targeted, differentiated payments is well illustrated by experiences from PES schemes. In many cases the PES payments themselves are assumed to contribute to poverty reduction by including poor land owners. This assumption is for example evident in the name of the RUPES (Rewarding the Upland Poor for Ecosystem Services) program in Asia. Many hypotheses regarding impact on the poor from PES programs have been proposed, but few of these have been properly researched and documented.

Factors influencing poverty impacts include the number of PES participants that are poor, the poor's ability to participate in the transactions and the amount of PES payments. However, negative effects on poverty might also occur. For example if the poor does not have secure property rights and more powerful groups attempt to take control of the land when its value increases as a result of the PES scheme, or if landless poor who are dependent on forest products for their livelihoods get their access to collecting such products constrained or eliminated.

Assuming that poor landowners hold land eligible for participation and that their opportunity costs and land management strategies make it attractive for them to participate, there might still be obstacles to participation. Secure tenure rights is one issue we will return to below. Other obstacles are related to assets and income. Participation in a PES scheme might require investments in reforestation, or other land management activities. Poor people with little or no savings and little physical income or remittances may be restricted from participation because they are not able to meet investment needs if they do not have access to credit. This point was also brought up in Chapter 3.2. Some front-loading of payments may be necessary to bridge the funding needs for investment. Access to technical knowledge regarding sustainable forest management practices can also be a limiting factor (Pagiola et al. 2005).

High start-up and transaction costs associated with contract negotiations and implementation of new forestry management systems will also be more difficult to bear for poor than for better off landowners. One of the challenges with PES schemes in general, and when including poor people in particular, is that transaction costs are often high (May et al. 2003, Grieg-Gran et al. 2005). Transaction costs of PES schemes seem particularly high

during the start-up phase, while running costs are more manageable, for example as experienced for carbon projects in Indonesia (Chacho et al. 2005).

Leimona and Lee (2008) argue that a way to enable poor to participate in PES programs is to lower transaction costs and establish systems to deal with up-front investment costs. One way to lower transaction costs is by strengthening local institutions that can represent a number of service providers when negotiating and implementing schemes. Bundling of smaller projects may also be a promising avenue, a possibility in the Costa Rican PES scheme (see Box 4.4). Capacity building and technical assistance may also be offered by these institutions, while costs of information gathering can be reduced when several stakeholders get together to discuss potential solutions.

Proportionally higher transaction costs for small land holders might discourage dealing with them versus larger land owners. Various forms of collective arrangements for negotiations and contract development are a way to keep transaction costs for each individual contract down. Finally, simple and inexpensive technologies to measure and monitor performance are important in order to keep costs associated with monitoring and verification of ES delivery down. Credit schemes or front-loaded PES payment schedules is a way to raise capital needed to enable poor land owners to cover initial investments. Also here, collective arrangements can be a way to spread investment costs.

When participating, diversification of revenues for landholders or communities involved in PES schemes is a way of becoming less vulnerable to price fluctuations or forces of nature. Sustainable land use practices established through PES may also provide further possibilities for revenue diversification. An extra incentive to participate in the Scolel Té project in Mexico is the possibility to access markets for certified timber, and even though PES payments for carbon is considered to be minimal in terms of revenue generation, it is perceived as a good bonus in addition to selling certified timber (Mayrand and Paquin 2004) (see also Box 4.5 in Chapter 4.4 for a description of this program).

Tenure security is a prerequisite for PES and BS

Because PES payments are related to change in land management practices at specified pieces of land, tenure security and property rights are important for the system to work. Especially in situations where PES programs require long-term investments (e.g. reforestation) secure tenure arrangements will be important to reduce uncertainty. As mentioned above, undesired effects might arise for poor people with insecure tenure rights if richer or more powerful groups move in and take control over land areas as the value increases with the introduction of PES.

The lack of formal land titles does not necessarily mean that tenure is insecure, and a system securing use and management rights to local land users, which could also be community groups, in a satisfactory manner should be sufficient for PES. If land users are tenants on rented land an agreement regarding costs and benefits stemming from the PES project is needed. An issue in relation to rented land is that the availability of PES payments might influence the land owner's incentives to continue renting the land out. In Nicaragua we find an example of an effective PES program in an area where land rental is common (Pagiola et el. 2005).

Land tenure implications are closely linked to poverty issues in PES. If poor communities possess property rights to forest areas providing demanded ES, they are likely to benefit from a PES system. While on the other hand, if rights to the resource base are limited or uncertain, a PES scheme might restrict poor people's access to resources further, hence contributing to further marginalization. The Costa Rican model discussed above has for example been criticized for focusing on large and medium sized private landowners while not providing equal access to the program for small landowners, indigenous people and

resource users without formal property rights. The mean size of land enrolled in the project by 2000 was 102 hectares, and the largest project was 4.025 hectares, implying that the stated size limits are not enforced. A total of 202 contracts were entered into with holdings exceeding the limits. 60 holdings smaller than the minimum limits were also included in the program (Sánchez-Azofeifa et al. 2007). Limiting the size of land holdings will typically reduce the overall cost efficiency of the program, but may be a way to better include poor land owners in the program. This is an example of the trade-off between efficiency and equity in BS, discussed in Chapter 3.

Another legitimate fear is that the establishment of a large carbon market will encourage carbon providers to buy-out small farmers in order to realize economies of scale. If the small-scale farmers have no alternative source of income, a one-off payment for their land might be tempting to accept and improve their situation in the short term, while their poverty status might worsen if they do not have the knowledge or training to invest the money in productive activities.

Poverty alleviation and effectiveness of PES schemes

The capture of benefits by the more powerful and better-off can be a problem in PES, as for ICDPs, and there is an ongoing debate related to whether poverty alleviation should be a goal for PES or if including a target like this will compromise PES schemes' abilities to deliver expected ES in an efficient and effective manner. Regardless of the viewpoint on this, poverty issues are intimately connected to PES in areas where the rural population is dependent on agriculture and forestry for their livelihoods, and should not be ignored. One possible option is to let the PES scheme deal with ES, but to supplement the establishment of PES schemes with other livelihood programs and initiatives (Lee and Mahanty 2009).

It is also argued that PES schemes may not work effectively if those most dependent on the land for their livelihoods are not included and receive their share of the benefits. They will then lack the necessary incentives to halt unsustainable forest management practices as these practices are means to secure their own livelihoods, and unsustainable practices are likely to continue. In addition, the legitimacy of the scheme, as discussed in Chapter 3, will be compromised if certain population groups are excluded. If PES is seen as an instrument that should address poverty as well as securing ES, experience indicates that a program is more likely to succeed including poor communities if the incentive system is targeting communities as a whole instead of individual farmers or land owners. Contributions to infrastructure development like secure water supply are one way of benefitting a whole community. This was also discussed in the context of ICDPs above. Further, the PES scheme should be flexible enough to have a broader set of management options qualifying for revenue (Myrand and Paquin 2004).

Key lessons from BS under PES

The following key lessons can be identified:

- PES schemes aim for more direct monetary incentives to forest owners or communities for forest environmental service delivery than under ICDPs. Strict conditionality and control of leakage is important in order to secure positive impact on deforestation.
- PES has mostly been implemented in Latin America, is starting in Asia and is almost non-existent in Africa. Strict PES schemes may be harder to implement in Africa, due to governance and tenure problems and other issues.

- Fair BS in PES schemes largely depend on whether the scheme is targeted poorer segments of the population, the ability of poor people to participate in the transactions and the amount of the payments.
- Poor can be enabled to participate and hence benefit by:
  - Reducing transaction costs of PES schemes through for example strengthening local institutions, promoting collective arrangements, enabling bundling of small projects or similar.
  - Provide credit schemes or front-loaded payments to give poor capital to cover up-front investments. The longer the time horizon until benefits are realized, the more limited the existing credit opportunities and the poorer the participants, the more front-loading is required.
  - Allow flexible land tenure arrangements to participate in PES schemes, i.e. on rented land, with people with use and management rights (not formal ownership). This will have to be combined with enforcement of such tenure rights against external intruders threatening service delivery (e.g. illegal logging).
  - Eliminate excessive access discrimination against mixed, pro-poor production systems[50].
- PES should not have poverty alleviation as primary focus, but should not and can not ignore equity and poverty issues altogether:
  - For PES, too, there is a trade-off between efficiency and effectiveness of environmental service delivery, as discussed in Chapter 3. PES schemes may not be well-suited for poverty alleviation, but should be coupled with other livelihood programs (in similar way to ICDPs).
  - The income generation opportunities created by PES schemes may attract stronger groups, who may further limit poor people's access and user rights to forest resources. This risk must be considered carefully.
  - In some contexts and for indigenous and poor people who are unused to cash economies, incentives cannot be (only) monetary, but should to some extent be in-kind. Payments may exacerbate existing social problems (e.g. excessive alcohol consumption) and inequities (e.g. gender-related).

4.4 CDM AND VOLUNTARY CARBON MARKETS

Existing carbon markets – relevant experiences for REDD and BS

Voluntary and regulatory markets for carbon credits already exist, and experiences from these markets can provide valuable inputs into REDD mechanism design, especially regarding effective and constructive involvement of the private sector. Ensuring that sustainable development and BS objectives are met through private sector investments in REDD projects is different than if government is implementing or supporting REDD activities directly – as discussed in the two previous sections. Some voluntary carbon projects are similar to PES schemes, and thus share many of the same challenges related to poverty and BS. This section focuses on issues that are specific to CDM and voluntary carbon markets.

[50] This point is taken from Grieg-Gran et al. (2005)

How and to what extent BS is considered vary from case to case, but some common challenges stand out and seem to be quite universal for these markets. In the following we will highlight some of these challenges. We discuss the complexity of rules and the lack of a clear definition of sustainable development under CDM, the need to keep transaction costs low, the importance of global rules and standards not just for carbon measurements, but for sustainable development/poverty issues more generally, and the possibility of taxing CDM/carbon projects to generate revenue for sharing.

CDM – requirements regarding sustainable development and BS are loose

Complex rules and no clear definition of sustainable development

CDM under the Kyoto Protocol enables industrialized countries to offset parts of their own emissions by investing in emission mitigating projects in developing countries. The goal of CDM is both to reduce emissions of greenhouse gases and to contribute to sustainable development in the host country.

Of potential forest carbon projects, so far only afforestation and reforestation projects are eligible to deliver certified emission reductions under the CDM. Rules and modalities for afforestation and reforestation projects under CDM are complex, which has contributed to few (< 5) such projects being implemented and validated. The transaction costs seem to be too high compared to the potential benefits from such projects.

Further, there is no clear definition of what sustainable development means under the CDM, and it is left up to the host country to confirm whether a proposed CDM project actively contributes to achieving sustainable development in the country or not. Project applicants have to analyze socioeconomic and environmental effects of the proposed project, and include an assessment of "impacts on biodiversity and natural ecosystems, and impacts outside the project boundary" (Scholz and Jung 2008). There is, however, no clear rules or guidelines regulating sharing of benefits from CDM projects, and to what extent CDM projects have been able to contribute to improvement of local livelihoods is debated. Project reviews have concluded that there is a trade-off between the two dimensions in CDM projects, and that projects delivering high measurable emission reductions are not likely to deliver significant contributions to sustainable development (Kollmuss et al. 2008, Smith and Scherr 2003). This is another concrete example of the trade-off between efficiency and equity discussed in Chapter 3.

A carbon sequestration project in the Sierra Gorda of Mexico gave up their efforts to enter the CDM market. The main reason for this decision was the complexity of CDM rules and procedures. As in many rural areas there was a lack of capital available for project development and lack of forest management skills among local land owners. And even after local capacity was built, high costs associated with verification and certification of carbon sequestration benefits led to more carbon revenue ending up in the hands of international consultants than with the local people responsible for planting and protecting the trees (Ross 2008).

Costs of participating must be kept low and payments must come at the right time

An assessment of the world's first CDM forest project, a reforestation project established in Guangxi Province in China, highlights the need to offer sufficient incentives with minimal costs in order to get small-scale producers to participate and hence benefit from the project (Gong et al. forthcoming). The establishment of carbon pooling arrangements and share-holding systems were found to be important as an attempt to reduce transaction costs and to increase poor and small-scale local land-holders' participation. The 4,000 hectares project area is made up by pooling both individually managed and community managed land, and the shareholding system has been created between the local land

users and three local forest companies. The local forest companies cover costs associated with project development, monitoring, production, harvesting and product sales. They are also responsible for technical support and training of local land users. The local land users only need to make their barren land available for the project.

The forest companies are allowed to establish 1,000 hectares of eucalyptus plantations from which they will receive all revenue after leasing the land from the local users at the local land rent. Revenue from the remaining 3,000 hectares will be shared between the share-holders. Local land users will receive 40 percent of income from timber and pine resin, and 60 percent of income from carbon credits, while the forest companies will keep the rest. The World Bank's BioCarbon Fund will buy the certified emission reduction credits. This means that the sellers get no upfront payments and hence carry all potential risk. The project is potentially profitable for all participants, still a large portion of the project land has not been reforested due to constrained contractual rules, disputes over property rights and low level of social capital in some villages (Gong et al. forthcoming).

The voluntary carbon market – field experiments of project-level REDD-plus

A need for global standards, also for sustainable development impacts and BS

Because the Kyoto Protocol does not acknowledge emission reductions from forest conservation (e.g. avoided deforestation) or sustainable forest management practices as viable for establishing certified carbon credits, these kinds of carbon offsets are currently traded in voluntary markets. By definition, transactions in these markets are not required by laws or regulations. Companies and organizations purchase offsets in order to declare their business *carbon neutral* or to meet voluntary corporate social responsibility objectives.

Due to the voluntary aspect of these markets, the rules addressing topics like measuring, monitoring and social responsibility are typically more flexible than in the standardized markets. Voluntary markets have therefore been criticized for its lack of transparency, quality assurance and third-party standards and verification. A range of standards have been developed in order to deal with these challenges. This has led to a distinction between so-called 'gourmet offsets' and 'minimum standard offsets'. Minimum standards guarantee that the offsets represent real emission reductions, while gourmet offsets include strict additionality standards and strong social and environmental benefits. The latter kind of offsets is traded at a higher price in voluntary markets (Kollmuss et al. 2008).

The Gold Standard, the Climate, Community and Biodiversity Standards (CCBS) and Plan Vivo are all examples of standards with stricter requirements for documentation of co-benefits like contribution to sustainable development and/or conservation of biodiversity. All three standards also exclude projects with high chances of adverse impacts (this is for example not the case with CDM or Chicago Climate Exchange [51]).

The Gold Standard is generally accepted to be the standard with the most stringent quality criteria. It is based on CDM while aiming to increase project co-benefits, and the standard may be applied both for CDM projects and for voluntary offset projects. However, this standard can be applied to energy efficiency and renewable energy projects only.

The CCBS focus on land-based climate change mitigation projects, including among others forest conservation, reforestation activities and agro-forestry. The standard is a project design standard aiming to ensure robust project design and local community and biodiversity benefits, but does not verify quantified carbon offsets. The standard does not have any clear rules regarding BS, but has developed a set of useful tools and guidelines

[51] The Chicago Climate Exchange (CCX) is a voluntary GHG emission market based in North America.

in order to ensure and measure co-benefits (Kollmus et al. 2008). New REDD Social & Environmental Standards currently under development are expected to be finalized for testing by March 2010 (The Climate, Community and Biodiversity Alliance 2009).

Plan Vivo aims to provide sustainable rural livelihoods through the establishment of carbon projects in close cooperation with rural communities. Its grassroots approach aims to help the very poorest, something that is more difficult to achieve through many of the large global standards. Plan Vivo projects attempt to improve the livelihoods of rural farmers while making it economically viable to let the trees stand also after payments from carbon credits have ceased (10-15 years). Plan Vivo projects deliver high co-benefits, but carbon offsets are less secure since farmers partly are paid ex-ante to carbon benefits delivery (Kollmus et al. 2008). The Scolel Té project in Mexico presented in Box 4.5) is a Plan Vivo project.

Box 4.5 The Scolel Té project in southern Mexico – a voluntary initiative focused on BS and poverty alleviation

The Scolel Té project in southern Mexico started in 1996 and was designed especially to allow small-scale farmers and communities to participate in carbon trading. As opposed to most other projects that start by estimating carbon sequestration potential and what the costs would be for international buyers, the Scolel Té project took the perspective of local farmers. First, land use practices that communities and local farmers wished to implement were identified, before potential carbon benefits were analyzed in order to assess how these benefits could be used to raise capital to finance implementation of these land use activities. A goal for the project has been to set up a system for sale of carbon services from small-scale landowners that would also contribute to improvement of rural livelihoods.

A first phase of the project ran from 1996 to 1999. The objective of this phase was to identify requirements and develop appropriate solutions for design of the subsequent project. Carbon sequestration potential of different agro forestry and forest management practices were identified. At the same time, effort was put into developing demand for carbon credits by approaching various organizations with "prototype emission reduction credits". This first phase also identified four key principles important for the design of the subsequent project and the planning system; (i) *transparency* – a clear understanding of roles, rights and responsibilities for all actors involved, (ii) *simplicity* – small-scale producers of carbon assets need simple, standardized procedures for their activities, (iii) *flexibility* – producers want to provide different amounts of carbon services from different types of forestry systems at different times, and (iv) *evidence-based* – verifiable, documented data is needed to assure the quality and credibility of the system.

To administer carbon assets and money flows a trust fund, the Fondo Bioclimatico, was established to work as a bank account and a clearing house. When an individual or a group of farmers gets their forestry plans accepted by Fondo, a "carbon account" and a corresponding money account is established. In general, 20 percent of carbon benefits expected from a forestry plan are allocated to the farmer's account as soon as the plan is accepted as a means to provide working capital. Participating farmers agrees to make "reasonable efforts" to ensure permanence of forestry systems set out in their plans. In case of non-continuation of the scheme, 5 percent of the value of timber products will be ceded to the Fondo. Only 72 percent of estimated total carbon uptake is traded. The rest is kept as a safeguard to compensate future potential leakage.

