

CLIMATE INVESTMENT FUNDS

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MAPPING OF EXISTING AND EMERGING SOURCES OF FOREST FINANCING

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EXECUTIVE SUMMARY

The study is intended to provide an analysis of the funding sources and gaps for SFM for mitigation and adaptation of climate change in developing countries. The purpose is to provide an overall picture of forest finance focusing on external sources. As a mapping exercise, the study is aimed at identifying thematic areas and geographic regions or country groups which are already covered by existing financing sources and mechanisms, and where there are gaps. The study also explores possible impacts of future financing schemes related to forests in climate change mitigation.

Existing External Sources of Forest Financing

The current annual bilateral and multilateral flows to forests are estimated at about USD 1.9 billion and the foreign direct investment (FDI) to forest industries at about USD 0.5 billion. Information on private investment by institutional investors, commercial banks and export credit agencies is not available and neither is it known how much the NGO and philanthropy sector contributes to forest financing. The ODA to forests includes about USD 700 million for forest conservation. In addition, the conservation NGOs and philanthropy focus on this thematic area.

In 2000-2007 the combined bilateral and multilateral financing flows have increased by almost 50% which has partly been a result of increasing engagement of the multilateral sources as their share of the total external public financing to forests increased from 26 to 42% during the study period. The multilateral sources accounted for three quarters of the total absolute increase in the total. However, also bilateral ODA has increased albeit at a slower rate (15% in 2000-2007). The figures cited should be used with care as the data on external forest financing is incomplete and partly inconsistent.

Multilateral Sources

Multilateral financing to forests is estimated at USD 0.8 billion per year in 2005-2007. The main source is the World Bank (WB) Group and its share in the total has increased from 51% to 73% in 2000-2007. More than a half (55%) of the Bank's financing to forests has come from the International Finance Corporation (IFC) in the form of equity and credit to private sector enterprises. Among the regional development banks, the African Development Bank (AfDB) has been the largest source of forest funding (9% of the total multilateral flows). The Asian Development Bank (AsDB) and the Inter-American Development Bank (IADB) have been marginal sources during this decade while in the 1990s their role was more substantial. ITTO's contribution was 5% in 2001 but it has dropped to 2%. GEF's share has been declining from 31% to 14% during the last six years.

The other multilateral sources have a volume-wise limited but strategically important role for contributing to financing of SFM. FAO's programmes amount to about USD 48 million/year, including the National Forest Programme Facility.

Bilateral ODA

Since 2000, two thirds of the cumulative forestry ODA has been allocated to Asia, only 20 % to Africa and 11% to Latin America. Asia's share peaked in 2003 when it reached almost 80% of the total. In terms of income level, the least developed countries received 18% of the total and the other low income group received another 39%. The rest (43%) was channeled to middle income countries.

Bilateral ODA is also concentrated among recipient countries. In 2006 India absorbed 22% of the total forestry ODA, followed by China (13%) and Viet Nam (12%). Together with Indonesia, Cameroon, Tanzania, Bolivia, Brazil, Colombia and Honduras, these ten countries received two thirds of the total forestry ODA which is therefore fairly highly concentrated.

Although the traditional forestry ODA in the future might not significantly increase or could even decline in some donor countries, funding through new instruments and various international and regional initiatives is likely to increase in the future, probably significantly. A higher proportion of the ODA may also be channeled through multilateral institutions in line with the recent trend. The increased funding will most likely be linked to the broader climate change and conservation agenda. Funding flows through new instruments and approaches are likely to benefit middle income countries more than low income countries. Maintenance of the focus on the least developed countries will

therefore be a challenge as many of them are lacking preconditions for effective aid and other external financial flows.

Private Sector Investments

Foreign-induced investment is substantially higher than the recorded FDI flows (USD 0.5 billion per year in 2003-05) as local financing of foreign-owned investment projects is common. The FDI stocks in the wood and paper industries in developing countries have increased rapidly reaching USD 17.8 billion in 2005. Another recent important trend is FDI made by developing country investors in other developing countries. A significant increase in foreign private financing in developing countries is foreseen in planted forests and downstream industrial processing. Plantation investments are partly made by Timberland Investment Management Organizations (TIMOs) as their risk-averse institutional investors have started to appreciate high expected returns and improved country-level investment climates.

Only relatively a few countries can offer attractive timber growing conditions, suitable land availability, and adequate investment climate to enable foreign investment to take place. Appropriate regulation and voluntary measures such as forest certification are needed to mitigate possible negative impacts and to integrate these new actors in the national and local socio-economic framework to maximize mutual benefits.

Other Sources

There are a huge number of other sources of funding on which no consolidated quantitative information is available. While NGOs may often be well equipped to raise funds from these sources, forest communities and smallholders have difficulties in accessing most of them. Nevertheless, albeit being perhaps limited in volume, the non-conventional forest-related financing provides a valuable complement to conventional sources, particularly in the focal areas of education, conservation and research. These sources also address caveats which may not be covered by others, such as innovative and higher-risk projects. Philanthropic sources are already important for financing of forest conservation and their role could be expanded to address reduction of deforestation and SFM.

Emerging Instruments and Mechanisms for Forest Financing

Carbon Offset Markets

The main mandatory market for carbon offsets, the Kyoto Protocol's Clean Development Mechanism (CDM) has endorsed only one forest project for the time being. The current forest carbon portfolio under CDM includes a total of 27 projects with a total amount of credits of about 2 million tons CO₂ suggesting potential demand and supply which has not yet been realized. The voluntary market for carbon credits was USD 331 million in 2007 or more than three-fold the 2006 level. One sixth of this market was generated by reforestation and forest conservation projects. In spite of small volumes, there is a significant forest carbon offset demand which cannot be channeled through the regulated market. In the short run this unregulated market is likely to play a critical role in developing new ways of implementation for forest carbon trading.

Reduced Emissions from Deforestation and Forest Degradation (REDD)

Avoiding deforestation would be among the lowest cost mitigation options to avoid increasing CO₂ emissions and possibly also increasing sinks. At the same time, other benefits like biodiversity conservation, poverty reduction and climate change adaptation could also be enhanced. Through carbon revenue, prospects for the economic viability of SFM in developing countries are expected to substantially improve as at least part of the ecosystem services that forests provide could be remunerated.

REDD compensation as a win-win instrument is being increasingly supported by practically all stakeholders for a variety of reasons. For tropical country governments REDD can represent an opening of a new source of financing for national priorities; for donor countries it can be a low cost option for carbon offsets; for environmental NGOs REDD can generate additional resources for biodiversity conservation; for the rural poor badly needed income and financial support to community development as well as a means to improve their forest tenure rights; for the private sector REDD can

be an additional source of funding to make SFM financially viable; for political elites yet another opportunity of income; for multilateral development banks REDD can open up new ways of doing business in the context of maintenance of global public goods; and for intergovernmental organizations it offers a new area of intervention in technical assistance and a new funding source.