In 2002 carbon credits were sold at US$12 per ton (US$3 per ton CO_2). The sale price reflects start-up costs for the forestry activities established, but also takes into account carbon prices from other projects in the forestry sector. 60 percent of the sale price goes directly to the farmers and communities involved to cover investments described in their forestry plans. The remaining 40 percent is used to cover technical support for farmers, administration of carbon accounts, liaison with purchasers, monitoring and reporting. The largest purchaser of voluntary carbon credits from the project is the International Automobile Federation (FIA). Other purchasers include the World Economic Forum, the rock group Pink Floyd and the carbon trading company Future Forests. An independent assessment of economic benefits derived from the project estimated the discounted benefits of most participants was found in the interval between minus US$110 and plus US$1700 per hectare. Labor inputs and carbon credit sales are included in these estimates, while other possible benefits like soil conservation, income diversification, and availability of secondary forest products are not.

Source: Tipper (2002) and Corbera (2005)

The Noel Kempff project – a high profile voluntary initiative

A high-profile voluntary carbon project is The Noel Kempff Climate Action Project (NKCAP) in Bolivia, as described in Box 4.6. The project is by some considered a success, but it has also been criticized for overestimating its carbon potential.

Greenpeace is pointing out that the NKCAP first envisioned total emission reductions to be 55 million tons and that this later has been reduced to 5.8 million tons. This drastic reduction in expected emission reductions stem from the use of satellite technology and better computer models that adjusted the reference path. Forestry experts have taken the

experiences from the NKCAP into account, and global standards for measuring forestry projects' carbon storage potential have been developed (Eilperin 2009). The independent verification of the project's reduced emissions highlights the view that it is possible to scientifically monitor and measure carbon storage in forests (Seifert-Granzin 2008).

The project has a specific BS mechanism between the Bolivian government and the corporate partners. Indigenous people and local communities benefit from a share of the revenues accruing to the government, which is then set aside for local development projects (see Box 4.6).

Box 4.6 The Noel Kempff Climate Action Project – Functioning BS between government and private sector

The Noel Kempff Climate Action Project (NKCAP) was, in 2005, the first forest emissions reduction project to be verified by a third party according to standards set out in the Kyoto Protocol. Although the project does not qualify under CDM, the verification makes it possible to compare its results to other CDM projects. Verified net emission reductions from 1997 to 2005 were 1,034,107 tons CO_2 (expected total emission reductions over 30 years are expected to be 5.8 million tones CO_2). This was achieved through cooperative efforts by U.S. utility companies, non-profit organizations and the Bolivian government. Timber concessions adjacent to the Noel Kempff Marcado National Park have been bought out and the park has been extended to its natural boundaries. The project reduces emissions by avoiding degradation caused by industrial logging and deforestation caused by small-scale slash-and-burn practices. Ownership of emission reductions are shared between the corporate partners who receive 51 percent, and the Bolivian government who receives 49 percent. The Bolivian Government has earmarked 15 percent for protection of the park, 5 percent for a national system of protected areas, and 29 percent for other purposes like improving living conditions for indigenous people living adjacent to the park. Parts of emission credits belonging to the Government will be offered at the Chicago Climate Exchange (Seifert-Granzin 2008).

Positive effects of the project for the local communities include:

- Help to acquire land titles to 360,000 hectares of their traditional native territory
- Improved access to health care services, potable water supplies, sanitation systems, road repairs, and improved educational services including a scholarship program
- Possibilities to participate in park management and employment opportunities (park guards and carbon monitoring technicians)

Establishment of a community forestry program promoting sustainable management of natural resources

Source: The Nature Conservancy (2009)

The reference level and leakage effects impacts on total payments available for sharing

Leakage (deforestation or degradation shifts to an area outside the project boundary) is an important issue related to project-based REDD mechanisms. Due to tracking of a national degradation baseline and regional monitoring of small-scale deforestation, it has been possible to calculate and monitor leakage under the NKCPA. 68 percent of total calculated CO_2 emission reductions in the project are related to avoided logging. Leakage due to shifting of timber production to areas outside the national park but inside Bolivian territory has been identified, and calculated to amount to 16 percent of previous calculated emission reductions. In other situations illegal logging and shifting of cash crop production due to large-scale deforestation avoidance can be much more difficult to monitor and control. An internationally agreed upon national accounting mechanism for REDD could contribute to reducing this challenge (Seifert-Granzin 2008). Carbon payments should be given for the net reduction in carbon emissions stemming from a project and leakage therefore need to be monitored and accounted for.

Taxation under CDM – a potential instrument for BS

The above discussion of poverty and BS under CDM and voluntary carbon markets, centered around how such projects directly impact the living standards in the local area where a project is implemented.

As discussed in Chapter 3 REDD activities may generate considerable rent, i.e. surplus above the costs of reduced emissions or carbon stock enhancements. The government of any REDD country could conceivably tax sales of carbon credits accruing to private project-level carbon investors. Under the CDM, China does this for different CDM projects. China explicitly states that a share of the certified emission reduction credits under CDM shall belong to the government (for example 30 percent of revenues for some projects, 65 percent for others).

Muller (2007) recommends taxing the profits of CDM projects as a solution to strengthening the sustainable development and BS aspects of CDM projects. The revenue from extracting the CDM rent can be used to fund national sustainable development and poverty alleviation strategies. Muller (2007) also suggests that such taxes may be harmonized on the international level. Rent extraction through taxation is a possible option also for future REDD project investments on the local level by private sector actors. It is fairly clear from the experiences of CDM (more generally) and from voluntary carbon forestry projects, that it is difficult to achieve both emission reductions and sustainable development impacts at the same time. A tax dedicated to the second objective may be a good alternative.

Key lessons from BS under voluntary carbon markets and CDM

The following key lessons can be identified:

- BS and contribution to sustainable development has been largely been left to individual CDM countries and designated national authorities to define and oversee. No clear requirements from the international CDM board.
- Complex rules and no clear definition of sustainable development requirements under CDM make it difficult to include forestry projects. Contributions to sustainable development from CDM projects have not been as significant as expected.
- The complexity of CDM rules can be seen as an enemy of the poor, in that projects that would have had development impacts are shelved due to the transaction costs and bureaucracy. It is important for REDD to learn from this CDM experience.
- The world's first CDM forest project in China highlights the need to keep costs of participation down in order to provide equal access to benefits.
- The international distribution of CDM projects and potential sustainable development benefits from such projects have been very unequal, with most projects implemented in China.
- Timing of payments is important in order to provide incentives to participate, especially for poorer groups with little access to credit facing long-term (and sometimes uncertain) investments.
- Experiences from the voluntary carbon markets points out that there is a need for global standard addressing both the measurements of carbon and contribution to sustainable development (including BS).
- The Mexican case illustrates the possibility to explicitly consider poverty and BS issues and deliver emission reductions at the same time in voluntary carbon projects.

- The Noel Kempff case and the criticism from Greenpeace shows the importance of reference emission level establishment – determines level of payments.
- Leakage effects also contribute to determining total amount of payments available. Needs to be considered at a sufficient scale around project sites.
- Carbon project developers may be better at delivering emission reductions than considering poverty and BS issues. An option may be to tax carbon credits and use funds for redistribution and funding of livelihood programs in the project area delivered thorough other institutions.

4.5 COMMUNITY FOREST MANAGEMENT

The purpose of CFM

In the 1970s and 1980s community forest management (CFM) was introduced as a means to improve degraded forest areas. It was mainly areas that were of no commercial interest that were placed under CFM and the idea was that the communities would provide labor and protection that would lead to forest regeneration. From the beginning, this was the main goal of CFM, but by the end of the 1970s the social dimension and rural people's dependency on forest resources were given increased attention (Warner 2006).

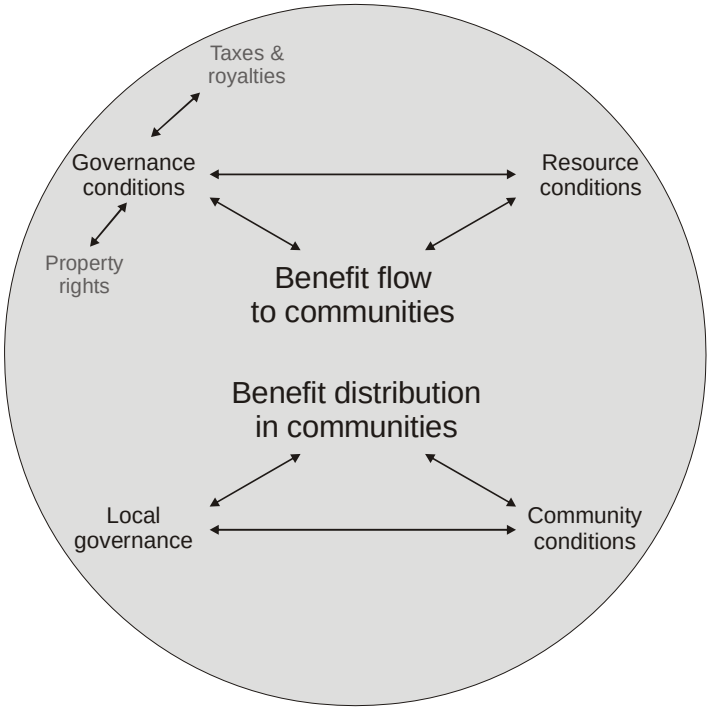
Today it is estimated that about 14 percent of forests in developing countries are under some kind of CFM regime. Under these regimes people in communities have the legal rights to manage and utilize the forest and its products in accordance with jointly agreed management plans developed to secure sustainable management of the forest area. Proper management of the forest in order to secure future delivery of benefits is a common, overreaching motivation to participate in CFM. The types of benefits and objectives of CFM may however differ both between and within communities. Important benefits include predictable access to firewood and fodder, revenue from eco-tourism or increase in the size of habitats for wild animals. Sustainable timber take-off is also the goal of many CFM regimes and typically the main source of monetary benefits to communities (Murdiyarso and Skutsch 2006b).

In this section we look at some experiences with CFM around the world, with particular focus on BS. Continued and strengthened CFM is a likely part of any national REDD strategy (see e.g. Agrawal and Angelsen 2009). Resource conditions and government conditions influencing the amount of benefits available for distribution and challenges concerning a fair distribution of benefits within communities are highlighted.

Different social and physical conditions affect level of benefits and BS mechanisms

CFM may generate many types of monetary (and non-monetary) benefits for different community stakeholders. The amount of monetary benefits and how these benefits are distributed depend on many factors. Governance conditions like tax regimes and legal rights granted communities, forest conditions and socio-economic conditions within a community are all recognized as factors playing an important role for both level of benefits and BS under CFM (Mahanty and Nurse 2007). Figure 4.1 pictures the links and relationships between these factors. It illustrates how resource conditions and governance conditions like tax regimes and property rights impact on the amount of benefits flowing to the community from CFM. It is as alternative way of breaking down the horizontal dimension of BS, as discussed in Chapter 3.

Figure 4.1 Benefit flow and benefit sharing in CFM



Source: Mahanty and Nurse (2007)

Size and condition of forest resources allocated to CFM directly influence the amount of benefits available to be shared among community members and incentives to manage the land in a sustainable manner. If benefits that can be obtained through exploitation and illegal activities far outweigh possible benefits to the communities from sound, long-term management, it is not likely that communities will enter into a CFM arrangement. A common criticism of forest areas given to communities is that they are too small and degraded to provide sufficient benefits.

Establishment of communities' legal rights to forests and forest resources is important as a means to provide incentives to manage the forest in a sustainable manner. The question of granting local communities property rights has caused debate and conflict in many countries. The resolution in many countries has been to keep ownership of the forests with the state, while granting communities use and management rights. Secure property rights provide communities with the basis to develop long-term forest management plans and to self regulate resource harvesting in order to enjoy larger benefits in the future.

Consistency between laws at different levels, and between formal laws and local/ traditional norms and rules is also important. A workshop on BS in community-based natural resource management in the Mekong Region suggested that such conflicts could be minimized by creating national laws with flexibility to let specific rules be determined at the local level (Mahanty et al. 2007). If legal rights are stricter than existing informal arrangements, the communities may however end up with access to less forest benefits than they had prior to introduction of legal property rights. Further distribution of available benefits within the community depends on local governance and community conditions. Formal or informal rules and customs influence power structures and decision making regarding BS in the communities.

Nepal has many examples of successful CFM arrangements. A reason for this may be the specific government policy to involve local communities in forest management through Community Forest User Groups (CFUG). In addition, rules allowing the communities to

keep almost all revenue from CF provide a strong, local incentive for effective management (see Box 4.7). By 2004 about 25 percent of all national forests were under CFM, and around 35 percent of the population is involved in a CFUG. As a general rule in Nepal, members of CFUGs pay a nominal fee in order to collect forest products for household needs, but are not allowed to harvest individually for commercial purposes. Timber harvesting is strictly regulated and supervised by a Forest User Committee, and sales are organized through an open bidding process. All income from timber sales goes to the CFUG. Both income from the nominal fee paid by members and income from the sale of products are mainly reinvested in social infrastructure projects as requested by members of the community. About 28 percent of the revenue from community forest activities is spent on forest protection and management (Karky 2006).

Numerous experiences with CFM regimes exist, as for example documented in the case study collections of Murdiyarso and Skutsch (2006a), Mahnty et al. (2007) and Oberndorf et al. (2006).

BS between communities and the state often regulated using taxes and royalties

A number of countries have developed policies and guidelines regarding revenue sharing in CFM. These guidelines mainly address how benefits are to be shared between the state and communities (vertical BS), while it is left up to the communities to develop internal benefit sharing mechanisms (horizontal BS). What share of the benefits that go to the state and what is retained in the communities differ between countries.

Non-Timber Forest Products (NTFP) can generally be collected for household use for free, while commercial use may require permits and be subject to taxes or royalties payable to the government. These taxes or royalties might be paid both to central and local government, or for example to central government who distributes some back to local or regional government institutions Extraction of timber and other forest resources of potentially high value are usually more strictly regulated, and existing BS practices range from schemes where the communities are allowed to keep all income from commercial use of timber to schemes where the greater part of revenue stays in government hands. In some countries parts of the money collected by the government go into some kind of Forest Management Fund intended to be invested back into forest management (e.g. tree planting, thinning etc).

In the Philippines an interesting distinction is drawn between forests planted by the communities and natural forests or plantations established by government investment. In the first case the communities can keep all income, while in the latter cases 25 percent royalty is paid to government both for timber and NTFB (RECOFTC, FAO and SNV 2007). Some other examples of national frameworks for revenue distribution from CFM are presented in Box 4.7.

Box 4.7 Examples on national policies or guidelines on BS from CFM

Bhutan:	No tax or royalty on direct use of forest resources, but a 5 percent sales tax on all forest products sold.
Cambodia:	Direct use of NTFP and timber is not subject to tax or royalty, while commercial use of timber and NTFP requires permits, and the level of royalty is decided jointly by the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Economy and Finance.
India:	Decided at provincial level. Usually the communities may keep all revenue from NTFP and other intermittent yield products (e.g. thinning), while 10-25 percent of revenue from commercial timber production is paid to the government.
Nepal:	Community Forest User Groups (CFUG) retain all income from both NTFP and timber except for a couple of species where a 15 percent royalty is paid if sold for commercial purposes outside the CFUG.

Source: RECOFTC, FAO and SNV (2007)

Clear rules regarding BS can improve transparency

Participants at the Second Community Forestry Forum in Thailand in 2007 agreed that rules and guidelines regarding sharing of benefits between communities and the government (vertical sharing) was important as a means to improve transparency, and consequently reduce opportunities for rent seeking and corruption. It also provides communities with predictable levels of return from different forest resources and investments in these resources. A common objection to the government taxes is however that they are too high and that the costs of forest management born by communities should be taken into account when deciding appropriate BS. In addition, money collected as contributions to Forest Management Funds is not perceived to be reinvested back into community forestry in a satisfactory manner (RECOFTC, FAO and SNV 2007). Referring back to Chapter 3, it is clear that if too much of the revenue is collected by the government both legitimacy of the CFM enterprise and effective incentives for sustainable management of community forests may suffer.

Horizontal BS (within communities) is typically decided by each community

As a general rule in CFM, communities develop a forest management plan and regulations for forest protection. In many countries the management plans follow simplified procedures compared to commercial forestry operations (see Chapter 4.6). They cover management issues related to which resources members of the community may utilize, at which rate, requirements to participate in forest related activities, BS within the community etc. How the decisions regarding CFM and BS are made vary with factors like custom, existing guidelines and regulations, but usually include some executive group representing the community members.

In A Ro village in Vie Nam it is the village head and an elected Village Forest Management Board (VFMB) who dominates decision making processes, but BS arrangements need to be presented all villagers for approval. Management plans and harvesting operations also need approval from local government institutions. The main activities and implementing regulations developed for the community forest in A Ro village are presented in Table 4.1.

Table 4.1 Forest protection and development regulations developed in A Ro village

Activities	Implementing Regulations
Fire prevention	Regulatory checking and patrolling forests. Prohibition on using fire in the forest. Prohibition on entering the forest in the fire season. Clearing and cutting of fire brakes to prevent forest fires spreading to adjacent crops. All villagers are obliged to assist in a forest fire emergency.
Cattle grazing	Prohibition on free grazing of cattle in the forest. Violations: - the first violation is treated with a warning in front of the village -the second and subsequent violations are recorded and taken to commune people's committee (CPC) to resolve.
Harvesting of non-timber-forest products	Outsiders are not allowed to harvest. If discovered, the illegally collected products are confiscated. Total harvest of bamboo shoots must not exceed 2/3 of total bamboo stems, leaving 1/3 shoots to maintain a viable crop for constructions.
Hunting and harvesting of wildlife	Hunting and harvesting of wildlife is forbidden, except for mice. Monkeys. And wild boars which cause damage to cropland.

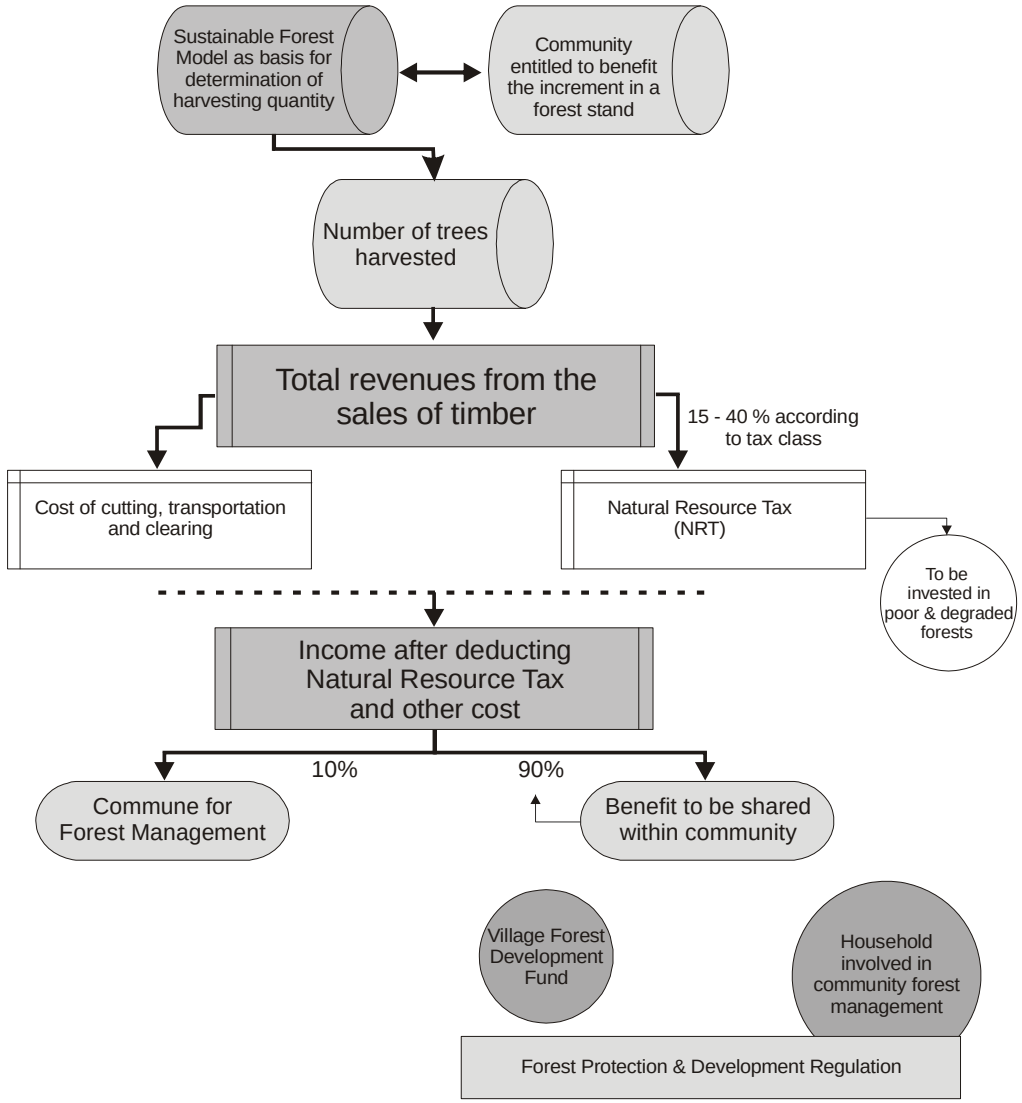
Source: Mai (2007)

The amount of benefits retrieved from the community forest (CF) in A Ro village is still quite small due to size and quality of the forest area, but all villagers can collect NTFPs available free of charge. Based on the forest management plan developed, the VFMB creates an annual timber harvesting plan and informs the villagers. Households can then submit applications for a proportion of the timber. If the total request for timber exceeds what is available, the VFMB decides who will receive timber based on poverty status, condition of house, and participation in protection duties. The CF include four ha of acacia, and when this is harvested 50 percent of the volume will be shared between households who have contributed labor for planting and protecting the forest. The remaining 50 percent will go into the village forest development fund after 15 percent have been paid as a resource tax to the commune for their supervision of management activities and monitoring. If outsiders are caught conduction illegal activities in the CF, the offender has to compensate the community for the damage caused according to market value and agreement between VFMB and offender's village. Compensations like these are to be shared between the person discovering the infringement (20 percent), the person detaining the offender (20 percent) and the village fund (60 percent) (Mai 2007).

In another village in Viet Nam, T'Li village, a BS system for timber harvested both for use by the villagers and for commercial purposes is trialed as a part of the Rural Development Project of Dak Lak in Viet Nam. This BS regime is based on the Village Forest Protection and Development Regulations (FPDRs), agreed upon by the entire village and approved by the local authority. An underlying premise for the regime is a commonly accepted model for Sustainable Forest Management (SFM). Based on SFM, the number of trees that can be harvested is decided, and following this The Village Forest Management Board (VFMB) decides the number of trees households can harvest for personal consumption, the fee households must pay in partial fees to the village fund for these trees, and the amount of trees that can be harvested for commercial purposes in order to contribute to the village fund for forest management (Huy 2006). Benefits from the trees that are sold are shared according to the system illustrated in Box 4.8. The same BS

mechanism has been trialed in three other villages in the Central Highlands in Viet Nam. Experiences show that forests were in a stable status after harvesting and that income were generated for the community households. Still, the BS mechanism is quite complex and not perceived as practically feasible (Huy no date).

Box 4.8 *Example of BS mechanism for commercial timber, T'Li village in Viet Nam – a case of complexity in implementation*



Steps in sharing of benefits from timber harvested for commercial purposes:

1. A natural resource tax of 15-40 percent of the sales price (dependent on timber groups and diameter classes) is paid to the commune and goes back into forest management, or investment and development of bare or degraded land.
2. All costs associated with harvesting (e.g. felling, transportation, and forest cleaning) are covered.
3. 10 percent of what is left goes to the Commune People's Committee (CPC) for forest management costs and an allowance for the Commune Forest Management Board (CFMB).

The remaining 90 percent goes to the village and is shared between the Village Forest Management Board (VFMB), the village fund and households involved CFM.

Source: Huy (2006) and Huy (no date)

BS under community-based forest product enterprises

FAO and other organizations promote the creation of community-based tree and forest product enterprises as a means to increase the amount of benefits the communities receive from forest resources. A participatory methodology named Market Analysis and Development (MA&D), has been developed in order to assist local people establish small-scale income generating enterprises while ensuring sustainable use of forest resources. Products based on forest resources that have been commercialized through such enterprises include among others honey, mulberry paper, palm oil, handicrafts, eco-tourism, mushrooms, rattan, bamboo shoots, fire wood etc. (FAO 2009).

How benefits are shared varies depending on the kind of organizational structure that is chosen for the enterprises, but social aspects are included in the MA&D approach in a systematic manner and a social strategy should be developed as part of the planning process. The aim of the social plan is to ensure participation of women and disadvantaged members of the community, and that all interested community members have a chance to participate in decision making. An enterprise may for example decide that poor households that are unable to buy shares in a cooperative may acquire shares by contributing NTFP when these are harvested (FAO and RECOFTC 2000).

Experiences indicate that benefits from an enterprise primarily go to community members participating in the various enterprises. This set-up means that the enterprise's social plans are important for the potential of community-based businesses to benefit a larger number or all members of a community. However, as mentioned in Chapter 3, for incentives to work so that businesses are developed in the first place, those individuals making the effort and taking the risk, needs to get the lion's share of the proceeds.

In a handicraft enterprise in Uganda each entrepreneur receives proceeds from its own production of crafts. Members of another enterprise rent a piece of land for growing potatoes, cultivate it together and share proceeds equally. An example of mushroom enterprises show that capital investment needed to start mushroom production is such that interested community members go together to set up growing rooms. Groups consisting of about five members collaborate, and proceeds are shared equally among group members. A fund is also set up within the group to make sure there is always money available to purchase spawns (FAO 2005).

All community members does not necessarily profit equally from CFM

Box 4.9 describes BS from CFM in the village of Kongo in Cameroon, and illustrates that equitable horizontal BS does not happen automatically. Who holds the formal rights and who has the real power in a community is also important for BS and especially for women and other marginalized groups in a community. Elite capture of benefits is often observed. Wealthy and middle-class groups in a community is more likely to participate in decision making and income generating enterprises that require input of time and money, i.e. upfront investment prior to any proceeds are generated. Furthermore, benefits flowing to specific community groups may widen and reinforce existing inequalities.

In Nepal this problem has been addressed through a program especially designed to foster good governance practices (participation, transparency, accountability and predictability) and to ensure poor and marginalized people adequate representation in CFUGs and consequently a say in decision making and BS. The process was supported by capacity building activities to develop leadership and group management skills in CFUGs, governance literacy classes and policy advocacy campaigns. The program has enabled disadvantaged community members to better stand up for their rights as a group, and the number of women, poor and other marginalized community members represented in key decision making roles in community forestry bodies has increased (RECOFTC,

FAO and SNV 2007). Still, many challenges remain and decision making processes remain elite dominated in many places. Some reports even indicate that participation of poor and disadvantaged community members in decision making processes is perceived as a formal presence to make quorum (sufficient number) for decisions made (Koirala 2007).

Box 4.9 Kongo Community Forestry, Cameroon – elite capture and domination a problem in BS

The village of Kongo in the Lomie region in Cameroon has a population of 500, and through the assistance from Netherlands Development Organization (SNV) established a community forest in august 2000 (Oyono et al. 2006). The forest covers 3,000 hectares and is rich in flora and fauna. The community forest is managed by a management committee according to a simple management plan. The plan divides the community forest into various user zones, including plots set aside for logging activities. The management committee signed contracts with three logging companies, which extracted 1 096 cubic meters of sawn wood from the forest over a period of five years (Cuny et al. 2006). Furthermore, the plan states that the socioeconomic priorities for the community are the establishment of a palm plantation, habitat improvement and the construction of a village water system and a community hall.

Positive social and economic results from community forestry activities in Kongo include the consolidation of local human and social capital, as well as increased interaction with external actors such as various NGOs, research organizations and ministry officials (Oyono et al. 2006). Furthermore, the logging activities generated about USD 87 000, of which 73 percent of the revenues were spent on wages to the members of the management council and 27 percent on community development initiatives (Cuny et al. 2006). The community investments included, among others, the provision of aluminum roofs for 33 of 75 households in the village as well as the acquisition of a sawmill (Oyono et al. 2006).

There were also some negative social and economic impacts in Kongo (Oyono et al. 2006). In social terms, a new “environmental elite” was established consisting of the representatives in the management committee who got access to financial benefits. These people formed the “nouveaux riches” which created tension and a source of conflict. Furthermore, the institutional and organizational structure led to the marginalization of traditional authorities, and young people and women were generally excluded from the forestry game. Finally, a large share of revenues appears to have been misappropriated. The level of awareness concerning volume of timber harvested and how much money should be generated remains low. The management committee did not report on the revenues or discuss their revenue management with the community members, and consequently downward accountability and transparency became unclear and difficult.

Finally, Kongo community is neighboring a forestry concession area, and is therefore entitled to receive Annual forest fee (RFA). In the period of 2001 to 2003, the community should have received about USD 6200, however no accounts or evidence currently exists that this money has been disbursed from the municipality or has been invested for the benefit of the community (Oyono et al. 2006).

Key lessons from BS under CFM

A recent study of 80 forest commons in 10 countries across Asia, Africa and Latin America (Chhatre and Agrawal 2009) conclude that there are three important implications for decentralization reforms transferring forest management rights to local communities:

- Chances of improving both livelihood and carbon storage increase with the size of land given to the communities for management.
- Improvements in livelihood benefits and carbon storage can potentially be secured if the communities have the rights to make their own rules about how to manage the forests.

- Transfer of ownership, and not just management and use rights, is likely to enhance carbon storage because local communities are less likely to overharvest livelihood benefits from the forests they own.

Our review concurs with these lessons, which are also important to consider for implementation of BS schemes under CFM. Furthermore, we add the following:

- Monetary benefits from CFM available for sharing come mostly from timber harvesting for sale and to a lesser extent collection of NTFPs.
- Devolution of formal property rights of CFs locally has created conflict. A common resolution is to keep forest under public ownership, granting communities use and management rights. It is also important also harmonize formal laws and local/traditional norms and rules.
- BS mechanisms under CFM vary between countries and contexts. Vertical BS is often regulated using state regulations for taxes and royalties, some of which is distributed back in the form of forest investment funds. Percentages vary widely. Complaints have been made that revenues are not perceived to have been reinvested back in CFM.
- Government framework conditions including legal rights and tax regimes are important for incentives of CFM schemes. Keeping a large share locally is the main incentive and driver for sustainable forest management in CFs.
- Clear and stable rules on vertical BS, give predictable incomes important for investment and more transparency in management of funds. Risk and uncertainty for investments are thus reduced.
- Typically complicated and costly government procedures for establishment of CFM are a large disincentive for increasing land under CFM, and cause illegal and unsustainable practices to continue. To increase such schemes, as observed in several African countries, procedures need to be simplified.
- While vertical BS is typically specified by national regulations, horizontal BS (within communities) is often left for communities to decide.
- Large degree of local responsibility over horizontal BS, gives communities ownership and chance to do what is best for them, but also risks reinforcing existing power structures vulnerable to elite capture of benefits. Fair BS does not happen automatically.
- Horizontal BS schemes should as far as possible be kept simple and easy to understand. This will reduce transaction costs and also make incentives more transparent, direct and clear.
- Local decision making including marginalized groups in communities will make horizontal BS arrangements more equitable, fair and transparent.
- Income from community-based forest product enterprises are typically captured by main participants – providing them with incentives to start and operate businesses. There are ways to include marginalized groups, e.g. allowing them to contribute NTFPs during harvest for investment, rather than cash.

4.6 SUSTAINABLE FOREST MANAGEMENT

Sustainable forest management (SFM) – REDD culprit or part of the solution?

SFM – logging and forest management on large areas of public or private forests – is sometimes seen as the culprit in the REDD discussions[52]. However, as discussed in Chapter 3, even with the value of climate change and loss of biodiversity and other environmental services factored into decisions, it will still make sense for tropical forestry to continue in many areas. This will give much needed revenues for government budgets and contribute to the economic development of countries. However, many of the forestry activities could become more carbon-, biodiversity- and people friendly with potential REDD payments. Increased certification efforts are an example to change forest management practices in the right direction. Regardless of one's view on this point, existing BS systems set up to distribute revenues from forestry activities may still offer lessons wider relevance for REDD.

SFM and exploitation of forest resources is usually a source of large revenues both for forest owners and for timber companies – and potentially for the state. In this section we will examine examples of how such benefits are distributed between the state, forest companies and local populations. This involves both vertical and horizontal BS. As discussed in Chapter 3, timber companies share benefits typically in two main ways:

- Through payment of taxes and fees to government (which then in turn may or may not be distributed more widely by government), and
- Through direct activities in local communities either as requirements of management plans or as voluntary corporate social responsibility (CSR) activities.

We go through these two in turn, starting with the government role and revenues from SFM.

Concessions are a source of large forest revenues

The main system for exploitation of forest benefits in state-owned forests are through concessions and licenses[53]. Features distinguishing concessions and how the forest is exploited relates to duration of the contract, geographic scope, management or infra-structure obligations, exclusivity, resources covered, eligibility and nature of payment. As a general rule, concessions involve a long-term permission to exploit timber resources in a typically large area. A part of the contract may be that the company granted a concession must take on management duties like planning, reforestation, construction and maintenance of roads and other infrastructure.

A company granted a timber concession pays the government according to factors such as the size of the land included in the concession and volume of timber harvested. In addition to direct payments to the state in the form of taxes and royalties, a company may be required to post completion bonds, pay local communities, provide local employment, or create assets for the local population. Such contributions may range from recreational facilities to local schools and health clinics. In return for its payments and other obligations, the company receives exclusive rights to exploit timber resources within the

[52] Refer to our comment on the use of terms "sustainable forest management" and "sustainably managed forests" in footnote in Chapter 4.1.

[53] There are no clear distinctions between concessions and licenses, and the terms are used interchangeably in this chapter. Different countries use different terms for their concessions, and words like contracts, agreements, sales and permits may all have the same meaning.

concession area, sometimes with exceptions for non-commercial use by local communities (Christy et al. 2007).

Traditionally, the use of guidelines and pre-defined criteria, e.g. transparent public auction procedures, as a means to reward concessions have not been a part of the regulatory framework, hence leaving plenty of room for corruption and other factors than suitability of logging companies to determine forest exploitation. In recent years there has however been a promising trend towards formal regulation of the concession allocation process. Criteria used to evaluate potential licensee companies include among others nationality (usually favoring national or at least partly national ownership) and whether a company holds other concessions in the country (to avoid putting too much of the country's forest assets in the hands of the same company), and technical competence.

The type of business organization permitted to hold concessions might also be regulated, and previous experiences with a company can influence the evaluation of its suitability to undertake requested obligations. Technical requirements depend on the kind of forest management services that are sought, but may include management plans, processing and marketing plans etc. The amount of money paid by the licensee is of course also given consideration. Competitive bidding processes are being used more and more in order to ensure a forest-owning state the highest possible price in relation to the services delivered. Competitive bidding is for example used for concession allocation in the Democratic Republic of Congo and in Cameroon (Christy et al. 2007) (see also Chapter 5.2).

Income from private forests can be redistributed by the use of taxes

The government in a country can also influence management practices in private forests and plantations by the use of taxes or other incentives. Examples of such incentives include reduced or deferred property taxes on forest land, tax reductions or cash subsidies for reforestation activities, and lower tax on timber sales than on ordinary business income. Subsidies may also be given to specific forest operations. Formal laws in place for private forestry differ between countries and range from none at all to detailed regulations placing the same rules on private forests as on public forests. The motivation to regulate private forestry can be both to secure sustainable management of forest resources, to raise public revenue, or to protect property interests of other forest owners (Christy et al. 2007).