Meeting such a broad range of varied interests in REDD schemes will be difficult and several issues need clarification: (i) uncertainty about co-benefits, (ii) risk for violating the rights of indigenous and other local populations, (iii) possible impact on land prices, (iv) equity in distribution of REDD payments, (v) governance arrangements of REDD schemes, (vi) slowness of necessary policy and legal reform process, (vii) stakeholder participation, (viii) limited access to REDD financing by only forest-rich countries, (ix) possible exclusion of countries which have already addressed deforestation, (x) possible exclusion of drylands and other low carbon intensity forest lands, (xi) definitions and methodologies for treatment of land degradation and restoration of deforested areas, (xii) measures to address underlying causes for deforestation and forest degradation, (xiii) lack of proper understanding on the role of timber harvesting in carbon stock management, (xiv) the level of REDD application (national, sub-national or project), (xv) use of a market mechanism or a fund mechanism, (xvi) possible flooding of the carbon offset markets with REDD credits, (xvii) transaction costs, etc.

Some of the above issues can be addressed through international regulation and some through appropriate measures in national REDD strategies. However, many are cross-cutting themes and need to be considered holistically, e.g., in the context of national forest programmes or similar broader strategies. Independently from which approach is applied, there are additional needs for co-financing of complementary activities to ensure that REDD benefits are created in practice, particularly building up country capacity to implement necessary measures to reduce deforestation.

International Climate-Related Forest Initiatives

Several initiatives have been taken to advance the implementation of REDD related activities, such as:

- The Forest Carbon Partnership Facility (FCPF) of the World Bank will assist developing countries in their efforts to reduce emissions from deforestation and degradation and building capacity for REDD activities. FCPF's two elements are (1) the Readiness Fund to build up specific implementation capacity in participating countries, and (2) the Carbon Fund to test performance-based payments deriving from REDD.
- Multilateral development banks are in the process of establishing special climate investment funds to assist their members in the implementation of the UNFCCC. The World Bank is most advanced with its Strategic Climate Fund (SCF) which will provide, inter alia, incentives to maintain, restore and enhance carbon-rich natural ecosystems through piloting and scaling up of new development approaches. SCF has a holistic approach to climate change mitigation and adaptation which is particularly relevant in the forestry sector due to diverse opportunities to contribute to the climate objectives. The World Bank is currently developing a Forest Investment Program (FIP) which could address the gaps of SFM financing in the existing and emerging instruments such as REDD schemes. The FIP is projected to be established by the end of 2008.
- FAO, UNDP and UNEP have launched a joint UN REDD Program as a collaborative effort to provide technical assistance in REDD capacity building to developing countries through a coordinated approach.
- The Collaborative Partnership on Forests (CPF) has taken an initiative to elaborate a strategic framework for engaging all the key CPF members to enhance efficiency in individual agency responses and other initiatives to climate change through improved cooperation and coordination.
- The International Tropical Timber Organization (ITTO) is planning to develop a thematic programme on tropical forests and climate change.
- In November 2007, the GEF Council approved a Sustainable Forest Management Programme to address this area of intervention in a more comprehensive and coordinated way than in the past. The projects falling under this category will contribute to the implementation of the forest related commitments and programmes of work of CBD, UNFCCC and UNCCD.

Climate-Related Regional and Country Initiatives

The progress made in recognition of the role of avoided deforestation and forest degradation under the UNFCCC has given rise to several donor initiatives and some developing country governments to provide funding for tropical forest conservation such as the Congo Basin Forest Fund (CBFF) and the Amazon Fund in Brazil. In the developed countries, e.g., Australia and Norway have launched new financing initiatives targeted at REDD and forest conservation.

There appears to be readiness for action and willingness for financing in climate change mitigation through forest interventions. Many recent decisions by donors will mobilize significant new resources for forest financing even though their total magnitude is still difficult to estimate. Nevertheless, these initiatives, together with various market-based or fund-based financing schemes, have potential to at least double the current financial flows from the international community to forests in developing countries. However, many of them are targeted at the same forest-rich countries which have also been identified as priorities for REDD schemes.

On the other hand, the multitude of initiatives raises the issue of coordination among various parties and funding mechanisms. There is a risk that funding will be driven by the sources and not demand. Overlapping mandates between initiatives need to be avoided. There is a need for harnessing synergies between new and emerging financing mechanisms addressing forest-related global concerns, particularly those related to climate change. While harmonization between independent initiatives as an objective may not be realistic and not even appropriate, improved cooperation and coordination is needed based on comparative advantages and available financial and human resources.

Payments for Forest Environmental Services Other Than Carbon

Various regulatory, market-based and other voluntary payment mechanisms for forest environmental services have been introduced over the last decade. They are already a major source of funding in many developed countries for conservation of watershed conservation and biodiversity but their greatest potential is in developing countries and particularly in climate change mitigation and adaptation. The actual development of market-based PES mechanisms in developing countries has, however, been slow. Support is needed to generate (i) realistic understanding of the possibilities of PES schemes, (ii) necessary preconditions for their effective implementation, and (iii) needs for financing of upfront investments in capacity building, information systems, and setting up of appropriate voluntary and regulatory payment mechanisms with intended equity impacts. There are also sovereignty issues to be addressed.

Other Emerging Instruments of Forest Financing

A range of new instruments is being developed to complement the menu of traditional lending and equity investment in the forest sector. These include (i) eco-securitization and forest-backed bonds, (ii) forest insurance and re-insurance, (iii) application of sustainability safeguards, and (iv) corporate-smallholder/community partnerships. These address some of the constraints related such as upfront financing of long-term forest investments (particularly plantations) and risk management against natural disasters. Eco-securitization and insurance are important strategic instruments which would greatly facilitate private sector investment in forestry but, with a few exceptions; they are still at development stage and often need external support.

Financing Needs and Investment Gap

Due to great variation in local conditions estimating financing needs for implementing sustainable forest management is difficult. The most comprehensive effort to assess financing needs for the forestry sector has probably been carried out by UNFCCC (2007) which concluded with the following indicative estimates for developing countries:

	<u>USD / billion/year</u>
opportunity costs for REDD	12.2
sustainable forest management costs	8.2

afforestation/reforestation costs	0.1 – 0.4
Total	21.0

These above estimate for afforestation and reforestation does not reflect the entire potential of this measure in developing countries as it refers only to lands which are eligible for the CDM, i.e., which were not forest in 1990. The total A/R potential is significantly higher.

It is apparent that there is a vast gap of financing in all areas. In addition, the above estimates do not consider investments in capacity building of governments, smallholders, communities and other stakeholders, and other upfront investment costs which would be needed to make forest carbon payments to work in practice. Furthermore, climate change adaptation in forests would also require additional financing.

Geographic Gap Analysis

Most developing countries have some ODA flows to forests but there are 30 countries where no source has been reported. The highest donor presence is found in South and Southeast Asia. Also Central and South America are relatively well covered by donor participation. Africa as a whole and Western and Central Asia have low levels of country presence by external financing sources.

Many low forest cover countries do not receive substantial external support in managing and conserving their forests or tree resources. Many small or medium-sized countries with still relatively large forests have only limited external support. A number of developing countries with high deforestation rates (above 1%/year) have significant donor presence but there are a number of them where external support is absent or limited. Many countries with high or medium forest cover (above 40%) have only limited presence of external financing agencies. With few exceptions, small island countries do not receive any support to forests although their importance in maintenance of biodiversity, watershed protection and adaptation to climate change are often critical. On the other hand, there are a number of countries where external funding sources have a particularly strong presence, such as Indonesia, Brazil, Viet Nam, Kenya and Ethiopia.