State income from forest concessions and BS

State income from forest concessions can take various forms, and a large variety of different systems exist throughout the world. Fees can be calculated and collected in a number of different ways. A widely used method is stumpage fee, where the value of standing trees is estimated by calculating the value of logs and the costs associated with felling, extraction and transport to market.

Other existing fees are land rent, reforestation fees, export fees, as well as a variety of other levies and payments. Reforestation fees are an example of a fee able to serve different purposes. An obvious purpose is as a substitute for reforestation that would otherwise have been required e.g. in the management plan. A fee like this also provides the forest owner with flexibility to have firms with specialized competence related to reforestation perform the task. Furthermore, reforestation may also be carried out in another location if that is more desirable. Reforestation fees may also work as a guarantee for reforestation in the form of a deposit being refunded when reforestation is properly carried out. Alternatively, it may also just be another fee, with no relation to the costs of reforestation, or it allows forest administration to keep some revenue out of the general

accounts. Different kinds of forest funds are used in many countries as a way of keeping forest revenues in the forestry sector and allowing easier procedures for disbursements of expenses related to forest management activities the fund is set up to secure. Fund revenue commonly stem from forest fees, fines from forest offenses and/or the general budget.

The kind and amount of fees and royalties collected, in addition to how theses are shared between the state and the region were logging activities are taking place vary between countries, too. In Indonesia the government attaches three basic fees to forest concessions; Forest Utilization Business Permit Fees (FUBPF), Reforestation Funds and Forest Resource Tax (FRT). The FUBPF is based on the area of forest allocated in the concession and typically range from US$ 3 to US$ 10 per hectare. 80 percent of the money goes back to the region (16 percent to province and 64 percent to district) while 20 percent are kept by the central government.

Fees to the Reforestation Fund are based on cubic meter of wood harvested, and vary by species group and region. 40 percent of these funds are allocated to the provinces and 60 percent to central government. FRT is a royalty on logs and is calculated based on volume harvested. This fee is also subject to variation between regions and species, but collected revenue are allocated 80 percent to the region (16 percent to province, 32 percent to producing kabupaten[54] and 32 percent to other kabupatens) and 20 percent to the government. In addition to these three national fees, the numerous districts in the country collect a variety of local levies. It is difficult to get an overview of the legal status and the total amount of these levies because it is usually not communicated to central government (Christy et al. 2007).

Even though the BS systems in place for timber concessions vary, they typically have the dual purpose in common of providing revenues for the state and to compensate local communities and governments for negative impacts of logging operations in nearby forests. The percentage shares for different stakeholders vary, and it is hard to judge on the general level what distribution would be appropriate. This is something which will have to be judged in each case. In order to build some sort of legitimacy around logging operations among communities and the wider population, as discussed in Chapter 3, it is essential that a significant share of the revenues is kept locally.

Many existing BS mechanisms for timber concessions in different tropical forest are well-designed and structured on paper, i.e. they do actually share significant benefits with local communities. However, our review of experiences of actual implementation of such schemes reveal many governance challenges in transferring and managing funds on the local (and central) levels (see also Chapter 5). An example of that from the annual forest tax (RFA) in Cameroon is explained in Box 4.10.

[54] Regency, district or county.

Box 4.10 Annual forest tax (RFA) in Cameroon – a case of sensible BS design, but challenges in implementation

Cameroon has operated with an Annual Forest Tax (RFA) since the 1994 Forestry Law entered into force. The tax base is the area of a forest granted to a private concessionaire through competitive auctions for logging. The Law states that the RFA is to be redistributed for the development of forest communities neighboring the national forest estate (Oyono et al. 2008). Furthermore, the July 1998 Finance law aimed at establishing a fair distribution of the RFA (Topa et al. 2009). The law mandated that 50 percent of the RFA collected should be paid to the state, while 40 percent should be distributed to local councils and the remaining 10 percent to local communities located close to the concession areas. The 10 percent should be divided equally between the villages that are bordering the concession area, regardless of their size (Lescuyer et al. 2008).

The 40 percent to the municipality enters directly into the councils' annual budget, and studies show that the RFA often constitute as much as 80-95 percent of the general council budget (Lescuyer et al. 2008). A local management committee (presided by the Mayor) is responsible for the allocation of the 10 percent to local communities to be spent on local development projects (to be approved by the Mayor) within the amount of the allocated RFA.

The RFA was around 5.60 USD per hectare per year in 2006 (Topa et al. 2009). Since 2000, about USD 12 million has been transferred annually to a population of about 3.2 million people represented by 56 local councils (Topa et al. 2009), averaging less than USD 4 per person per year. An audit performed in 2004 of forest revenues totaling USD 53 million transferred to the local level for a period over five years indicated that more than 65 percent was spent on improving the infrastructure and the operation of local councils themselves.

Experiences with the BS mechanism to date:

It is positive that the collection and distribution of the tax is stated in the legal framework and that it aims at sharing the benefits from forest activities with local government and affected communities. The system is working and the local communities do receive this money, although there are challenges related to the size of the amounts, timing and suspicions of embezzlement and elite capture (especially by Mayors and their close allies). The main negative aspects are all related to the implementation, in particular related to the management of the funds at the local level. There are also challenges related to transparency and information sharing between the management committee and the people in the villages. For instance it is a concern that the Mayor is too involved in the process and the Mayors' priorities do not necessarily represent the local villagers' needs. Further, as the local people have not been sensitized and trained before receiving the funds, they are also not well prepared to plan and invest the money wisely.

Voluntary company-led initiatives and BS can secure local cooperation

In addition to paying taxes and fees, timber companies share benefits in other ways, through their concessions obligations to contribute directly to local community projects and maybe more importantly through voluntary CSR activities.

Certification schemes may require that companies share benefits with local population

Growing public awareness of deforestation and forest degradation has led to a market for certification of forest products and forest management practices. A certification serves as an assurance for customers that the timber products have met a set of pre-defined requirements designed to ensure sustainable forest management and timber extraction. One of the best known international certification standards is developed and maintained by the Forest Stewardship Council (FSC). FSC is an example of a worldwide nonprofit organization that early recognized the potential of wood certification as a means to enhance responsible forest management in countries where the government has not been able (or willing) to secure adequate management of forest resources. FSC has developed a set of criteria and principles forest managers have to follow in order to earn certification for their timber products.

In addition to setting standards for environmental performance, these criteria and principles among other things require forest managers and timber companies to take legal or customary rights of indigenous people and local communities into account when carrying out logging or other forest management activities. Communities within, or adjacent to, a forest management area should also, according to the standard, receive their share of benefits from forest activities and get opportunities for employment, training and other services (FSC 1996). Box 4.11 summarizes what Congolaise Industrielle des Bois' (CIB) of the Republic of the Congo has done in order to get parts of their operations certified.

Box 4.11 Congolaise Industrielle des Bois' (CIB) process towards certification – good practice BS and forestry

Congolaise Industrielle des Bois (CIB) is the largest forest company in the Republic of the Congo, and has operated in remote areas in the north for more than 30 years. CIB initiated a process towards certification of their forest management practice well before the government introduced its most recent forest legislation, and CIB has gone beyond its legal obligations when adapting their management practices to guarantee economic, social and ecological sustainability. The Congolese Forest Code gives local residents rights to exploit wood products for domestic use, rights to hunting, fishing and gathering forest products (within limits provided by law), and rights to establish farmland, beehives, grazing cattle and collecting fodder within forest concessions. CIB has gone further and established special hunting areas for the local pygmy population, and has contributed to fight illegal hunting. Congolese law also requires preferential treatment of national, and more particularly local population, when hiring staff. Since northern Congo is an area with few residents holding required qualifications, CIB has established training centers to train local staff.

Further, CIB has invested in social infrastructure by building houses for its staff, schools, churches, a hospital, a clinic and medical dispensaries. Access to water and electricity has been improved, and staff households have access to free health care and education. A local development fund derived form a self-imposed tax per square meter timber exploited commercially is initiated as a means to reduce poverty and address inequality between local populations.

CIB has actively sought new forest- and people-related knowledge and cooperated with surrounding national parks and conservation groups. As a result of this, key sacred and NTFP-gathering areas of the pygmies and important nature conservation areas have been identified and excluded from logging. Totally about 30 percent of CIB's concession area has consequently been excluded from timber harvesting. Despite good work by CIB addressing sustainability and BS, various challenges still exist. Among these issues is the fact that the locally born population has benefited less than immigrants. For example, health and education services are located in CIB camps and settlements, and even if they are available to all locals, more people living in more remote areas, like many pygmies do, may not be able to use these services due to lack of transport or money. Pygmies are also exploited by other local populations to hunt for them since they have access to exclusive indigenous hunting zones. In addition, an ever-increasing population is putting more pressures on existing resources. The benefits enjoyed around concession areas can lead to significant in-migration, putting pressure on local resources and services.

Source: Ter Heegde and Rietbergen (2008)

Alternative ways to share benefits

Company-led initiatives are increasingly being employed as a tool to address tension stemming from diverting interests related to forest management and BS also when certification is not the main goal. As discussed in Chapter 3, this relates to creating support (or as a minimum: avoid hostility) and legitimacy for logging activities locally. Reasons to initiate local voluntary measures in areas of operations differ between companies, but an underlying argument is that it is worth while investing in these kinds of activities also seen from a business perspective. A good relationship with local stakeholders is an easy way of minimizing time and resource consuming disputes, and a growing demand from customers and shareholders has helped putting CSR on the

agenda. Dialogue and consultations with locals may also be a valuable source of information about local conditions and traditional forest management practices.

A range of different partnerships and arrangements have been established between timber companies and local stakeholders as a way to share benefits from forestry operations. In outgrower schemes timber companies provide production and marketing services to local farmers or communities in order for them to grow trees that the company purchases back according to an existing agreement. These kinds of agreements ensure local communities who are traditional users of the forests a share of the benefits from commercialization of forests. An example of an outgrower scheme is presented in Box 4.12.

Box 4.12 Sappi's "Project Grow" Initiative in Kwa Zulu Natal, South Africa – community-private sector partnership and BS

Sappi is an international pulp and paper company and the second largest private forest owner in South Africa. *Project Grow* was established in 1983 with three farmers growing eight hectares eucalyptus trees. By 2006, the project included 9,800 farmers growing 15,000 hectares of trees. The project is managed by a community development NGO. Before approaching communities Sappi seeks approval from the local chief and senior community members. Then, the rest of the community is informed about the project and interested community members are invited to join the scheme. An ongoing dialogue with participating communities ensure rising issues to be addressed and resolved at an early stage. Through the scheme local communities receive benefits in the form of:

- Free technical advice and training
- Free seedlings
- Interest-free loans to cover input
- Further advances to cover cash flow issues during growth of trees
- Income equaling the value of the trees minus advance payments when the trees are harvested

For Sappi the scheme is an effective way of ensuring a sustainable supply of timber and at the same time share benefits (and risks) with local communities. The *Project Grow* is considered a success by providing smallholder outgrowers a possibility to generate economic returns. Interest-free loans and a guaranteed market enables disadvantaged communities to access the forestry industry. Employment opportunities are also improved, both locally and for contractors during planting and harvesting. The scheme provides benefits for everyone involved, but no-one gets anything for free. This feature leads to a sense of ownership and commitment to the scheme. An indirect benefit of the scheme is increased business activities in the area as money generated is spent or invested in other business. Money is also invested in children's education.

Source: Wilson (2009)

In some countries joint ventures between local communities and businesses have been encouraged as a way of giving local people a say in decision making and a share of benefits derived from forestry. Company-led initiatives may also be simpler contracts where companies contribute to local development, for example by establishing schools and/or health care services, in return for community cooperation (Wilson 2009).

The International Institute for Environment and Development (IIED) reviewed 57 examples of company-community forestry partnerships around the world (Mayers and Vermeulen 2002). Reasons to engage in these partnerships vary, but for companies both external policy and market pressure to engage in fair and sustainable forest management can be important reasons. The potential to cut costs, share risks or gain access to resources by cooperating with local communities can be other reasons. Community contributions to a

partnership can range from provision of land and growing of trees to refraining to engage in activities that go against company interests.

Although no example exists of a 'perfect system', there are many examples of company-community deals able to deliver positive benefits to communities. These positive impacts include among others monetary benefits, diversification of income, development of infrastructure, and better job opportunities. Positive environmental effects are also results of promotion of sustainable forest management through this kind of arrangement. On the other hand, it has not been possible to prove generally that company-community partnerships have managed to reduce poverty, improve working conditions or develop collective bargaining power.

In South Africa for example it is clear that the outgrower schemes are not enough to help households out of poverty even though they count for a substantial share of household income. Company-community deals might also lead to negative effects. Examples of problems encountered include high transaction costs on both sides (leading to higher wood prices for companies and difficulties in negotiating better terms for the communities), negative environmental effects due to clearing of forests for plantations or bad plantation management, and exclusion of disadvantaged community members from schemes were ownership of land or initial capital is needed.

Although positive results do not happen automatically, there are lessons to draw from existing experiences; start-up funding or fiscal incentives can ease start-up problems, so can strengthening of community institutions and inclusion of all social groups in a community. It seems that deals where terms are negotiated rather than set unilaterally generally are working better, and that it is a great advantage if communities are able to register as companies themselves. This makes the community and the company more equal partners with rights and duties following corporate law. A particularly interesting finding is that the position of the community in a partnership seems to strengthen over time as they gain experience in business management, law, marketing and negotiation (Mayers and Vermulen 2002).

Key lessons from BS under SFM

The following key lessons can be identified:

- Concessions are potentially large sources of income. A significant part of this should benefit the populations of the country generally, and compensate local populations neighboring concession areas, specifically. Both are needed to build legitimacy.
- BS under SFM illustrates challenges both for vertical and horizontal BS. Mechanisms for BS between forest companies, central and local governments and local communities vary with country and context. A share of revenues for local populations is typically earmarked.
- More open and competitive concession procedures have increased available revenue for sharing, improved governance and transparency.
- Local populations may suffer if careful consideration is not taken when designing BS mechanisms and concession regulations. Local communities may benefit from tax revenue distribution and through direct benefits (mostly in-kind) from forest companies through voluntary initiatives or as required by concession agreements.
- Though shares of revenues set aside for local communities may be significant, many of the BS systems in place fail to deliver much benefits on the ground. There are classical problems of elite capture by mayors or community leaders.

- Lack of transparency and information about concession revenues make many communities unaware of their rights and the amounts that should accrue to them. Publishing such information locally is a good way to inform people, and improve transparency and accountability.
- Lack of sensitization and training locally make it difficult for communities to plan and spend money wisely.
- Increasing the coverage of certification schemes and other voluntary company led initiatives can contribute to more fair and equitable BS. Many such initiatives are currently ongoing with positive results for poor, local populations. However, certification schemes are quite costly to carry out and maintain.
- Poor and marginalized groups may not be able to afford in-kind benefits such as schools, due to lack of money or transport. Target groups need to be considered.
- High local benefits may lead to migration to the area and pressure on existing services and resources. Allocation of funds should be based partly on residency over a period.
- Tax redistribution locally may displace other sources of government transfers and not be strictly additional.
- Many company-community partnerships for commercialization of forest products, such as the outgrower scheme case from South Africa, are promising. Such partnerships may provide a range of benefits for local people, but also face many challenges (e.g. high transaction costs). Provision of start-up funding, strengthening community institutions and inclusion of all groups spur development of partnerships and equitable BS.
- Negotiated terms seem to make partnerships work better than when terms are set unilaterally.

5 CASE COUNTRY EXPERIENCES FROM THE FOREST SECTOR

5.1 INTRODUCTION

This chapter summarizes the main lessons from brief case studies of the BS mechanisms currently in use in the forest sectors of three potential REDD countries: Guatemala, Cameroon and Ghana. The full case studies are documented in three brief reports published under separate covers (see IUCN 2010a, IUCN 2010b and IUCN 2010c)

5.2 GUATEMALA

A country with many challenges in the forest sector

Guatemala has the lowest forest area per capita in Central America and a relatively high deforestation rate. It also has the largest remaining tropical forest area in Central America: The Maya Biosphere Reserve of more than 2 million hectares. This area is currently under threat despite its protective status. Deforestation is related to population growth, poverty, expansion of agriculture and illegal logging. The country is working with the World Bank and others to advance the REDD readiness process and potentially develop and implement a national REDD strategy. For any such strategy incentive payments for activities that reduce emissions from deforestation or forest degradation or increased carbon uptake in forests will be central.

Several interesting benefit sharing and incentive programs

Guatemala has several interesting programs providing incentives for reforestation, forest conservation, forest regeneration, sustainable forestry and related activities generating environmental services. Two of the programs are managed by the National Forestry Institute (INAB), one by the National Council of Protected Areas (CONAP) and one by Ministry of Agriculture, Livestock and Food (MAGA). There is also a recent debt for nature swap program with the US Government, managed by a conservation trust. Finally, forest concessions provide forestry income opportunities for communities and tax income for the government. Two programs are currently under consideration, though not yet implemented: a national climate fund and a biodiversity support program.

PINFOR and PINPEP – the largest forest-related programs

The PINFOR and PINPEP programs are managed by INAB. PINFOR is perhaps the largest incentive program in Guatemala. It has a national coverage and targets land owners with plots larger than 2 hectares. It rewards reforestation and forest regeneration, forest production and forest conservation activities with a payment schedule per hectare that vary by year and activity. Payments are limited to a maximum of 10 years depending on activities. PINPEP is a similar program, but geographically limited and targeting typically poorer beneficiaries and landholders without legal titles. In addition to stimulating similar activities as PINFOR, PINPEP also targets agro forestry activities.

PPAFD and FONACON – broader environmental services

PPAFD, managed by MAGA, is a pilot program operating from 2002 to 2009 (currently seeking funds for extending the program). It is considered a program particularly for the conservation of forests and water resources. PPAFD is complementary to PINFOR in that it provides support to smaller land holders (< than 2 hectares) who do not have legal titles. The program has a specific geographical emphasis on the highlands to secure water sources downstream. FONACON is a national conservation fund managed by CONAP.

This fund supports project activities related to biodiversity and protected areas. Activities include research, environmental education, programs supporting sustainable agriculture, soil conservation and reforestation, and sustainable use of forests for tourism, non-timber forest products etc. It is a relatively small program compared to PINFOR.

Concessions – a source of tax revenues and local income opportunities

Forestry concessions can be awarded both to industrial forest companies and (organized) communities. Taxes and levies must be paid for obtaining concessions. These are collected by INAB outside protected areas and by CONAP inside protected areas. A limited amount of these funds are shared locally with communities in and around concession areas. However, communities obtaining forestry concessions, for example in the multiple use zone of the Maya Biosphere Reserve, have a good source of income from commercial forestry and non-timber activities. Within the reserve, Forest Stewardship Certification is required, which potentially improve sustainability of forestry operations and social dimensions of the concession activities (e.g. issues of benefit sharing).

Lessons from programs to date are encouraging…

Although we have not been able to conduct a careful assessment of the programs, our observations and interviews with stakeholders indicate that many of the programs have had encouraging effects. Several of the above programs have managed to work constructively with communities not just to encourage and pay for specific management activities but also to educate and build capacity. There is a strong demand from potential beneficiaries, especially for PINFOR and PINPEP, and programs are widely known among different stakeholders. The programs seem to have had substantial impact on the ground; though we are aware of no careful assessment of how much of this can be attributed to the incentive programs. There may also be differences between the programs. In any case, many of the program components show great promise, related to for example identifying the right stakeholders and priority areas for the programs, setting the level, form and timing of monetary incentives and ensuring a trusted delivery mechanism, transparency and accountability as well as constructive ways of handling disputes. In addition, some of the programs seem to have strong capacity building and education components supporting the monetary incentives.

..but there are also challenges

Several challenges have also been identified. Some of the programs are vulnerable to being politicized, in that they are not anchored properly in law. Risks of budgetary cuts and political interference with objectives or geographical coverage of programs may reduce the trust and the efficiency of the incentive programs. Uncertainty over payments, for example, is damaging for programs built on mutual trust. The lack of funding in PINPEP and PINFOR for initial investments (e.g. to buy seedlings) is seen as a challenge. Furthermore, the level of incentive payments (and the relative prices for different activities within the same programs) may need to be revisited and revised. It is also a potential problem for sustainability of activities that there seems to be no careful consideration of what will happen to deforestation and natural resource management when incentive payments cease. Two final challenges identified are the seeming lack of coordination between the different programs and perhaps too much emphasis on productive forestry activities over conservation in programs such as PINFOR and PINPEP.

Implementing REDD in Guatemala – final thoughts

It is clear that Guatemala has a rich experience with incentive programs to encourage change in behavior affecting forests. Implementation of REDD on the national level of any country is likely to require similar incentive programs to those already in operation in Guatemala. When moving towards REDD strategy development and implementation, it

seems many of the existing programs can be adapted and strengthened for the use in a REDD incentive program. However, to achieve this, the different programs should form much better coordinated sub-programs under an overarching REDD incentives program. The incentives also need to be much more geared towards reducing deforestation and degradation, rather than production forestry and tree planting that many of the current programs emphasize. In any case, much more can be learnt from studying the existing programs, when drawing up a program for REDD. This study is only a small, first step.

5.3 CAMEROON

Cameroon has large forest resources, but the REDD Readiness process is still in the early stages

About 40 percent (19.6 million hectares) of the Cameroonian territory is covered by rainforest characterized by a rich fauna and flora providing food, medicines, fuel wood and construction materials for about 8 million rural Cameroonians out of a population of 16.5 million inhabitants. Forestry is a key sector for the Cameroonian economy, providing about 13 000 formal and 150 000 informal jobs – making it the largest employer outside the public sector. Timber is also the second largest source of export revenues (after petroleum). Even though Cameroon is considered to be in the front of forest law development and practice in Africa, the REDD Readiness process is still at an early stage. However, the interest for REDD seems to be increasing as the number of actors getting involved and the number of projects related to sustainable forest management and REDD is on the rise.

The Forestry Law provides the basis for management of forest resources

The Forestry Law from 1994 aiming at promoting more sustainable forest management is the most important tool in the management of Cameroonian forest resources. A key provision of this law was the introduction of a bidding process where timber companies have to compete for timber harvesting rights. Both technical and financial criteria are evaluated in the bidding process, including a bid for a fixed Annual Forest Tax (RFA) based on the size of concession area and a proposed management plan describing technical, social and environmental obligations. Another key provision in the 1994 Forestry Law was the development of a zoning plan dividing the national forest domain into two main categories: the Permanent Forest Domain and the non-Permanent Forest Domain. In contrast to the first category, forest areas in the latter category may be used for other purposes like agricultural and mining activities.

Main benefit sharing mechanism is related to the annual forest tax

The BS mechanism related to the RFA is the only one with an explicit aim to contribute to local economic development. The finance law of 1998 mandated that 50% of collected RFA should go to the state, 40% to local councils and 10% to local communities. The 10% should be divided equally between the villages bordering a concession area. A local management committee is responsible for spending the money on local development projects. The 40% goes directly into the local council's budget, and RFA support often constitute as much as 80-95% of the general council budget. The introduction of the competitive bidding process led to an increase in RFA for long term harvesting rights. .

Other benefits locally from hunting and community forestry

By law village communities have access to financial benefits from wildlife resource exploitation. Community hunting zones give local village communities the right to carry out traditional hunting activities, and the right to a proportion of wildlife taxes collected. In community hunting zones allocated to professional hunting, the wildlife tax is distributed in the same manner as the RFA (50% to the state, 40% to the municipality and 10% to the

local communities). Hunting zones allocated to village communities are usually leased to professional hunting guides. The local communities get the full lease income and the 10% from the wildlife tax in these cases. Community forests cannot benefit from the RFA because industrial scale logging is not permitted in these forests. However, logging on a smaller scale and for shorter periods is allowed and in 2006 a tax of USD 1.50 per cubic meter of logged timber was introduced to compensate local communities. A village development committee is responsible for determining the amount to be paid, collecting the money, and monitoring the implementation of local development projects financed by the tax.

Limited benefits and sharing around protected areas

Protected areas can in general be sources of revenue for local communities. However, the amount of revenue generated from Cameroonian protected areas (beyond that collected from hunting zones) is fairly low, and most of it goes back into the management of the parks. To our knowledge there does not exist any formal BS agreements with communities located close to protected areas.

Local compensation for impacts of infrastructure development

Another compensation mechanism that is worth mentioning - even though it is not an example from the forestry sector - is a mechanism established in 2000 to compensate local communities negatively affected by the construction of a oil pipeline between Chad and Cameroon. With assistance from the World Bank, the oil company set up compensation plans including compensation to individuals and families, communities, regional groups and to vulnerable populations. Local representatives including both village chiefs, elders, women and some youth were included in the compensation plans development process.

Some encouraging local effects of forest sector reform

Recent reform of the legal framework related to forest governance has managed to strengthen the role of local communities and promote local development through recognition of customary rights to forest resources and revenue from forest activities. Revenues received for example from the RFA and the wildlife tax for local development projects has also contributed to pushing the development and welfare agenda up to a collective village level compared to the more traditional household level. Increased public focus on forest management and the requirement of management plans for concession areas have contributed to a marked decline in illegal logging and a reduction in unsustainable exploitation of forest resources. An increase in third party certification for production forests has also contributed to this positive trend.

Still problems of implementing the benefit sharing system

Although Cameroon is ahead of most African countries when it comes to forest management, there is still room for improvements. Even if the legal framework and BS mechanisms look good on paper there are challenges related to implementation and enforcement. One deficiency is the government's failure to collect fines from companies not living up to social and environmental obligations in management plans. Numerous examples also exist of revenues from community forests and community hunting zones not being spent on local development projects benefitting the whole community. Further, elite capture and embezzlement in the local management committees of the RFA seem to be a common problem leading to local tensions. A potential explanation for many of the problems experienced may be the lack of functioning control systems and monitoring instruments. In addition, there is a need for sensitization and training locally in order to educate representatives of local communities on how to plan and spend funds allocated to the community.

Community forestry is too burdensome to set up and manage

Establishment of community forests is encouraged by the legal system, but the legal procedures, required inventory mapping and social surveys needed to do so is often described as complicated and costly. In addition, the legal definition of a community is very vague leading to challenges related to who to include in the entity. The progress in integrating indigenous people in the process of forest management, decision making, and benefit sharing does not always succeed.

Implementing REDD in Cameroon – final thoughts

Cameroon's experiences with BS mechanisms in the forestry sector can be useful when considering how a potential national REDD incentive scheme and BS mechanism may be designed. The discussion of whether or not RFA revenues should be shared with areas outside the concession is likely to come up also regarding REDD revenues, and it is important to ensure a REDD BS system that is considered fair by the majority of the population in order to ensure legitimacy of the system. At the same time the system need to generate effective incentives to carry out REDD activities. In order to ensure that locally distributed REDD funds are spent appropriately, there is a need to strengthen accountability and transparency mechanisms. Despite challenges with the implementation of existing BS mechanisms in Cameroon, BS systems for REDD should not bypass the existing government systems entirely as REDD may serve as a catalyst to deal with existing governance weaknesses and improve current BS mechanisms. And finally, if a national REDD strategy aims to stimulate REDD activities through community forestry, there is a need to deal with the existing challenges especially related to ownership to land and the complicated process setting up and managing community forests.

5.4 GHANA

Ghana – a tropical forest country with a high deforestation rate

Ghana is situated in Western Africa. There are two main vegetation zones: The High Forest Zone (HFZ) in the south-west, and the savannah in the northern and eastern regions. The HFZ is further divided into the on-reserves[55] (including timber production and areas for permanent protection) and the off-reserves[56] (consisting of natural and secondary forest as well as various forms of agriculture). Ghana has a forest cover of about 5.5 million hectares (as of 2005), threatened by the high deforestation rate of 1.9% per year. There is no single source of deforestation and degradation but rather a combination of factors. A key element is the extent of illegal logging. For instance, in 2005 the actual timber harvest is conservatively estimated at 3.3 million m^3 – more than three times the allowed annual cut.

Forest reforms in Ghana making some progress

The government has made efforts in reforming the legal framework to ensure sustainable development in the forest sector. The most important one is the reform of the Forest and Wildlife Policy in 1994, which aimed at the conservation of forest and wildlife resources and ensuring benefits to all segments of society. Other issues related to establishing a competitive bidding process for the award of timber rights and the promotion of commercial plantations have also been addressed. REDD is a relatively new concept in Ghana. The government has submitted and got approved the R-PIN to the Forest Carbon

[55] Defined as forest land within reserves and under protection (FAO 2005)

[56] Defined as any land area apart from permanent forest reserve in the High Forest Zone or forest lands within the High Forest Zone outside reserves mainly made up of mosaic of agriculture fields, fallow lands, secondary forest patches etc. (FAO 2005)

Partnership Facility (FCPF) in 2008. The process of developing an R-PP has started but is still in the very early stages.

Several interesting BS mechanisms for fees collected from timber companies

The timber operator has to pay a Stumpage Fee on each felled tree, and the revenues have to be shared according to a fixed formula. First, the Forestry Commission deducts from the total sum a management fee of 60% in the on-reserves and 40% in the off-reserves. Then the Administrator of Stool Lands deducts a further 10%. Finally, the remaining is shared between the District Assembly (55%), the Stools (25%) and the Traditional Council (20%). Furthermore, the timber operator has to pay an annual fixed fee per hectare of forest for the entire concession area – called the Concession Rent. The revenues have to be shared in the same manner as the Stumpage Fee, except that the Forestry Commission does not deduct any management fee. In combination with the introduction of the competitive bidding process for awarding timber concessions, the government also introduced the Timber Rights Fee (TRF). This fee has merely been a means to increase government revenues and there is no local BS mechanism in place. This system is currently being reviewed and a Forest Fiscal Reform Support Group has proposed to give a share of TRF revenues also to the industry incentive program, the government afforestation program, and the forest owners.

Timber companies also compensate local communities directly

All timber companies applying for timber contracts have to include a Social Responsibility Agreement (SRA) in their application. This SRA is an agreement between the timber operator and local communities affected by their proposed forestry operations. The SRA includes both a set of safeguards intended to secure the rights and interests of local communities, and a list of the affected communities and what the company will do for them. Investments typically include health clinics, roads, schools and community centers. In addition, timber companies have to compensate farmers if their operations damage their land or crops.

Partnerships between farmers and the government benefit several stakeholders

A Modified Taungya System (MTS) has been introduced as a means to create incentives for sustainable use of trees on crop land in the off-reserves. The idea is that local farmers and the government form partnerships to create small plantations in agricultural areas. Returns on the investments made are shared between the farmers, the Forestry Commission, the landowners and local communities.

Large variations in BS arrangements in place for protected areas

Some of the largest national parks in Ghana generate some revenue from entry fees and other charges, while most protected areas are dependent on financial and technical support from the government and/or other organizations. No general BS arrangement exists for the protected areas generating revenues. There is rather a diversity of arrangements ranging from examples of local communities getting no direct benefits except job opportunities, selling food to tourists, etc. to examples where the Traditional Council, the District Assembly and local communities receive a proportion of revenues generated.

Lessons from programs to date are encouraging…

Recent efforts of reform and new promising initiatives in the forest sector in Ghana show a political will, especially at a local and regional level, to achieve sustainable forest management. BS has become an integrated part of legal frameworks and regulations, including specifications on shares of timber harvesting and tree planting revenues for different stakeholders. These specifications contribute to creating a focus on equity,

legitimacy of the mechanisms as well as transparency. Local customary rights have to some degree been recognized, for instance local chiefs and communities have certain rights concerning the control and distribution of rents from timber resources.

…but there are also challenges

The level of forest fees are considered to be low and have not been price adjusted for many years. The same accounts for tax collection efficiency in general, which results in fewer benefits to be distributed as incentives for sustainable forest management. The government is to some degree offering too generous working conditions for the timber industry through for instance the non-enforcement of sanctions in case of late payments, and there are criticisms that the industry has obtained too much power as a constituency in the political system. Furthermore, the competitive bidding process for the award of timber rights have not yet been fully implemented, resulting in low revenues generated from the Timber Rights Fee. Finally, the implementation and monitoring of Social Responsibility Agreements and Compensation payments could become a lot stronger in order to meet the local communities' interests.

Implementing REDD in Ghana – final thoughts

The experiences related to the existing BS mechanisms in use in Ghana are useful and should be considered in the development and implementation of REDD at the national level. The government has started the process of developing an R-Plan including the definition of actions and consultation with stakeholders. This process would benefit from considering how existing and new BS mechanisms can stimulate REDD activities.

6 OTHER BENEFIT SHARING EXPERIENCES

6.1 INTRODUCTION

The previous two chapters provided experiences of BS related specifically to the forest sector. This chapter extends this review into other areas providing important additional lessons for BS under REDD.

Three areas of particular relevance, in our view, are the experience with BS under the UN Convention on Biological Diversity (CBD) related to commercialization of products (e.g. pharmaceutical products), extractive resources (oil, gas, mines etc) and the use of various social and environmental safeguards for infrastructure development. In this chapter we review these experiences following the same structure as for Chapter 4 (brief background and introduction, description and assessment of how BS mechanisms have worked).

As in Chapter 4, main lessons are summarized at the end of each sub-chapter.

6.2 ACCESS AND BENEFIT SHARING UNDER THE BIODIVERSITY CONVENTION

Benefit sharing under CBD

The Convention on Biological Diversity (CBD) under the United Nations entered into force in December 1993, and today has 192 parties. The CBD establishes an international regime that balances the right of resource-providing countries to share benefits, with the right of technology-rich countries to access biodiversity resources in biodiversity rich countries. The CBD has three main objectives:

1. To conserve biological diversity;
2. To use biological diversity in a sustainable way; and
3. To share the benefits of biological diversity fairly and equitably.

The third objective has been further developed into “Access to genetic resources and benefit sharing” – also called ABS, and has been formalized through articles 1 and 15 in the CBD. Furthermore, in 2002 the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization were adopted, aiming at assisting governments in their implementation of ABS[57].

ABS focuses on genetic resources, which are used for instance by scientists and private companies in a range of sectors (for example pharmaceuticals, biotechnologies, horti-culture, seed and crop) for different purposes (for example research and commerciali-zation) (Secretariat of the Convention on Biological diversity 2008). The use of these resources result in financial and other benefits, including benefits such as research and data, technology, jobs, capacity and community improvement.

The goal of ABS is “to create a system by which countries which have conserved and provided access to their genetic resources and the ecosystem that fosters them can receive a share in the value that is derived from those resources”, while at the same time ensuring a “lingering incentive for continuing to conserve their resources and use them sustainably”. The system is built on the use of contracts between source countries and

[57] See http://www.cbd.int/ for further details.

users, and should specify how the benefits are to be shared. The Bonn Guidelines identifies several different alternative forms of payments:

- Monetary payments, for instance up-front payments, milestone payments, royalties, license fees, research funding.
- Other forms of concrete documented payments based on commercial value, for instance transfer of knowledge and technology, the right to participation in joint ventures.
- Non-monetary benefits, such as direct sharing of research and development results, education and training, access to genetic resource facilities.
- Less direct or tangible benefits, for example contributions to the local economy, institutional and professional relationships, research directed towards priority needs, food and livelihood security benefits, and social recognition.

However, there is no standard for how the benefits should be valued and what is equitable and fair sharing. This responsibility is given to the country with the jurisdiction over the use (Tvedt and Tomme 2007). In the Bonn Guidelines, concerning the mechanisms of BS, provisions for how ABS should be implemented are relatively open in order to be relevant for as many sectors and uses as possible (see Box 6.1 on Bonn Guidelines).