Private foreign financing through plantation investments are heavily concentrated in a small number of countries in Latin America and Asia. Foreign investments in natural forest management are concentrated to forest-rich areas in the Congo Basin, the Amazon Basin and Southeast Asia. Foreign-owned industrial capacity is more broadly invested across countries in Asia and Latin America but Africa is clearly lagging behind.

Thematic Gaps

A considerable share of forest ODA is allocated to forest conservation which is compatible with the principle of supporting enhancement of global public goods. In relative terms, SFM outside protected areas appears to be substantially less supported by external funding. New PES mechanisms, particularly REDD, have a major potential in providing financing for SFM, particularly forest conservation.

Financing of forest restoration will remain a major gap, particularly in arid and semi-arid regions due to their low competitiveness for production of wood and NTFPs as well as for PES schemes due to low carbon intensity but their potential contribution to co-benefits (other aspects of SFM) is often substantial.

Private sector financing will be able to take care of most of the investment needs of productive fast-growing plantation development in those countries which have a comparative advantage and adequate investment climate. Trade-related initiatives like forest certification and the EU Forest Law Enforcement, Governance and Trade (FLEGT) will assist producers to internalize SFM costs in product prices but this process will take time as long as low-cost competition continues from illegally and unsustainably produced and the market share of certified products remains limited.

Investment Potential for Forest Carbon Financing

A whole range of activities are needed to achieve sustained financing of forest management for environmental services and various forest products and services. The long-term scenario should be

that these two main income-earning sources could be able to ensure that SFM becomes gradually self-financing. In order to achieve this goal, new instruments require substantial initial upfront investment to develop and pilot suitable modalities in specific country conditions.

Substantial new investments in areas that are central to SFM implementation (including new instruments like REDD and other PES schemes) cover e.g., (i) Implementation of measures to shift agribusiness companies and landowners away from clearing of rain forests towards planting on non-forest lands; (ii) SFM-based production of timber and non-timber forest products, (iii) establishment and effective implementation of adequate forest ownership/use rights for communities, smallholders and forest dwellers; (iv) land use zoning and planning ;(v) complementary investments in non-forest sector programs ; (vi) building institutional, legal and technical capacities of governments and other stakeholders; (vii) improving forest governance ; (viii)restoration of degraded forest ecosystems and establishment of plantations; (ix) improvement and restructuring of forest-based industries; (x) rural development, social services, infrastructure as well as administration and management skills of forest communities; (xi) innovations and research ; (xii) implementation of market-based and other voluntary mechanisms for payments for environmental services; (xiii)protection of forests against fires, pests and diseases, etc.

A qualitative attempt to characterize investment potential in developing countries is given below. It illustrates where future investment in SFM, REDD, afforestation and reforestation (A/R), and forest restoration could be directed.

Deforestation rate/ relative forest cover	Low forest cover countries	High forest cover countries
Countries with high deforestation rate	REDD: high/medium potential SFM: low/no potential A/R: high potential Restoration: high potential	REDD: high potential SFM: high potential A/R: high potential Restoration: high potential
Countries with low deforestation rate	REDD: low/no potential SFM: low/no potential A/R: high potential Restoration: medium potential	REDD: medium potential SFM: high potential A/R: low/medium potential Restoration: low potential
Countries with zero deforestation/ increasing forest area	REDD: no potential SFM: low potential A/R: medium potential Restoration: low/medium potential	REDD: no potential SFM: high potential A/R: low potential Restoration: low/no potential

Key Conclusions

The Principles of the Paris Declaration on Aid Efficiency are not yet adequately applied to align and harmonize ODA to forests resulting in high transaction costs both for donor agencies and recipient countries. Only national leadership to coordinate various financing sources and external initiatives can ensure effective coordination.

National forest programmes (nfp) provide a useful framework for donor harmonization and in-country coordination of external financial support to forestry but only in a small number of countries they appear to be integrated with broader national development and poverty reduction strategies. NFPs and associate national forest financing strategies would provide a useful national level framework for identifying potential needs for forest financing.

There is a need to harness synergies between various financing mechanisms and instruments in climate change, biodiversity, land degradation and sustainable forest management. The current cooperative arrangements appear to be in need of strengthening to make the involved parties to respond to this challenge in practice.

The existing and emerging sources of funding for forests have major thematic and geographic gaps. The main thematic bottleneck is financing of mainstream investment of SFM. Access to funding of mainstreamed upfront investment will be critical in developing countries so that they can achieve self-financing of SFM in the medium and long run depending on the local conditions. This “self-financing”

would be based on revenue generated for forest owners and managers from forest goods and services, including payments for global public goods generated by forests.

If new forest financing schemes targeted at climate change mitigation are limited to high deforestation/high forest cover countries, huge opportunities for emission reduction and carbon sequestration would be missed. Furthermore, the social, environmental and economic co-benefits of forest carbon financing would not be realized where they would be most needed, i.e. in the least developed low forest cover countries.

The Forest Investment Program (FIP) could play an important role in contribution to financing of those investments which cannot be funded from other sources.

ABBREVIATIONS AND ACRONYMS

AFD	Agence Française de Développement
AfDB	African Development Bank
AGF	Advisory Group on Finance
AHEG	Ad Hoc Expert Group
A/R	Afforestation/reforestation
AsDB	Asian Development Bank
AUD	Australian dollar
BioCF	BioCarbon Fund
BPF	Bali Partnership Fund
C&I	Criteria and Indicators
CAS	Country Assistance Strategy
CBD	Convention on Biological Diversity
CBFF	Congo Basin Forest Fund
CBFP	Congo Basin Forest Partnership
CDM	Clean Development Mechanism
CEPF	Critical Ecosystem Partnership Fund
CFC	Common Fund for Commodities
CGIAR	Consultative Group on International Agricultural Research
CIF	Climate Investment Fund
COP	Conference of Parties
CPF	Collaborative Partnership on Forests
CRS	Credit Reporting System
CSO	Civil society organization
CTF	Clean Technology Fund
DAC	Development Assistance Committee
DPL	Development Policy Loan
EPFI	Equator Principles Financial Institutions
ETFRN	European Tropical Forest Resource Network
ESMAP	Energy Sector Management Assistance Program
ETFAG	European Tropical Forestry Advisory Group
ETS	Emission Trading Scheme
EU	European Union
FAO	Food and Agriculture Organization
FCPF	Forest Carbon Partnership Facility
FDI	Foreign direct investment
FLEG	Forest Law Enforcement and Governance
FRA	Global Forest Resources Assessment (FAO)
FY	Fiscal year
GDP	Gross Domestic Product
GEF	Global Environment Facility
GM	Global Mechanism
GOF	Global Objective on Forests
ha	hectare
HFHD	High deforestation high forest cover (country)
HFLD	High deforestation low forest cover (country)
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IADB	Inter-American Development Bank
IFAD	International Fund for Agriculture Development
IFC	International Finance Corporation
IFCI	International Forest Carbon Initiative
IIED	International Institute for Environment and Development
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
ITTA	International Tropical Timber Agreement
ITTO	International Tropical Timber Organization
IUCN	The World Conservation Union
LFCC	Low Forest Cover Country
LULUCF	Land Use, Land-Use Cover Change and Forestry
MDB	Multilateral Development Bank
MIGA	Multilateral Investment Guarantee Agency
MPMF	Montreal Protocol Multilateral Fund
nfp	National forest programme
NGO	Non governmental organization
NLBI	Non-Legally Binding Instrument

ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
PES	Payment for Environmental Service
PPCR	Pilot Program on Climate Resilience
PROFOR	Program on Forests
PRS	Poverty Reduction Strategy
PRSP	Poverty Reduction Strategy Paper
RAF	Resource Allocation Framework
REDD	Reduced Emissions from Deforestation and Forest Degradation
REIT	Real Estate Investment Trust
ROCE	Return on Capital Employed
SCF	Strategic Climate Fund
SFM	Sustainable Forest Management
SME	Small and medium-sized enterprise
TFA	Tropical Forest Account
TFRK	Traditional Forest-Related Knowledge
TIMOs	Timberland Management Organization
TNC	The Nature Conservancy
UN	United Nations
UNCCD	UN Convention to Combat Desertification
UNCTAD	UN Conference on Trade and Development
UNDP	United Nations Development Programme
UNFCCC	UN Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
UNFFS	United Nations Forum on Forests Secretariat
USA	United States of America
USAID	United States Agency for International Development
USD	United States dollar
WB	World Bank
WBG	World Bank Group
WFP	World Food Programme
WRI	World Resources Institute
WWF	World Wide Fund for Nature

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It is emphasized that the views presented in this report are those of the author and do not necessarily reflect the views of the World Bank.

1. INTRODUCTION

1.1 Background

Addressing climate change is central to the sustainable development and poverty reduction agenda. An effective response to climate change must combine both mitigation and adaptation. A delay in reducing greenhouse gas (GHG) emissions significantly constrains opportunities to achieve lower stabilization levels and is likely to increase the risk of more severe climate change impacts. Climate change impacts have the potential to reverse the development gains that have been hard-earned by developing countries over the past decades and progress towards achieving the Millennium Development Goals. The Bali Action Plan reaffirms that in the context of meeting the climate change challenge economic and social development and poverty eradication are global priorities.

Deforestation and degradation are the second leading cause of CO₂ emissions in the world. They account for approximately 18% of global greenhouse gas (GHG) emissions and over a third of emissions from developing countries. Although there remain divergent opinions as to how deforestation and forest degradation should be included in any future climate change regime, there is an emerging consensus that this issue must be effectively addressed. Current UNFCCC discussions on the future of the climate change regime are addressing reductions in emissions from deforestation and forest degradation (REDD).

The UNFCCC COP Decision 2/CP.13 *"Reducing emissions from deforestation in developing countries: undertake efforts, including demonstration activities, to address the drivers of deforestation relevant to their national circumstances, with a view to reducing emissions from deforestation and forest degradation and thus enhancing forest carbon stocks due to sustainable management of forests"*. The Decision further encourages *"all Parties, in a position to do so, to support capacity-building, provide technical assistance, facilitate the transfer of technology to improve, inter alia, data collection, estimation of emissions from deforestation and forest degradation, monitoring and reporting, and address the institutional needs of developing countries to estimate and reduce emissions from deforestation and forest degradation"*.

The Bali Action Plan *"Reducing emission from deforestation in developing countries: approaches to stimulate action"* calls for consideration of, inter alia, *"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 stock in developing countries"*. This holistic view means that both emission reductions and sustainable forest management (SFM) are promoted.

As a response to the UNFCCC deliberations on the future of the climate change regime, including discussions on a financial architecture and funding strategy, the World Bank Group (WBG), in consultation with the regional development banks, donor and developing countries and other development partners, has taken action to scale-up assistance to developing countries and build the necessary knowledge base in the development community. The new Climate Investment Funds (CIF), recently approved by the Board of the WBG, will build on progress made by many of the developing countries. The objectives are (i) scaling up investments in low-carbon technology (Clean Technology Fund) and (ii) supporting various programs to test innovative approaches to climate action (Strategic Climate Fund). The CIFs combine significant concessional financing with international financial institutions, public and private sector flows, the Global Environment Facility (GEF) and other climate financing (such as carbon finance). The CIFs will demonstrate how multilateral development banks (MDB) can help developing countries achieve poverty alleviation and growth objectives with the global climate change imperative. Donor contributions to the CIFs would be new and additional to existing Official Development Assistance (ODA) funding levels. Designed as an interim instrument, the CIFs include specific sunset clauses linked to agreement on the future of the climate change regime.

Current programs targeted at reduced emission from deforestation and forest degradation (REDD) such as the Readiness Fund and the Carbon Payment Fund under the Forest Carbon Partnership Facility (FCPF) as well as the UN-REDD Program are not designed to cover transformational investments necessary to achieve emission reductions. Recognizing these challenges, the Board of the WBG, on July 1, 2008, in the context of the design of a Strategic Climate Fund, called for

elaboration of a Forest Investment Program (FIP) as one of the targeted programs under the SCF. The FIP should be established by the end of 2008 with a view with to mobilizing significantly increased funds to accelerate efforts in developing countries to reduce deforestation and degradation, and to promote improved sustainable forest management as a means to reducing carbon emissions and the protection of carbon reservoirs.

During the preliminary process it has become clear that analytical work is needed to properly identify the investment gaps and understand where and in which activities FIP could most contribute to the efforts of developing countries in sustainable forest management (SFM) for mitigation and adaptation of climate change.