Box 6.1 Bonn Guidelines for access and BS under the CBD – very general, leaving almost everything to be worked out in each case

Bonn Guidelines[58] - text on benefit sharing

- Mutually agreed terms could cover the conditions, obligations, procedures, types, timing, distribution and mechanisms of benefits to be shared. These will vary depending on what is regarded as fair and equitable in light of the circumstances.

Timing of benefits

- Near-term, medium-term and long-term benefits should be considered, including up-front payments, milestone payments and royalties. The time-frame of benefit sharing should be definitely stipulated. Furthermore, the balance among near-term, medium-term and long-term benefit should be considered on a case by case basis.

Distribution of benefits

- Pursuant to mutually agreed terms established following prior informed consent, benefits should be shared fairly and equitably with all those who have been identified as having contributed to the resource management, scientific and/or commercial process. The latter may include governmental, non-governmental or academic institutions and indigenous and local communities. Benefits should be directed in such a way as to promote conservation and sustainable use of biological diversity.

Mechanisms for benefit sharing

- Mechanisms for benefit sharing may vary depending upon the type of benefits, the specific conditions in the country and the stakeholders involved. The benefit sharing mechanism should be flexible as it should be determined by the partners involved in benefit sharing and will vary on a case by case basis.
- Mechanisms for sharing benefits should include full cooperation in scientific research and technology development, as well as those that derive from commercial products including trust funds, joint ventures and licenses with preferential terms.

BS becomes complex because of the variations in the financial profile and R&D processes of the industries involved in the use of genetic resources. This factor has an impact on the scale and nature of benefits that can be shared (Secretariat of the Convention on Biological diversity 2008). For instance, it may take 10-15 years to develop a new drug in the pharmaceutical industry, while in the biotechnology industry the development cycle for a new product may be only 1-2 years. Also, the commercialization cycles differ among the industries, as does the potential size of the revenue streams from the finished product.

It is therefore perhaps not surprising that few generalizations can be made concerning the implementation of ABS, and that the interpretation of the provisions in the CBD remain rather open. A single model of access provisions and BS in ABS does not exists (Suneetha and Pisupati 2009). It is however a concern that because there is no standard, the most significant and perhaps most valuable benefits for developing countries in the short and medium term such as capacity training and technology transfer are seen as less important in relation to future royalties (Secretariat of the Convention on Biological diversity 2008). There are many partnerships that are established over the access to a specific genetic resource that never result in a final product that is introduced on the market, and then consequently do not bring any financial benefits in the form of royalties. Given this risk, emphasis on capacity building, training, knowledge transfer, supply of

[58] See the full text of the Bonn Guidelines as http://www.cbd.int/decision/cop/?id=7198

equipment could be seen as more valuable and more concrete compared to future earnings. This is particularly relevant in bioprospecting partnerships.

Current experiences with ABS

There are several critical factors to the successful implementation of ABS (see for instance Richerzhagen and Holm-Mueller 2005). First of all, the property rights to land and resources and intellectual property have to be correctly assigned and agreed upon. Second, the level of knowledge among the indigenous people as to how much they can demand in the negotiation process (bargaining power) with the enterprise in question has a large influence on which benefits will be shared and how. Third, the agreements have to be effectively enforced and monitored. And finally, the access to benefits in a social community may have social impacts that need to be taken into account.

These factors can be illustrated by the case of the Kani people (Chaturvedi 2007). The Kani tribe in India entered into a partnership with the research institute TBGRI, which aimed at the development of a herbal drug. The product was successfully developed and entered the market in 1994. In 1996 they agreed upon sharing the benefits from the product equally between the research institute and the Kani people. The royalty to be paid was set at 2 percent for 10 years. The institute also paid a lump sum fee to the Kani tribe of USD 25 000. The TBGRI was reluctant to transfer the money directly to the tribe due to serious levels of alcohol abuse in the community, so they established a trust fund for social development projects in 1997.

The criticisms put forward in this case relate to the low level of financial compensation compared to the value of the end product that was developed. The drug was sold at a value 11 times the amount the Kani tribe was getting from the local pharmacy. This may be explained by a low level of awareness as to the value of their traditional knowledge. It has also been questioned whether the required procedures for obtaining prior informed consent was adhered to in a proper manner; the process was not transparent. Furthermore, the management of the trust fund was not representative, so there was no equitable sharing of the financial returns in the local community. They constructed a meeting place along with a room for a local school, and they bought a car. If there had been some prior effort for capacity building and awareness creation the benefits from this partnership may have been valued and distributed in a better manner.

There are several studies, which examine the experience made with ABS since the CBD entered into force in 1993 (see for instance Siebenhuner et al. 2005). A good overview of the national and regional implementation of ABS can be found in CISDL (2005). The study reviews measures taken on ABS in 35 countries all over the world, and analyses relevant laws and policies and their provisions on scope, prior informed consent, mutually agreed terms on BS, compliance and monitoring and enforcement as well as an overview of access agreements that have been granted (see Box 5.2 with example from Costa Rica). Other studies are more specific, such as Siebenhuner and Suplie (2004) which focus on the institutional learning in the implementation of ABS, and Smagadi (2005) which analyses national measures on access to genetic resources and BS in the Philippines.

Box 6.2 National implementation of ABS in Costa Rica

The Biodiversity Law (BL) of May 27 1998 applies to the components of biodiversity that are under the sovereignty of the State, as well as to the processes and activities carried out under its jurisdiction or control, independently from those effects manifested inside or outside national jurisdiction. This Law specifically regulates the use and management of the components of biodiversity as well as the associated knowledge, BS and derived costs from this utilization.

The access regulations apply to genetic resources in public or private lands, terrestrial or marine environments, and in indigenous territories. In addition, the rules of indigenous people should be taken into account for access in their territories as should their community intellectual rights. Similarly it is recognized that communities and indigenous peoples have the right to oppose access to their resources and associated knowledge for cultural, spiritual, economic or other reasons. There is also a system of fines for illegal access and there is a section on the framework for sanctions. Concerning BS, the BL stipulates that up to 10 percent of the royalties must go to the conservation area, private owner, or indigenous territory, in addition to the payment of administrative expenses.

Most of the bioprospecting in the country has been conducted by the National Biodiversity Institute (INBio). Research is carried out in collaboration with investigation centers, universities and national and international private companies by means of investigation agreements that include key elements, such as a time limit and quantity for access to genetic resources, and the provision of non-destructive activities. Furthermore, there are specifications on the research budget, technology transfer and training activities. The agreements also specify that 10 percent of the research budgets and 50 percent of the future royalties are donated to the Ministry of Environment and Energy in Costa Rica to be reinvested in conservation.

INBio has signed more than 30 bioprospecting agreements, all of them prior to the enactment of the Biodiversity Law. Approximately ten permits have been granted under the Biodiversity Law and its regulations, including two commercial (bioprospecting) access permits granted to INBio and five non-commercial scientific research permits.

Source: CISDL (2005)

Although there are few evaluations of the effectiveness of ABS, there are a few trends that can be discerned (CISDL 2005). It is clear that the specifics of laws and policies vary from country to country. However, there are some similarities too, for instance regarding the establishment of an ABS permitting system, the requirement and procedure for obtaining prior informed consent and the negotiation of mutually agreed terms including BS mechanisms. Furthermore, the scope of ABS systems is continuously evolving, and there is a need to define and clarify what the concepts such as genetic resources and BS really mean.

There is also a trend that governments are increasingly linking BS to conservation and sustainable use of the resources. And finally, there seems to be an increasing awareness about ABS and the opportunities partnerships can bring for development. This is underscored by the rising number of activities in most countries. It should also be mentioned that there is a substantial scope and need for capacity building as the system of ABS is evolving. For instance, it has been suggested that in order to maximize the potential for benefits from ABS resource-rich countries should move beyond a gate-keeper approach toward a more comprehensive strategy focusing on benefit creation (Artuso 2002). The development of such strategies would also require capacity building. Several initiatives under way by multilateral and national organizations aim at filling this gap[59].

[59] See for instance http://www.cbd.int/abs/projects.shtml

Some key lessons from BS under the CBD

A recent study concludes that in order to implement BS under the CBD in an effective manner, the following issues must be addressed by the implementing countries (Suneetha and Pisupati 2009):

- Implement provisions under the Bonn Guidelines on ABS, even though it is voluntary and the rules are subject to change.
- Development of ABS guidelines and regulations requires multidisciplinary teams, including the involvement of legal, social, policy, conservation and financing experts.
- ABS is an issue that also relates to markets and economics, through the provision of access on clear and defined terms and the inclusion of equity considerations.
- Complexity should not be an excuse for inaction, since actions (however imperfect) are needed to build experience and progress.

From our review we also note the following:

- The Bonn Guidelines for ABS under the CBD are so general that almost no BS mechanism would violate the guidelines:
  - Implementation of ABS leaves significant flexibility nationally.
  - There is no standard for how the benefits should be valued and what is equitable and fair sharing. This responsibility is given to the country with the jurisdiction over the use.
  - Few generalizations can be made concerning the implementation of ABS. The interpretation of the provisions in the CBD remain rather open
- BS becomes complex because of the variations in the financial profile and R&D processes. Similarities with different REDD activities which will also have different time schedules of benefits and payments (e.g. tree planting takes much longer than instant reduction in deforestation).
- It is clear that the specifics of laws and policies vary from country to country. Similarities include the establishment of an ABS permitting system, the requirement and procedure for obtaining prior informed consent and the negotiation of mutually agreed terms including BS mechanisms.
- There is a trend that governments are increasingly linking BS to conservation and sustainable use of the resources.
- In order to maximize the potential for benefits from ABS resource-rich countries, developing countries should move beyond a gate-keeper approach toward a more comprehensive strategy focusing on benefit. Capacity building is required to achieve this transformation.

6.3 EXTRACTIVE RESOURCES

Sharing of benefits from extractive resources: issues and challenges

There is ample evidence that, on average, countries with substantial resources for extractive industries do not achieve higher standards of living than countries with fewer resources. On average, resource rich countries are also less democratic and more corrupt than other countries.

The extraction of resources often has negative side effects in the local community where such activities are undertaken. To gain support for the resource extraction, local communities will often have to be compensated for the side effects. This is about using BS to create legitimacy for a resource use activity, as discussed in Chapter 3. Additionally, the splitting of the benefits from exploitation between private owners, the national government and local communities will often be a contentious issue. The population in the area where the resources are located will often see the resources as belonging, at least in part, to the community and not to the rest of the population in the country.

Both to improve the management of the resource revenues, to avoid negative effects on governance (e.g. corruption), and to ensure support from the local communities for the extraction of resources, different types of special financial arrangements and organizational structures have been established. These systems are also put in place to ensure appropriate incentives for efficient (low cost) resource extraction, as mentioned in Chapter 3. In the following, we will present some of these arrangements and some of the lessons learned.

Some of the challenges related to the management of extractive industries like (mining and petroleum extraction) are somewhat different from those typically faced in the forestry sector. When resources are not renewable, the revenue from the extraction and sale of the resource will typically be concentrated within a rather limited time period. This causes special challenges related to macroeconomic management[60] that are not directly relevant to REDD, which will generate an ongoing (although not constant) flow of funds. However, as discussed in Chapter 2, REDD payments from the international community will stop at some point in the future, making REDD similar to an exhaustible resource from a tropical forest country perspective. That said, it is unlikely that REDD payments will be as large as experienced from some extractive industries.

Conversely, there is one important factor in the management of forest resources that are less relevant to extractive industries: forests are often used by locals for logging, the collection of firewood and NTFPs, hunting, etc. Except for some minerals suited for small scale production with limited and basic equipment, mining and petroleum production typically require large scale investments and technological competence normally not available in local communities. The fact that forest resources are used by local communities is relevant for what is considered “fair” compensation for restricting the local communities’ exploitation of these resources.

We are not aware of any systematic or complete mapping of revenue sharing and management systems related to extractive industries. There are however many sources of information on individual and selected examples. One can distinguish between three types BS mechanisms including the local level:

[60] An important challenge relates to the temptation of spending revenues in step with their generation, rather than phasing such revenues into the economy cautiously over time (preferably with a build-up of a fund to generate revenue streams when the resources are exhausted).

- ***National and federal taxation – broadest possible sharing:*** In federal states (including the USA, Canada and Australia), the general income tax from mining and oil companies are federal, while mining royalties are state taxes (and the tax rate and tax base vary between individual states). In other countries, the local level does not collect taxes from the mining or petroleum exploitation. These tax revenues are then typically shared with the broad populations in the respective constituencies through ordinary government budgetary processes.
- ***Tax revenues earmarked for local communities:*** In some countries, a share of the taxes paid by extractive industries are earmarked for the local communities (one examples is Chad)
- ***"In kind" contributions locally:*** In other countries, the local communities receive benefits "in kind" directly from the companies through obligations embodied in production agreements or as CSR activities (one example is Zambia)

The latter two mechanisms aim to create local support and legitimacy for the resource extraction through compensating local communities, while also aligning local incentives with those of the extraction company, as discussed in Chapter 3. The former BS mechanism is about generating tax revenues for the government, which can be distributed widely not favoring certain communities near the resource over others, on the basis that the resource is national or federal.

In the following, we will briefly present some examples of BS in developing countries, before closing with a short section on lessons learned.

Papua New Guinea (PNG) – BS can work in difficult surroundings

PNG[61] has substantial minerals and petroleum resources. Some of the extraction takes place in areas populated by indigenous people where formal government structure functions alongside traditional tribal or clan-based systems. Formal private land tenure is not common, but local people are still known as "landowners".

In the 1970s and 1980s, there were many conflicts between the companies in extractive industries and the local populations. Probably, the lack of benefits from the mining sector for the communities was an important reason for the conflicts. The situation triggered a closure of one major mining operation.

The government has established a system of "development forums" in relation to mining and petroleum projects. Both the forums and the principle of BS with the local community have been codified. The forums are not just meeting places, but institutions obligating the participating parties. The central government, the local government, the extractive industry companies, and local stakeholders ("landowners") participate. The parties agree to consult throughout the duration of the project. In the agreements negotiated at the forums, the parties agree on the benefits to be distributed to the "landowners". Normally, the benefits are in the form of services, such as contributions to local infrastructure. Often banking and the use of cash is not common in the communities. Direct cash transfers may create social problems or intensify existing ones (e.g. alcoholism).

The agreements are public. This system seems to have triggered a rise in the share of the revenue that is channeled to the communities.

Although the development forums seem to have put a lid on the violent conflicts that used to plague some extractive industry projects in PNG, and have been successful in increasing the production in these industries, there are some problems:

[61] Text based mainly on Fischer (2007)

1. It appears that the benefits do not always trickle down to all stakeholders in the local communities. In some cases, clan leaders keep benefits to themselves. This is the problem of "elite capture", common also in the forest sector.
2. It might be that the benefits channeled through the system do not always represent additional resources to the local community, but rather replaces ordinary (and often much needed) government funding to these communities.

According to Fischer (2007), in some of the BS schemes, money paid to individuals has been distributed in public, e.g. through a simple, public ceremony in the village. This has increased the trickling down effect.

Although the system seems to have deficiencies, one must bear in mind that PNG suffers from very serious weaknesses in governance. Seen in this context, the system might be considered relatively well-functioning.

Colombia – assessing capacity of local systems is essential

In Colombia[62], the distribution of revenues from extraction of petroleum and minerals has been legislated. Both local governments and local communities are entitled to some of the revenue from extraction. The law makes special provisions for revenues for indigenous communities. It is further legislated how sub national government levels are to spend the revenues received. Most of the revenues are to be spent on investments related to government services in the local communities. An overview of BS in some Latin American countries is given in Table 6.1. The percentages can be seen to vary widely between countries and beneficiaries within the countries.

Table 6.1 Distribution of oil rents in Latin American countries FY 2000. In %

	Bolivia	Colombia	Ecuador	Peru
Central government	55.4	29.9	95.3	49.1
Local government	25.3	43.7	2.7	42.5
Managing entity	0.6	0.0	0.0	4.7
Investment or stabilization fund	0.0	24.8	2.0	0.0
Pension fund	17.9	0.0	0.0	0.0
Universities	0.3	0.0	0.0	3.0
Social support	0.0	1.4	0.0	0.0
Other	0.5	0.2	0.0	0.7
Of local government distributions, share to producing areas	88.0	89.9	–	91.7

Source: ESMAP (2002), as cited by Fischer (2007)

If resource exploitation takes place less than 5 kilometers from an indigenous settlement, 5 percent of the department's (means regional authority) resource revenue and 20 percent of the municipality's investments based on resource revenue is to be earmarked for the settlement.

According to Fischer (2007), the local government level in Colombia is not functioning satisfactorily. This also applies to the management of revenues from extractive industries. In some cases, the communities see no benefits from the extraction, and some companies

[62] Text based mainly on Fischer (2007).

have started their own programs to offer some benefits directly to the communities to bypass government institutions.

The Niger Delta Development Commission (NDDC) – an example of system failure?

Some of the oil producing areas in Nigeria[63] have been marred by armed conflict. Many local NGOs and community representatives have complained that the oil production pollutes the area, destroying the livelihoods of local people in the process. The same communities did not receive any proceeds from the oil production. In 2000, the NDDC was established. This government body receives funds from the oil companies and the central government. The funds received are related to the oil revenues generated. Funding for the NDDC comes from both private and public sources. Oil companies operating in the Niger Delta contribute 3 percent of their annual budgets to the commission; while the federal government allocates 15 percent of the Delta states' oil revenues (13 percent derivation) and 50 percent of their ecological fund allocations. Between 2001 and 2004, total funding amounted to an annual average of $64 million from the federal government, just over three quarters of what had originally been budgeted, as well as $130 million a year from the oil companies.[64] The NDDC is governed by board dominated by representatives for the oil producing states. Also the oil companies and the central government are represented at the board. According to the Human Development report for the Niger Delta, the local people have very little confidence in the NDDC. One problem appears to be the fact that the leadership of the institution is dominated by appointees of the central government.