1.2 Objectives

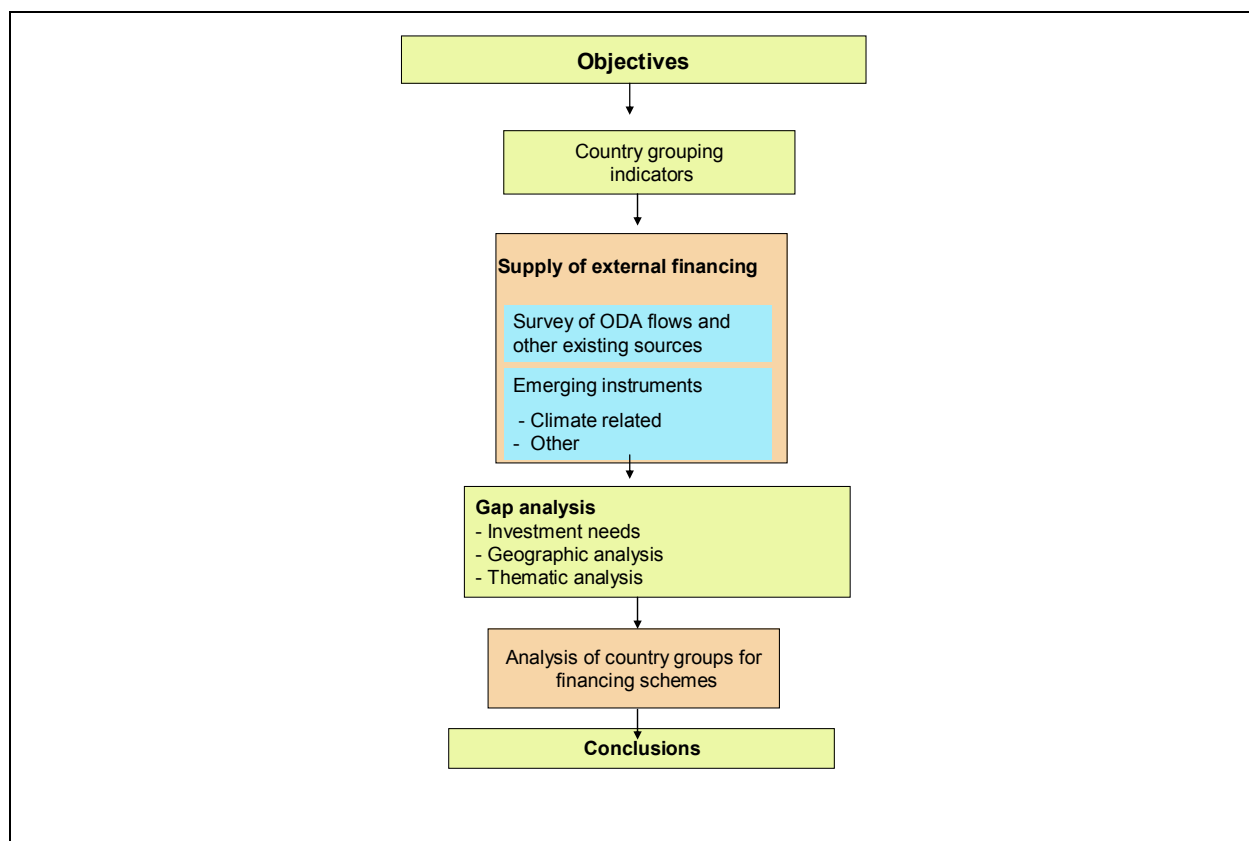
The study is intended to provide systematic and objective analysis of the funding sources and gaps for SFM for mitigation and adaptation of climate change in developing countries. The purpose is to provide an overall picture of forest finance focusing on external sources. The study attempts to review existing, evolving and potential sources/mechanisms of forest-related funding. As a mapping exercise, the study is aimed at identifying thematic areas and geographic regions or country groups which are already covered by existing financing sources and mechanisms, and where there are gaps.

The study also explores possible impacts of options for the scope of the Forest Investment Program.

1.3 Data and Methodology

The study approach is summarized in Figure 1.1. **Error! Reference source not found.**

Figure 1.1 Study Approach



1.3.1 Data

Sources of Data

The study is based on existing global and regional-level data sources, as well as various donors, international financial institutions, and other databases on funding sources related to, or with potential to, finance SFM activities in countries. FAO has recently updated the CPF Sourcebook on Funding for Sustainable Forest Management which was a useful source of information as well as the data provided by OECD/Development Assistance Committee (DAC). The study also relied on the earlier work carried out on the subject (e.g., El Lakany et al. 2007, Indufor 2006) and the outputs of the various expert meetings and workshops¹, ETFRN's publication on forest financing (Holopainen & Wit 2008), reviews and evaluations of the existing financing mechanisms (WB, GEF, CEPF, etc.) and various other sources (including recent work carried out on financing and REDD under the UNFCCC and the CBD) were also drawn on.

There is limited information on the needs of financing for SFM among developing countries. A stock-taking effort was made to collect information on the poverty reduction strategies, country assistance strategies and national forest financing strategies in order to gauge demand for Official Development Assistance (ODA) for forests.

The available information on domestic forest financing flows is even more limited than on external sources. There is, however, a general view that domestic sources (including in kind contributions of forest owners, farmers and forest communities) provides the bulk of funding for SFM in developing countries (e.g., El Lakany et al. 2007; Savcor Indufor 2007; Tomaselli 2006; UNFCCC 2007; etc.). Assessment of domestic sources was not conducted in this study due to time constraints. Further work based on country case studies, could be an appropriate approach to tackle this issue through a separate effort. However, it is recognized that the lack of information on domestic financing sources is a major weakness of this study and therefore an overall picture of the financing situation of SFM still remains to be established.

Survey on ODA Flows

One of the key pieces of information which is currently missing is the volume and trends in the existing Official Development Assistance (ODA) to forests/forestry. In an earlier survey (Joshi 1999) only seven countries were able to provide such data. For this reason, a survey among bilateral agencies and multilateral institutions was carried out to obtain up-to-date information on the ODA flows into forests. This proved to be a highly complex exercise because (i) there are differences in the thematic coverage of national data (e.g. whether forest conservation is included or not), (ii) at least one country included concessional bilateral credits and loans in its data which were generally excluded. (iii) forest components are often piggy-packed into broader programs and projects and they are not easily separable, (iv) there are data gaps and also a risk of double counting of ODA flows going through the multilateral organizations, (v) in many cases forestry is not coded as a specific sector of intervention, and (vi) data has not always been consolidated and needs to be compiled from project-level information which is difficult to interpret.

It is important to note the two concepts used in discussing the results: (i) forestry ODA referring to what has been classified by OECD/DAC under support to the forestry sector, and (ii) forest ODA which also includes support to forest conservation.

1.3.2 Methodological Aspects

A set of indicators were identified to be used in grouping countries, sub-regions or regions. They covered (i) extent of forest cover, (ii) rate of change of forest cover, and (iii) share of forest cover in the

¹ The Proceedings of the Oslo (2001) Workshop on Financing Sustainable Forest Management, the UNFF Ad Hoc Expert Group on Finance and Transfer of Environmentally Sound Technologies 15 -19 December 2003, Geneva; the International Expert Meeting on Innovative Financial Mechanisms: Searching for Viable Alternatives to Secure Basis for the Financial Sustainability of Forests, the Country Led Initiative in support of UNFF5 held in Costa Rica in 2005, the Regional Workshop on Financing Strategies and Mechanisms for Sustainable Use and Conservation of Forests in Latin America held in November 2005 in Brazil, and the Country Led Initiative on Financing for Sustainable Forest Management, in support of the UNFF, held in September 2008 in Suriname.

total land area, (iv) forest carbon stock as an environmental criterion and (v) rural population as a social indicator. A better option for the social indicator would have been the number of forest dependent people but such information is not available by country on a systematic basis. In addition, countries were divided into income groups applying the classification of OECD/DAC.

The analysis by country group was developed for

- forest cover groups (less than 20%, 20-40%, 40-60% and higher than 60%)
- deforestation rate groups (higher than 0.5%/yr, 0.1-0.05%/yr and other countries, i.e. zero deforestation rate or increase in forest area)

As it was not possible to elaborate consolidated quantitative data on forest funding flows by recipient, the analysis was based on the presence of bilateral and multilateral funding sources in individual countries. This qualitative approach obviously suffers from serious weaknesses but it complements the partial data on ODA recipients by OECD/DAC. Therefore, the study's gap analysis is qualitative and indicative by nature. The results also draw on some recent gap analyses (e.g. UNFCCC 2007, World Bank 2008a, Intercooperation 2007, GEF/GM (undated), etc.).

2. FINANCING SOURCES OF SUSTAINABLE FOREST MANAGEMENT

2.1 Sustainable Forest Management as a Financing Object

The dual nature of SFM derives from the fact that both global and national/local public goods and private profit can be generated by forest management; the former from forest based services such as biodiversity or climate mitigation and the latter from timber and non-timber forest products. This is both a challenge and opportunity for financing of SFM. Sharing of benefits and costs between the public sector and the owner in a privately owned forest management unit varies, *inter alia*, according to the type of forest resource and the chosen combination of management objectives (del Castillo 1999). In the traditional situation the private sector pays the costs of its own benefits and subsidies can be used to compensate for the public goods that are produced in their lands. These costs are therefore borne by the entire society. This can be changed if non-market benefits are compensated by beneficiaries who can be local, national or international. In this situation payments for environmental services (PES) can be market based or funded through other arrangements. PES is based on performance of the forest owners and managers in generating the agreed public goods and their costs may be additional expenditure or foregone lost revenue. Two main advantages can be achieved: (i) more equitable sharing of costs of public goods, and (ii) more predictable financing flow than through budgetary payments which are always subject to change in political priorities. Additional revenue for forest owners and managers should be sufficient to justify investments in the maintenance or enhancement of forest-based public goods. There is no general optimum financing strategy for financing of SFM which needs always to be worked out in specific country/local situations.

2.2 Classification of Financing Sources

Forest financing sources have been typically classified into public and private, national and international (Table 2.1). Domestic public funding may come from general government revenue and revenue from state owned forests. Private sources consist of forest owners, communities and forest industry, philanthropic funds and donors, as well as NGOs of various types (environmental, social, religious, etc.). In the case of many NGOs, funds are raised from external sources.

International public sources include bilateral aid agencies and multilateral financing institutions. Private sources are diversified consisting of institutional and individual investors, forest industry, various NGOs and civil society organizations (CSOs).

Payments for environmental services (PES) are a new market-based source for forest financing which are captured from the revenue of services sold or compensated by national or international sources which may be private or public and domestic or international. There are great expectations for market-based PES to become a substantial source of financing for SFM as they can internalize costs and benefits of maintenance of global and local public goods provided by forests.

Table 2.1 Overview of Forest Financing Sources

Financing sources		Domestic	International
Public	Governments	Investments by national and local governments through subsidies, soft loans, non-monetary incentives, direct investment.	Bilateral ODA (grants, recoverable grants, concessional loans, etc.) Multilateral ODA institutions: IDA, GEF, ITTO, FAO, UNEP, UNDP, GM, regional development banks (grants, investment lending, investment guarantees) Multilateral targeted programmes: PROFOR, FLEG, CGIAR, BPF, NFP (grants, co-financing) Multilateral financial institutions: IFC, IBRD, regional development banks
Private	Forest industry	Direct investments (incl. SMEs)	Foreign direct investment (FDI) Short and long term credit Portfolio investment Export credits Guarantee instruments Insurance and re-insurance
	Financial institutions and institutional investors	Short and long term credit Portfolio investment Targeted credits Insurance and re-insurance	Financial support to international NGOs and targeted beneficiary groups
	Philanthropic	Financial support to national NGOs and targeted beneficiary groups	Financial support to international NGOs (programme/project funding) Twinning arrangements
	Conservation NGOs (self-financing)	Financial support to national NGOs and targeted beneficiaries (project funding)	Financial support to international CSOs (programme/project funding) Twinning arrangements
	Other NGOs and civil society organizations (CSOs) (self-financing)	Financial support to national CSOs and targeted beneficiaries (project funding)	
Payments for environmental services (PES)		Watershed protection payments Carbon payments Fresh water supply payments Nature-based/eco-tourism Landscape, recreation and other payments for forest services	Carbon payments (regulatory & voluntary market) Biodiversity Nature-based/eco-tourism Bioprospecting

Sources: Moura Costa et al. 1999, Sander, pers. comm., author's elaboration.

3. EXISTING EXTERNAL SOURCES OF FOREST FINANCING

3.1 Overview

The available information does not allow compilation of a quantitative assessment of all the existing financial flows for forests from external sources. Based on the survey data and UNCTAD (2007) a partial picture can be established which may represent the best available summary on external financing to forests in developing countries. It shows that the current annual bilateral and multilateral flows to forests amount to about USD 1.9 billion and the foreign direct investment to forest industries to about USD 0.5 billion². Information on private investment by institutional investors, commercial banks and export credit agencies is not available and neither is it known how much the NGO and philanthropy sector contributes to forest financing. The partial information shows that the financing volumes from these sources have been increasing.

² Data on FDI in forestry is not available.

Table 3.1 External Financial Flows to Forests

Source	2000-02	2005-07	Change
	USD mill. at 2006 exchange rates and prices		%
ODA ^a			
- Bilateral	959.3	1,103.4	+15.0
- Multilateral	335.0	806.7	+140.8
Total	1,294.3	1,910.1	+47.6
Private sector			
- Foreign direct investment	400.0 ^c	516.0 ^d	+29.0
- Other private financing	..	..	Increase
NGO, philanthropic and others	.n.a.	n.a.	Probable increase

^a Appendix 3.1

^b UNCTAD 2007

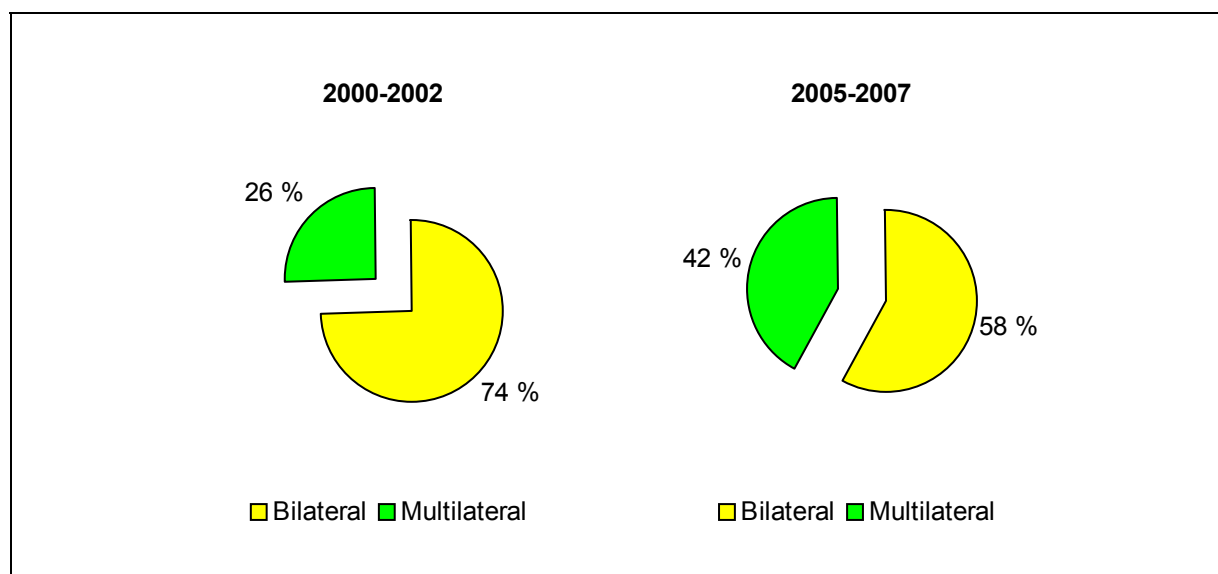
^c 2001-03 (based on Tomaselli 2006)

^d 2003-05

The level of ODA financing to forests includes about USD 700 million for forest conservation.³ In addition, the conservation NGOs and philanthropy focus on this thematic area in their funding.