According to World Bank (2008), NDDC seems to work better than predecessor organizations. Still, the operations of the board have been strongly criticized. There have been allegations of corruption and other types of mismanagement. Lack of transparency has been pointed out by the UNDP, the World Bank (2008) and several press articles as major problem.

Voluntary BS

In World Bank (2009) some examples of voluntary BS by mining companies are mentioned. There are examples in the Democratic Republic of Congo (DRC) (case 26 in World Bank (2009), Ghana (cases 1 and 24). Fischer (2007) also mentions that because the local government channel for BS in Colombia is dysfunctional, companies have created voluntary schemes, as noted above. Many of these initiatives are in effect CSR actions by companies, i.e. they extend beyond what they are required to do by law.

World Bank (2009) does include descriptions of the cases, but does not report whether the schemes are functioning well.

Key lessons from BS related to extractive resources

The PNG example seems to indicate that it is possible to use BS as an instrument for enticing cooperation even in societies with a history of conflict and with poorly functioning government institutions. Both the PNG example as well as those from Colombia and Nigeria indicate that it might be necessary to create new institutions outside the government sector to succeed with BS. The PNG and the Nigeria cases also highlight the importance of transparency to build confidence in the BS mechanism.

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[63] The text is based on Bennett (2002) and the websites of the NDDC (http://www.nddc.gov.ng/) and the Nigerian newspaper the Vanguard (http://www.vanguardngr.com/)

[64] Quote from World Bank (2008).

6.4 SAFEGUARDS FOR INFRASTRUCTURE PROJECTS

Many construction projects such as roads, pipelines, hydro power dams etc. have potential social and environmental impacts. In order to limit and mitigate such impacts, safeguards specifying procedures related to environmental and social assessment, resettlement, impacts on indigenous people etc. have been developed. Such regulations are generally in place in individual countries, but also apply to international development and finance organizations, such as the World Bank, Asian Development Bank, International Finance Corporation etc. Many of these regulations, and guidelines for how to apply the safeguards in practice, are quite comprehensive and advanced, especially for the international development institutions. See for example the safeguards website of the World Bank[65].

Safeguards sometimes include provisions for local compensation and BS

The point of mentioning these safeguards here is that they in some cases include specific provisions for providing compensation to local people (for e.g. environmental impacts or due to resettlement), for sharing benefits and for involving people in decision-making and consultation processes. Sharing revenues is typically only done in the case of infrastructure that generates specific revenues, e.g. hydro power dams or gas/oil pipelines.

United Nations Environment Program Dams and Development project, for example, has developed a compilation of relevant experiences with BS for hydro power dams (see Egre 2007). Provisions for compensating people (in kind or in cash) from resettlement or from environmental impacts are specified in the World Bank safeguard policies.

Although these safeguards have been developed for a different purpose than to distribute revenues or benefits per se, they may still hold relevant lessons for appropriate procedures and outcomes related to BS for REDD.

A high profile oil pipeline case – local and national issues

An interesting case, sometimes mentioned as an illustration of “best practice”, is the compensation and BS mechanism put in place for a pipeline construction project between Chad and Cameroon (see Box 6.3 below). World Bank was instrumental in designing the system. Though significant compensations were paid locally, there were problems related to channeling funds into relatively poor communities. Additionally, the sharing or use of the revenues from the pipeline within productive and welfare enhancing sectors on the national level, was not as agreed. Hence, judging the case ex post, given what we now know, the problems encountered may require a qualification of the conclusion of a “best practice” case.

[65] http://go.worldbank.org/WTA1ODE7T0

Box 6.3 Compensation mechanism Chad-Cameroon oil pipeline – BS scheme with a "best practice" design facing challenges

A particular compensation mechanism was established in 2000 for the installation of the pipeline between Doba in Chad and Kribi in Cameroon operated by the Cameroon Oil Transportation Company (COTCO). In response to the damages caused due to the construction of this pipeline, the COTCO assisted by the government and the World Bank, set up a general compensation plan and a specific Plan for Vulnerable Indigenous People (Oyono et al. 2006). The plans introduced four main types of compensation.

1. Individual compensation was to be given to individuals or nuclear families directly affected based on "personal" negotiations with the COTCO.
2. Community compensation was to be given to established community management committees in affected villages, groups of villages and sub-divisions.
3. Regional compensation was to be offered to groups of sub-divisions; and
4. Compensation was to be given to vulnerable populations.

Local communities were represented by village chiefs, elders, some women and some youth. These mechanisms were based on, among others, World Bank directives and agreements between the COTCO and the government.

Benefit sharing for the Chad-Cameroon pipeline

Several studies are critical to the effect of the compensations that were paid to individuals and communities. Although a total of about USD 6 million were distributed as individual compensation to about 4 000 farmers living in the affected areas, these resources have not led to the expected improvements in local infrastructure and community development.

The socioeconomic effects of the compensation scheme can be illustrated by the case of Nkongmeyos/Obokoue. It was seriously affected by the construction of the pipeline, and received the following in compensation: Individual compensations/household compensations accounted for a total of USD 214 000, and the disbursements ranged from USD 95 to USD 61 570. Some of this was paid in cash, and some in kind (for example roofing sheets, cooking equipment etc.). In addition the community received USD 52 500 in community compensation. The individual compensation was used, among others, to improve living standards, for instance restoration or construction of houses. The community compensation was used for, among others, the construction of wells, agricultural equipment and repair of classrooms in the local school. However, the relatively large sums of money introduced to the community also led to social tensions between and within families. This included the adoption of more "individuallistic" values, disputes over land boundaries, marginalization of certain groups, increased prostitution and alcoholism.

Ineffectiveness of conditionality

When the World Bank agreed to participate in the financing of the pipeline, it made the loan conditional on the government promising that most of the revenue from the oil export would be spent on education, health, etc. and not in the defense sector. A special account was established for channeling the revenue, special supervisory bodies were set up, and transparency was agreed as well as the use of an independent external observer. This deal was hailed as a model and received a lot of praise internationally. However, when the Chadian government had repaid the loan in 2006, the national assembly decided to breach the agreement on how to spend the revenue. Substantial budgetary allocations in favor of the army and the defense sector were made. The World Bank scaled down its cooperation with Chad, and for some time the cooperation was in effect suspended. In 2009, cooperation has been restarted.

Source: Oyono et al. (2006) and The Economist (2008)

Key lessons from BS related to safeguards

From the brief review of BS in relation to safeguard policies, we note the following:

- Many safeguard policies, for example those of the World Bank, has thorough provisions for important elements of BS. These elements include for example compensation and resettlement issues, local consultation and participation, and

resource revenue BS schemes (for dams, pipelines etc.). It is important to learn from these existing policies in the consideration of BS for REDD.

- There are challenges in implementation of both horizontal and vertical BS systems based on safeguard polices. These challenges are similar to those experienced in the forest sector as discussed in Chapters 4 and 5.
- Horizontally, monetary benefits may create inequalities, exacerbate problems (e.g. alcoholism and prostitution), cause in-migration and put additional pressure on local resources. Embezzlement of funds and elite capture is a potential problem here as well.
- Vertical sharing of revenues can run into problems with cash-strapped governments with diverging priorities from providing local benefits, for example as experienced in the Chad case. Conditionalities need to be made stronger.

7 ISSUES AND OPTIONS FOR BENEFIT SHARING UNDER REDD-PLUS

This chapter discusses issues and options to consider when designing and implementing fair and equitable BS systems under REDD. We first discuss whether there could be international standards or requirements for national BS systems. We then move to key factors that make design and implementation of BS complex, requiring trade-offs and second best approaches. Based on our review of BS experiences, we discuss five generic features of well-functioning BS systems of relevance to REDD.

7.1 BS – CONDITIONALITY OR FOR COUNTRIES TO DECIDE?

One important concern in the discussion of benefit sharing (BS) under REDD is that poor and vulnerable forest-dependent groups (such as indigenous peoples) will not get their share or even be worse off under a REDD scheme. A REDD mechanism which reinforces or exacerbates existing inequities will be neither legitimate (nationally or internationally) nor effective at reducing emissions, as discussed in Chapter 3.

Hence, one should as a minimum make sure that REDD does not harm the poor. Preferably, REDD should improve livelihoods. There is thus a need for safeguards within a REDD mechanism to ensure that the livelihoods of the poor will not be worsened. Donors and others financing REDD schemes must ask themselves: Should there be conditionalities attached to the funding coming from developed countries to tropical forest governments for REDD credits or should individual countries be left to decide how to implement REDD strategies? How should BS systems be designed and implemented? How can one make sure that direct private sector funding for project-level REDD activities do no harm to the poor?

In the development community, the word “conditionality” is primarily associated with the conditions in agreements on loans from the World Bank, the IMF and other creditors to developing countries. Also in relation to REDD, the pros and cons of conditionality are relevant.

The contagious issues in relation to lending to developing countries are:

- What kind of conditions may lenders/financiers demand without undermining the borrowing country’s right to self determination?
- Does conditionality achieve its objectives? Which type of conditionality works, and which doesn’t?

Experiences with conditionality indicates that so-called “ex ante” conditionality (the recipient country receives support if it promises to fulfill certain obligations) are rather ineffective; There are several cases were the conditions are never met, and where countries have entered into a series of agreements with the same conditionality appearing in each of them.

The experience with “ex post” conditionality is moderately more positive. This means that support is offered only after some conditions have been met. This is parallel to the performance- or results-based payments for credits envisaged in the mature phases of national REDD implementation. A problem also with ex post conditionalities for development assistance has been that donors often do not have strong incentives to enforce them. However. REDD might become different.

In effect, budget support to developing countries also includes conditionality: Donor countries normally give budget support only after the recipient country has made sufficient

improvements to their financial management systems. Monitoring is put in place, and donors reconsider their support regularly based on performance. If the whole financial management system is found inadequate, support is channeled outside government budgets directly to projects or programs – in similar ways as are considered for an international REDD mechanism. There are also cases of compromise solutions. One may for instance find that donors do channel support through the government system, but that they demand that major procurements are done according to other procedures than the government's or they demand special auditing procedures, etc.

In relation to REDD, one could consider two extreme solutions and procedures:

1. *No conditionality on BS:* That the agreement with the REDD country only includes performance criteria related to delivering emission reductions and carbon stock enhancements, verification procedures, dispute settlement procedures between the financing source and the REDD country, and the payments to the country.
2. *Conditionality on BS:* The agreement between the REDD country and the financier also includes some conditions related to appropriate BS scheme within the REDD country and possibly also channeling of the payments directly into the agreed BS mechanisms.

Alternative 1 does not include any conditionality, apart from the main obligation related to carbon, which is the central commodity exchanged. This is in effect the approach Brazil has taken in relation to foreign financers (such as Norway) supporting its Amazon Fund. No "meddling" in internal affairs is accepted.

Alternative 2 makes the tropical forest country government's management of the monetary benefits and its relation to domestic stakeholders part of the REDD transaction. There are several ways this could be envisaged. One option would be to develop some BS standards or guidelines applicable to different types of projects, for example like those for the Convention on Biological Diversity (as reviewed in Chapter 6.2). These guidelines are overly general, so similar guidelines for BS under REDD could be made somewhat more substantive. A useful basis for developing guidelines may also be found in the safeguard policies of international finance institutions such as the World Bank (see Chapter 6.4) and in the standards developed to deal with social issues for voluntary carbon market projects (Chapter 4.4).

Given the wide ranging contexts and types of REDD policies and measures, such guidelines or standards could by their nature not be very specific or detailed – but give direction to national governments and private sector on procedural steps and important issues to consider in BS under REDD. National governments could choose to specify the vertical BS arrangements, and leave decisions on horizontal BS to players involved (e.g. community organizations, company-community partnerships, ICDP projects etc). This is typically done in the case of community forestry arrangements (see review in Chapter 4.5). In any case, it is unlikely that appropriate BS could ever be a "hard conditionality" for REDD financing, e.g. inappropriate BS invoked to terminate bilateral REDD agreements. However, it is likely that proper BS is key for the international legitimacy of the REDD mechanism and as a consequence, necessary for sustaining funding for REDD.

A legitimate concern held by tropical forest countries is that traditional "aid assistance" conditionalities will overburden the REDD mechanism, tie national governments' hands, limit national sovereignty and depress and slow the stream of benefits. The international concern is with the legitimacy and effectiveness (environmental integrity) of the mechanism, if governance problems dominate and poor groups are marginalized. This issue will be an important part for discussion and clarification when forging an international REDD agreement and in national REDD strategy development. Currently, in the REDD

Readiness phases overseen for example by FCPF of the World Bank, BS systems have not yet, to our knowledge, been carefully explored. Some countries (such as Indonesia) are in the process of considering BS systems and safeguards.

Regardless of what will be the BS requirements from an international REDD mechanism, it is in everyone's interest to think about key principles or features of a well-functioning national BS system. We consider this in the next subchapters in light of our conceptual discussion in Chapter 3 and review of BS experiences in Chapters 4-6.

7.2 DRAWING BOARD TO IMPLEMENTATION: FEATURES OF WELL-FUNCTIONING BS

In the simplest possible case, BS can be easy. If one has a case of a forest owned by one individual or company and the forest is used for commercial purposes only, and the country has a strong tradition for rule of law, transparency, and of honoring its international obligations, BS is straightforward: A donor or somebody else can pay the government a compensation slightly in excess of what is necessary to compensate the forest owner's opportunity costs to modify the management of the forest so that the climate will benefit[66]. That would be both efficient and fair.

Moving into more realistic situations, our review of BS experiences has shown that BS becomes very challenging, especially if one or more of the following complications arise:

1. There are many users of the forests who will suffer losses from REDD activities.
2. The users and the scale of their losses are not easily identified.
3. The users are not organized and/or do not have representatives whom they trust.
4. Forest tenure arrangements are unclear or contested.
5. Law enforcement is poor.
6. Contracts are not easily enforced.
7. The government sector is corrupt and/or not very effective.
8. Groups and individuals who stand to loose from a change in forest management do not trust the government sector.
9. There is significant REDD rents in excess of costs for national government.

This list is not exhaustive, but includes factors we have noted as particularly important. Most of the BS cases reviewed in this report experience one or more of these complications, and have different levels of success in dealing with them. For ICDPs reviewed in Chapter 4.2, for example, there are typically many forest users of a protected area (PA) whose individual costs are hard to assess. In addition, law enforcement around the PA is typically relatively poor. Payment for forest environmental service schemes (Chapter 4.3), may suffer from difficulty in contract enforcement and other issues.

However, many of the cases reviewed find ways to deal with the issues, ensuring some degree of success. In some cases, dealing with one problem (e.g. putting in place extra transparency measures to avoid embezzlement of funds), may create another (e.g. increased bureaucracy and time in the management of funds). In such cases, there will be trade-offs between objectives. Cost-benefit considerations can be used to decide where scarce resources should be spent to make BS arrangements work as best as they can

[66] Or the donor could pay the forest owner directly, if the activity was linked with a national level accounting system for emission reductions compared to a baseline.

under imperfect circumstances. In other cases, one or a combination of the above factors may make BS schemes fail completely, either because the scheme has not been well designed or because of troubles in implementation.

Given the complexity and the variation of possible contexts and REDD actions it is almost impossible to make a "blueprint" or detailed prescription of what vertical and horizontal BS systems should look like for all conceivable types of REDD interventions. That has also not been the aim of this study.

Instead, in the next subchapters we discuss five general features or characteristics of a well-functioning BS system. These would be the features any BS scheme under REDD would aim for – given the range of complicating factors above. It is possible to think of these features as important for grand national-level BS scheme for implementation of REDD down to ground-level interventions, such as support for community forestry, payment for forest environmental services schemes etc. They are not necessarily sequential, though identifying stakeholders (next section) typically comes early. The five features and the discussion is based on our review of BS experiences and on Bennet (2002)[67], Fischer (2007), Vatn and Angelsen (2009) and World Bank (2009).

7.3 ENGAGES THE RIGHT STAKEHOLDERS

Identifies stakeholders, consults with them, and builds local capacity for them to engage

→ Basis for determining incentives, builds ownership, trust and legitimacy

Who are the relevant stakeholders?

A first crucial element in the design of BS under REDD is to identify who has to make sacrifices, for emission reductions to materialize through a REDD action. Those who have to make sacrifices are the ones who need to be induced to change behavior. As we have discussed, stakeholders may be of many sorts from local level villagers, indigenous groups, community groups and organizations, government representatives, private businesses and even international organizations and businesses along the vertical and horizontal axis. Many BS mechanisms we have reviewed (e.g. ICDPs) often fail to identify those who bear the greatest costs or has the highest potential to impact forests. Given limited REDD funds, it is important to target the most important groups first to be able to induce change.

In most cases, one cannot expect stakeholders who are not fully compensated to accept change in forest management or land use – unless the activities they are engaged in are clearly illegal. If some stakeholders are left out of the BS scheme, the scheme may give rise to conflicts between those who do not accept the change in forest management, and those who stand to loose if lack of discipline stops the BS scheme. One may see the prior conflicts related to mining operations in PNG as an example of insufficient compensation. Similar experiences are clear from ICDPs, where wide inclusion of stakeholders is crucial for building legitimacy and support for a protected area.

On the other hand, if compensation is offered to groups who have not made sacrifices or have no other legitimate claim (such as need or residency in a REDD intervention area), it could be seen as unjust and may imply suboptimal use of funds. As discussed in Chapter 3, there is a need to share benefits widely to create legitimacy around the BS mechanism and REDD more generally, but given limited resources not everybody can expect to gain.

[67] The features 6.3, 6.5, 6.6 and 6.7 are adapted from Bennet (2002).

This is the trade-off between equity and efficiency. Like with ICDP, if REDD takes on too many objectives (e.g. reducing poverty), the mechanism risks dilution of incentives and no real change in emissions, which is the primary objective.