In 2000-2007 the bilateral and multilateral financing flows have increased by almost 50% while in FDI to forest industry the increase has also been fast. There is a considerable annual variation in the financing flows in the case of many sources which record commitments rather than disbursements as the decisions on large projects create easily wide variation in the data.

Figure 3.1 Multilateral and Bilateral Financing to Forests in 2000-2007



³ Estimated based GEF and the main bilateral donors which included forest conservation in their data.

Table 3.2 Bilateral and Multilateral Financing Flows to Forests by Source in 2000-2007

Sources	2000-2002 USD mill./yr	Share % 2000-02	2005-2007 USD mill./yr	Share % 2005-07	Change %
Bilateral	2006 exchange rates and prices				
European Commission	101.2	7,82	115.7	10,48	14,25
Finland	20.3	2,12	12.7	1,15	-37,42
France	21.3	2,22	19.3	1,75	-9,17
Germany	130.9	13,65	126.0	11,42	-3,75
Japan	329.0	34,29	530.5	48,08	61,25
Netherlands	111.7	11,65	88.5	8,02	-20,81
Switzerland	30.2	3,15	30.6	2,78	1,36
United Kingdom	39.2	4,09	28.7	2,60	-26,76
United States	95.9	10,00	97.6	8,85	1,77
Other	79.5	8,29	53.8	4,87	-32,40
Subtotal	959.3	100,00	1,103.4	100,00	15,02
Multilateral					
AfDB	35.8	10,68	72.7	9,02	103,24
AsDB	6.9	2,05	12.4	1,54	79,90
GEF	104.1	31,07	109.4	13,57	5,14
IDB	2.1	0,63	9.1	1,13	331,28
ITTO	16.6	4,96	16.3	2,02	-1,78
IFC	78.0	23,28	324.0	40,16	315,38
WB	91.5	27,31	262.7	32,56	187,07
Subtotal	335.0	100,00	806.7	100,00	140,80
Grand total	1,294.3		1,910.1		47,57
Bilateral share %	74.12		57.77		
Source: Appendix 3.1					

The growth in the external financing flows to forests has partly been a result of increasing engagement of the multilateral sources as their share of the total public financing increased from 26 to 42% during the study period (Figure 3.1). The multilateral sources accounted for three quarters of the total absolute increase in the aggregate public flows during the study period. However, also bilateral ODA has increased albeit at a slower rate.

3.2 Bilateral ODA

3.2.1 Volume and Past Trends

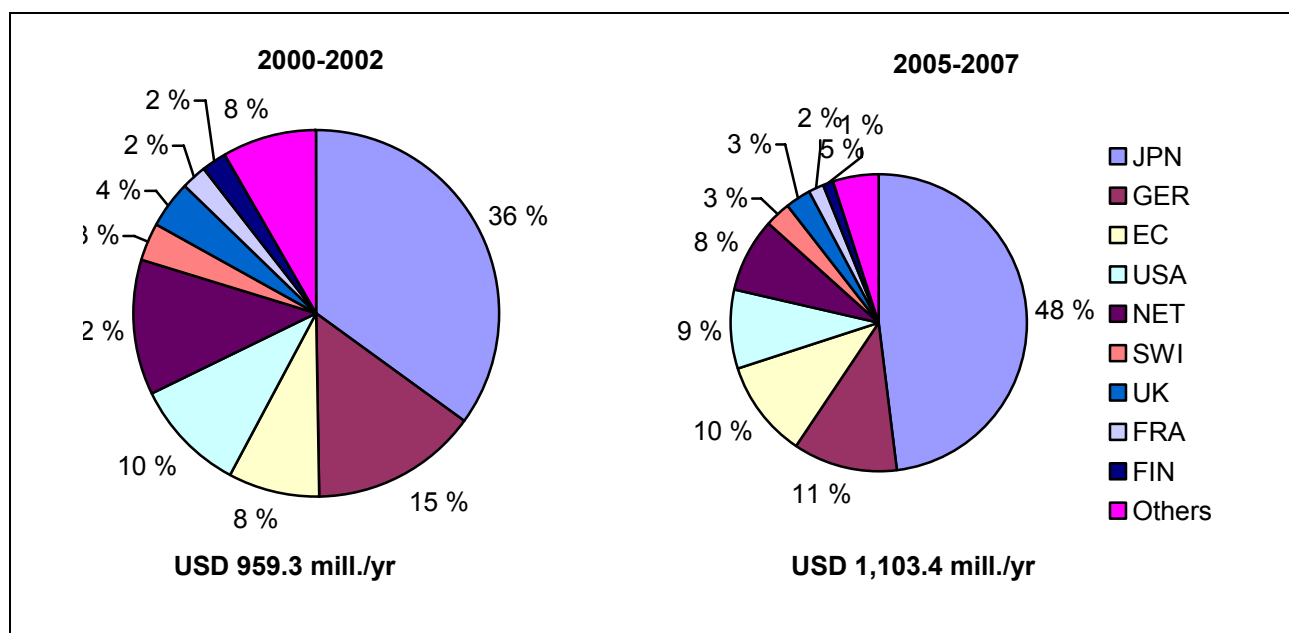
Bilateral ODA to forests mainly comes from relatively few sources (Table 3.2 and Appendix 3.1). About 95% is provided by nine donors (Japan, Germany, the European Community, USA, the Netherlands, Switzerland, the UK, France and Finland). Japan's share is overwhelming accounting for 48% of the total in 2005-2007 or significantly higher than in 2000-2002 when it was 35% (Appendix 3.1).

The growth in the bilateral ODA was 15% in the 2000-2006 period. Japan's contribution (including forest conservation as well as concessional loans and credits) increased by 61% and, without it, the total bilateral ODA would have declined by about nine per cent⁴. Six other donors also recorded some increase in forest ODA but only the EC and US volumes are significant. In all the other donor countries the forest ODA declined in real terms. The declines can be explained by the reduced allocation to project and programme funding and increasing role of budgetary support the sectoral allocation of which is done by the recipient country. There is also a general trend to consider forests no more as a self-standing priority but as part of the climate change and other environmental agenda. Poverty link of

⁴ Japan is the only country which has included concessional loans and credits in its data.

forests is weakly recognized in country replies of the survey. Another reason to explain reduction in bilateral ODA to forests is the increasing use of multilateral agencies as channel because these have a competitive advantage in those recipient countries where bilateral donors cannot effectively operate due to governance constraints (cf. ETFAG 2007).