When stakeholders are many and not organized

In some cases, the relevant stakeholders are numerous and not organized. This poses a substantial practical problem both in identifying and not least consulting with and involving stakeholders in decisions regarding the BS scheme. In practice, this problem will often have to be solved by including whole groups in BS even if not all the relevant individuals or households are actual users of the forest or have legitimate claims to benefits from the scheme. Even if the stakeholders are identifiable and are organized in some kind of group, the group may have little or no experience with negotiating and making agreements with outsiders. This poses a problem for the full implementation of a REDD scheme. The problem will have to be addressed by the building of trust and capacity to engage.

Dealing with whole groups (communities, organizations etc.) raises the issue of whether the representatives of these groups represent the interests of their constituencies and whether they are accountable. Communities, for example, are usually not homogenous units with benevolent, altruistic leaders. Our review of BS schemes in the forest sector, finds this a big challenge in many cases. Elite capture of benefits, development projects chosen based on the interests of a strong minority etc. dominate. Typically, vulnerable groups have little voice. One way to deal with this is in the way benefits are provided (next section). Another is to strengthen legitimacy of BS mechanism and transparency provisions (see 7.5 and 7.6 below).

Some guidance on stakeholder engagement available

The World Bank group and other organizations have developed best practices and guidelines for consultations with communities affected by different types of projects. Safeguard policies and guidance material (see e.g. Chapter 6.4) also go beyond consultations. These can be a useful basis for a strategy on how to identify and involve stakeholders in BS for REDD projects. In many cases, such as for community forestry and PES schemes, it may be desirable to go one step further encouraging real participation in decision-making (not just consult). As found for some ICDPs, procedural fairness and real participation was in many cases considered more important by local stakeholders than level and fairness of BS outcomes. In many cases, opening for real participation builds local ownership and support behind REDD actions.

One difficulty in defining stakeholders is related to legitimacy and legality of different players' use of the forest. Even defining what is legal and legitimate will often be difficult. If one has delimited legitimate stakeholders, one will still have to decide how to deal with illegitimate activities. This is also related to how to determine the right types and levels of incentives, which we turn to next.

7.4 DETERMINES THE RIGHT FORMS AND LEVELS OF INCENTIVES

Estimates costs of people's sacrifices, determines form, level and timing of benefits

→ Clear and direct incentives for stakeholders to engage in REDD-plus activities

As discussed in Chapter 3, a key aim of BS mechanisms is to create appropriate incentives for REDD actions. Identifying and engaging relevant stakeholders in a BS scheme is a necessary first step in determining the right type (cash, in-kind) and levels

(amount, "dose" of payments) of benefits that should be given. Aiming for a wide disbursement of benefits will have to be traded off with the desire for clear, strong and direct incentives to key stakeholders and low transaction costs.

Level of benefits and directness of incentives

Incentives need in principle to reward actions somewhat in excess of incurred costs among those required to change behavior. Making a clear link between rewards (benefits) and required actions is essential. ICDPs have typically failed on this account. Creating alternative income generation activities or providing schools in the community do not automatically lead to lower forest extraction activities. Two conditions would need to be in place to ensure the desired outcome:

(1) Those that cause the deforestation activities must see the benefits they enjoy as higher than their personal cost of halting forest activities, and

(2) It must be clear that benefit flows will stop if existing destructive forest activities continue (conditionality). PES schemes try to make exactly this link between service delivery and benefits more direct.

Form of benefit delivery

Once the extent of costs of relevant REDD activities incurred by different actors have been mapped, form and timing of benefit distribution needs to be considered. Benefits can be distributed directly in cash or to bank accounts of individuals, organizations, associations, local government etc. for further distribution or for spending on common development projects or similar. Alternatively, monetary benefits can be provided indirectly in the form of community projects, schools, social services etc. There may be good reasons to choose one type of benefit delivery over another.

REDD interventions may be implemented in poor areas, where people generally are not experienced in handling (relatively larger) amounts of money in cash or in bank accounts. People may simply not know the real value of money and hence the "strength" of the incentive (e.g. some indigenous peoples) or be unable to spend (invest) the money wisely (e.g. giving rise to social problems such as alcoholism). These may be reasons why some standard PES schemes involving direct monetary payments may not be suitable in the poorest areas of Africa or in the Amazonas (see e.g. Schubert and Slater 2006). PES is more common in medium-income countries in Latin America. In the poorest areas, it may be more suitable to provide benefits on the community level, for example in the form of social services for everybody.

Even if people are used to handling money, there may also be other good reasons to provide benefits in terms of specific services and projects in communities. One important reason may be that tenure rights are not clearly established. Another reason is the risk of rent seeking behavior, corruption and elite capture among intermediaries handling funds on behalf of the community. In this case, there will be a trade-off between providing strong individual level incentives (as discussed above) and using indirect benefit delivery potentially clouding the direct link between benefits and required behavioral change. For some ICDPs and for indirect benefits provided by forest companies under forestry concessions, our review shows that in many cases the poorest of the poor often cannot afford to take advantage of clinics, schools and infrastructure in the community. These are often the people who rely on forest resources the most. In these cases, incentives miss the target, and new types of incentives need to be designed targeting the poor more directly.

One option is also to combine money transfers with sensitization and capacity building in planning and management of funds, among local level recipients (government,

organizations and individuals). This was a clear need identified both from ICDPs and the mechanisms in place sharing revenues from sustainable forestry activities (Chapter 4.6). There are emerging ways of distributing monetary benefits directly to individuals – avoiding one-off cash or bank transfers. One option is through the use of mobile phones in rural areas. Such delivery mechanisms may regularly disburse money in small amounts (rather than one-off) and put limits on how much can be spent at a time etc. to control potential risks at immature stages of such systems. The advantage is that benefits go directly to those who need to change behavior, making the incentive signal clear and strong. However, in the poorest areas, mobile phones are not likely to be available in the near future, though penetration rates are increasing fast.

Although BS primarily should be based on stakeholders' cost and delivery of emission reductions, BS should also be based on other criteria, such as residency and need. Residency requirements for payments potentially reduce problems with migration into a REDD area while the issue of need is related to making sure that poor people do not suffer additional harm. These criteria were suggested as a way to improve effectiveness of ICDP schemes. Furthermore, experiences from PES schemes show that unless poor people's user and management rights are secure, migration to REDD areas by stronger groups attracted by potential benefits may limit poor people's access further.

Time dimensions of BS

The timing of payments is also important, especially in poor areas where credit is scarce. This is clear from experiences from voluntary carbon markets. The profile over time of emission reductions and carbon stock enhancements will vary considerably between different types of REDD activities giving complex BS payment schedules. This is similar to the experiences of BS for commercialized products under the Convention on Biological Diversity. A "first best" principle is to deliver the monetary benefits in tune with when emission reductions occur (e.g. after the first year of reductions have been verified, payments are made).

In practice, some payments may need to come up-front. The poorer the participants, the more limited the credit available and the longer until emission reductions/carbon sequestration is achieved, and the more uncertain the investment climate and the tenure arrangements, the bigger are the needs for up-front payments and sharing of risks. At the same time, to maintain strong incentives of continued management actions, significant payments need to be held back until outputs delivered and outcomes achieved.

Taxing project activities – a way to redistribute benefits

Experiences from the CDM and voluntary carbon markets suggest that project-level investments may not be good at achieving the dual goals of reducing emissions/increase sequestration and at the same time provide livelihood benefits (sustainable development). An option is for governments to tax project level carbon credits, as is done in China for CDM. A share of this revenue could be used to fund targeted and dedicated livelihood programs implemented by government or other institutions (e.g. specialized NGOs) in the project areas.

No payments for illegal activities

Often, there are many illegal activities that contribute to emissions. This raises the question of how BS can be used to reduce the relevant illegal activities. If one includes those involved in illegalities in the BS scheme, one rewards crime. This may weaken the legitimacy of the scheme locally, nationally and internationally. It may also stimulate these kinds of activities in other areas as BS functions as an additional reward (i.e. create perverse incentives). Instead of involving the players involved in illegalities, one may simply keep them out. In many countries and areas, the rule of law does not apply. Then

one will either experience that the illegal activities continue, in which case the effects of the scheme is weakened.

Alternatively, one may see that stakeholders participating in the BS scheme get an incentive to stop the illegal activities. In this case, BS may trigger conflict. It is difficult to give general advice as to how solve the above problems. The best solution would be if the rewards from REDD would provide sufficient incentive for the authorities to apply the rule of law in relation to REDD projects. See also our qualifying discussion on how to define and determine legal vs. illegal activities in practice in Chapter 3.1.

7.5 CREATES LEGITIMATE MECHANISMS FOR MANAGEMENT OF BENEFITS

Ensures proper procedures for reporting, auditing, and monitoring of benefit streams

→ General trust and legitimacy and effective safeguards against corruption

At the core of the BS scheme, there must be a system for the distribution of benefits to the stakeholders in accordance with agreements made. If stakeholders do not trust that a mechanism for distributing benefits will work, they will hesitate at making commitments or at keeping to them.

Existing or new BS mechanisms?

One may either channel REDD benefits through an existing system or create a new institution. In the initial stage one may have to create new institutions and to offer types of rewards and distribution systems that are new to stakeholders involved. In societies where the general level of trust is not very high, it may take time to gain acceptance for the mechanism. Later, the mechanism will normally be judged by its functioning: If it works, it is accepted as legitimate, if it doesn't, it will be illegitimate.

Our review illustrates examples of BS through existing mechanisms which are already in place (e.g. production forestry benefits through local government) and new mechanisms set up for the purpose (e.g. community development funds, trust funds for ICDPs etc.). In some cases, it is not practical to use existing structures and dedicated BS systems must be established (for example for new PES schemes, or for transfer of royalties from mining activities). Any legitimate BS mechanism will need to have proper procedures for reporting, auditing, and monitoring of benefit streams.

The decisions on how to distribute benefits will clearly have to be based on the local context. If there are systems in place that has the legitimacy among the stakeholders and the required capacity, and they are suitable for the REDD activity in question, these systems should be used as much as possible. If the existing systems are vulnerable to governance problems, new systems may have to be set up or existing ones reinforced with new checks and controls. Our review of experiences show that both existing government structures and new BS mechanisms created for a specific purpose or project, may be vulnerable to governance problems.

Assessing capacity and accountability is key

When designing a mechanism for managing revenues from REDD at the national level, an assessment of the government's capacity should be a first step. The government system will be used if it fulfills the necessary criteria. To some extent, the experience with budget support to developing countries is relevant for how to assess the government's capacity and how cooperation between the government and external institutions financing REDD

can be structured. The case from Colombia in Chapter 6.3 illustrates the consequences of inadequate capacity in the government sector.

REDD schemes may require a type of capacity that is not reflected in the normal assessment of a government's capacity for financial management. Often REDD will involve stakeholders that are not integrated in the formal and monetized economy, as discussed above. This is the case for many rural PES schemes, ICDPs and community forestry management arrangements. Even if the government has good capacity for financial management, it may not have the legitimacy with all communities and not have the capacity for assessing priorities and distributing benefits among groups outside the formal economy. After having defined the groups of stakeholders, one should then assess the government's capacity for distributing and managing the revenue for each of the groups. Some PES and ICDP initiatives in poor areas would typically require specific, new and dedicated channels for BS.

Technical capacity for managing and disbursing benefits is important, but the main problem will often be related to accountability. If central governments or community organizations cannot ensure accountability and transparency, a third-party trustee may be necessary (Bennet 2002). This is most likely going to be essential for any well-functioning BS system under REDD.

New BS system, if capacity in existing ones is lacking

If the government is not found to have the required legitimacy and capacity, one will normally have to establish a new institution and mechanism for the management of revenues. The institution must have a governance structure that local stakeholders, the government, and external financiers can trust. Participation by these parties in the governing bodies of the institution will often be useful. The institutions involved in the distribution must not only have integrity, but also have the relevant capacity, including technical skills. In some cases, benefits will be in the form of goods and services, and not in the form of cash, as discussed above.

Experiences from the review (especially community forestry and ICDPs) show that stability and predictability of the institutions and systems in place for BS is very important to create legitimacy, trust and reduce uncertainty for stakeholders.

When considering whether to channel REDD funds through existing government structures or to create new structures for vertical and horizontal BS, an important, conscious trade-off needs to be made. On the one hand, in the longer term governments' capacity to manage funds and deliver services should be strengthened and improved. This is done by trying to improve current, imperfect systems by incremental steps. On the other hand, the need for efficient and timely delivery of emission reduction and creation of trust and legitimacy, calls for setting up new BS mechanisms in many countries and contexts. Compared to standard budget support, which has the rationale of strengthening existing systems and not by-bass government, there may however be additional arguments to channel REDD funds through separate, new systems. One important reason is to make it clear that such funds are additional to government budgets, earmarked payments for the delivery of carbon.

Legitimacy of national level BS options

As discussed in Chapter 3, Vatn and Angelsen (2009) compare four options of channeling REDD funds according to many criteria. In light of the discussion above and considering legitimacy of the mechanism in particular, we make the following observations:

1. ***Project-based funding:*** The private sector is directly involved in REDD projects on the ground which generates credits. This channel is not very credible among national

stakeholders. Some communities prefer direct involvement with private sector actors, rather than through government involvement. This alternative is favored by international carbon buyers and (some) donors.

2. ***Separate REDD fund[68] outside state administration:*** A fund established outside the state administration, governed by a board that could include international and national representatives. This could be a suitable mechanism when the government administration is not very effective and reliable. Given that it is unlikely that any future REDD mechanism will only involve project-level investments (alternative 1), this is the mechanism with the highest potential legitimacy among international stakeholders. However, Vatn and Angelsen point out that this is also vulnerable to governance problems.
3. ***REDD fund within the government administration:*** A national fund that is established within existing structures of the state administration, with representatives from various national stakeholder groups on the board. This could be suitable when the government sector is effective and trusted and one wants clarity as to the additionality of the REDD funds from standard budgets. This has lower legitimacy internationally than alternative 2.

Regular budgets: Under this option REDD funds are distributed as general budget support through existing channels. The funds could also have some degree of earmarking attached. This solution would be acceptable only when the trust in the government sector is very strong and it is not required that BS funds are additional to other government spending related to the group involved in BS. This is the option with the lowest legitimacy internationally.

7.6 ENFORCES EFFECTIVE TRANSPARENCY PROVISIONS

Harnesses internal and external forces for increased transparency

→ Cost-effective and meaningful accountability

Increasing transparency forces accountability

Transparency is often a necessity for the building of trust between parties. Opening books to internal and external controllers, the eyes of civil society and the public at large can make wonders in terms of increasing accountability. This has for example been experienced in the extractive resource sectors and in production forestry. The functional transparency of BS systems is a prerequisite for their perceived legitimacy. Transparency is therefore closely linked to legitimacy, as discussed above.

Measures to increase transparency in the management and distribution of benefits should go hand in hand with increasing the technical capacity of staff and the sophistication of financial systems within government, NGOs, community groups and associations and others likely to be responsible for receiving REDD payments.

Simple transparency measures often effective

Transparency can be increased in many ways. Our review has shown that simple measures can be remarkably effective. One example of this is in PNG, where experience indicates that distributing cash to individuals in public seems to strengthen the functioning of the development councils. In some community forestry management arrangements, for

[68] In this context a "fund" does not necessarily entail the accumulation of assets. A fund could be an arrangement for the channeling of current receipts from the carbon.

ICDPs and for the distribution of timber tax revenues, public ceremonies have sometimes been used to distribute the benefits.

Publishing the amount of funds received by a local council from timber revenue sharing arrangements on public notice boards and in local news papers is an effective way to inform local people about the level of benefits. People can then hold the local council and mayor responsible if the actual results in terms of new investments or social services have not been forthcoming. They can more or less check by observation if promised outcomes have been achieved. In some areas in Cameroon, for example, local people did not even know they were entitled to having a share of timber concession revenues. In the case of community forest management, making sure marginalized groups are included in decision-making was seen as important to increase transparency.

Many transparency standards available

In terms of more thorough overhaul of revenue management systems, there are many transparency standards internationally that can be built on for REDD. Which ones to use would depend on the context. For the national level, it would to some extent depend on which of the four options to channel funding would be chosen. The standard developed by Extractive Industries Transparency Initiative (EITI) may be a useful starting point to consider for REDD[69]. There are also others, for example developed by the IMF and OECD. For small, local level BS schemes, simple transparency measures like the ones mentioned above may be sufficient in combination with standard management and accounting procedures adopted to the local context.

7.7 DEVELOPS EFFECTIVE DISPUTE SETTLEMENT MECHANISMS

Prepares for changes in agreements and adopts dispute settlement mechanisms

→ Avoids costly conflict, disciplines actors and reduces uncertainty

BS schemes need to be flexible, prepare for necessary changes of agreements

Several cases reviewed underline the need for agreements on BS to be flexible. Some of the schemes involve the establishment of institutions that are novelties in the respective communities. The parties often lack experience with the type of agreements they enter into. Reassessment based on practical experience after implementation of the agreement or change of circumstances could trigger calls for changes to the agreements. In many BS schemes (for example ICDP and CFM) revenues are typically unstable over time. This may warrant reassessment of terms. It will thus normally be preferable to leave room for changes to the agreement over time. This will necessitate clear rules up-front on how changes can be negotiated.

Dispute settlement mechanisms can avoid conflicts before they start

To ensure compliance, there must be rules of enforcement (surveillance and counter-vailing measures). It is not enough to have appropriate incentives, as discussed above in the context of ICDP, if people can continue damaging activities without risking sanctions (e.g. cuts in benefits). Often one will find that the parties have different interpretations both of the agreement as well as facts relevant for the agreement. This calls for clear rules on dispute settlement. Without such rules, disagreements may escalate and endanger the objectives of the agreement and create wider conflict.

[69] http://eitransparency.org/

Although dispute settlement may involve the court system, it is normally advisable to have several stages of dispute settlement before involving the courts. There are several reasons for this. In most countries, involving the court means that the process takes long and is costly for the parties involved. In many countries, the court system may not be well-functioning and may thus not provide fair and useful outcomes. The agreements will also typically involve groups that are not used to dealing with formal law. It may therefore be useful to adopt customary dispute settlement mechanisms, e.g. in the context of ICDP or community forestry.

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