Figure 3.2 Sources of Bilateral ODA 2000-2007



3.2.2 Comparison between the OECD/DAC and Survey Data

It is very difficult to obtain consistent and reliable data on ODA to forests for several reasons. The survey carried out for this study showed many inconsistencies in the raw data received and efforts were made with many respondents to correct them. The additional survey was carried out as there has been a perception that the DAC Credit Reporting System (CRS) which is routinely used to detect ODA to forestry gives only a partial view. Indeed, the DAC reported information (OECD 2008a) does not appear to correspond to the actual funding flows due to weaknesses of DAC members reporting systems. There are also several gaps in the past data. Reliable estimation of ODA levels based on DAC data is therefore impossible.

Furthermore, forest components in projects and programmes which are primarily targeted at rural development, natural resource management, biodiversity or environmental management are not recorded separately and are therefore another reason for underreporting. In their statistical reporting, DAC Members are requested to assign for each aid activity a sector of destination, and within that sector a detailed purpose code, which identifies "the specific area of the recipient's economic or social structure which the transfer is intended to foster". DAC's thematic areas of "forestry" includes "forestry policy and administrative management", "forestry development", "fuelwood/charcoal", "forestry education/training", "forestry research" and "forestry services" (OECD 2000). This is a narrow interpretation in the context of the NLBI implementation which represents a holistic and therefore much broader approach to SFM.

In terms of DAC's thematic areas, "forestry development" received almost two thirds (63%) of the total followed by "policy and administrative management" (33%) with only token contributions to other activities. It is apparent that the applied DAC breakdown for forestry no more represents a feasible way to analyze forest ODA by type of strategic intervention.

Table 3.3 compares the DAC data for "forestry" with information on "forests" collected for this study from donors. It illustrates possible magnitude of the problems. The survey data suggest that only

about a half of the total funding volume is recorded by the DAC data. The DAC-reported bilateral donors' contribution to biodiversity amounts to about USD 2.7 billion per year (OECD 2008b). Only about USD 313 million is reported to be allocated to forest biodiversity. The survey data suggests that forest biodiversity ("forest conservation") received about USD 700 million in 2006 from bilateral sources⁵.

Table 3.3 Comparison of Bilateral ODA to Forests and Biodiversity

Sector	2003/04	2005/06	Change
	USD mill. at 2006 exchange rates and prices annual average		%
Forests			
- Forestry ODA according to DAC ^a	441.8	455.1	+3.0
- Forest ODA according to the survey data ^b	972.7	1 075.5	+10.6
Biodiversity total	2 125.6	2 686.8	+26.4
- Forest biodiversity ^c	..	312.8 ^d	

^a Source OECD (2008a)

^b Does not include all contributions to forest conservation. Excludes the EC which was not included in the DAC data.

^c Source: OECD (2008b)

^d Average for the period of 2003-2006

The growth rates in ODA may be more easily compared than levels as the DAC information by sector is reported to be consistent over time (e.g., OECD 2000) and the data for this study's survey was also collected in a consistent manner over time. The available information on biodiversity funding allows us to compare only two points of time (annual averages for 2003-2004 and 2005-2006). The information shows that during this two-year period the DAC recorded biodiversity funding increased by 26.4% while the increase in the survey data on forest ODA was only 10.6%. The DAC recorded ODA to forestry increased even less. It is therefore apparent that biodiversity funding has been growing faster than forest funding over the whole study period.

The comparison shows that any estimations of the forest ODA need to be interpreted with care and with a clear understanding on what is actually covered. There is also a need to consider measures to improve DAC members' reporting practices on forests, including multilateral sources on which several important gaps exist.

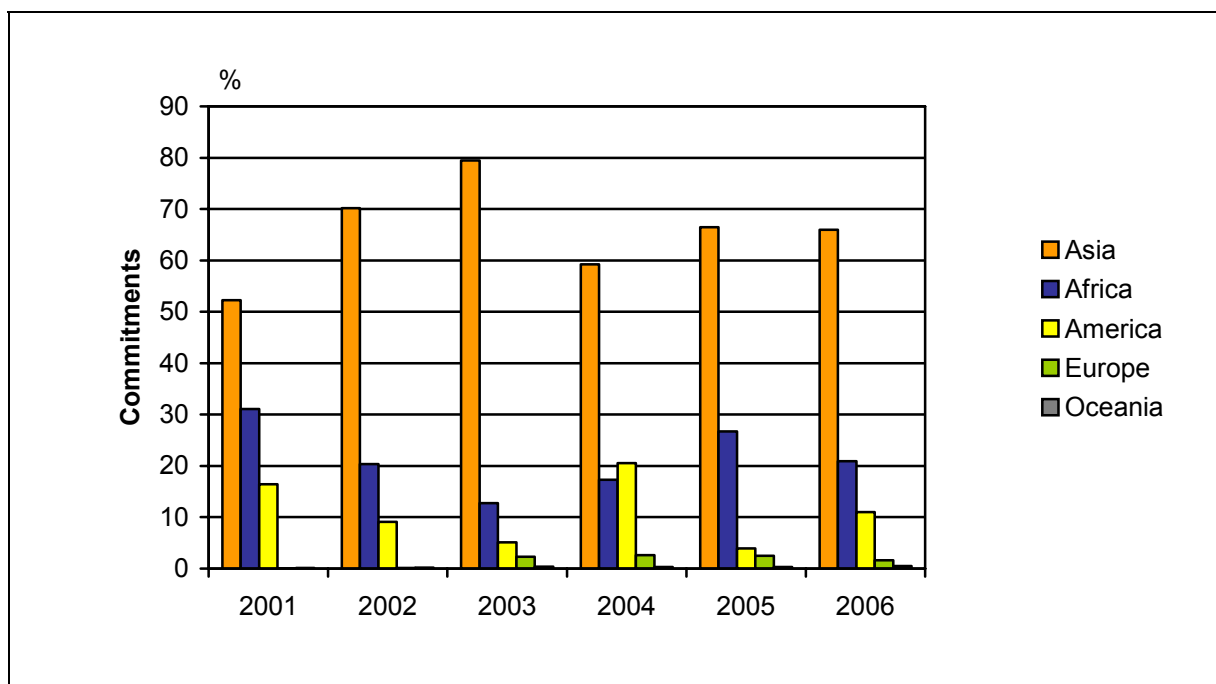
3.2.3 Recipients of Bilateral ODA

The survey data did not allow elaboration of a comprehensive analysis of the forest ODA breakdown by recipient countries (cf. also section 6.2 for the analysis of the survey data) and therefore the partial DAC data (OECD 2008a) had to be utilized. Since 2000, two thirds of the cumulative forestry ODA as recorded by DAC has been allocated to Asia, only 20 % to Africa and 11% to Latin America (Figure 3.3)⁶. Asia's share peaked in 2003 when it reached almost 80% of the total. In terms of income level, the least developed countries received 18% of the total and the other low income group another 39% (Figure 3.4). The rest (43%) was channeled to middle income countries whose shares show a slightly declining trend in the total.

⁵ The coverage of the DAC data in the total forest biodiversity funding appears to be less than 50%.

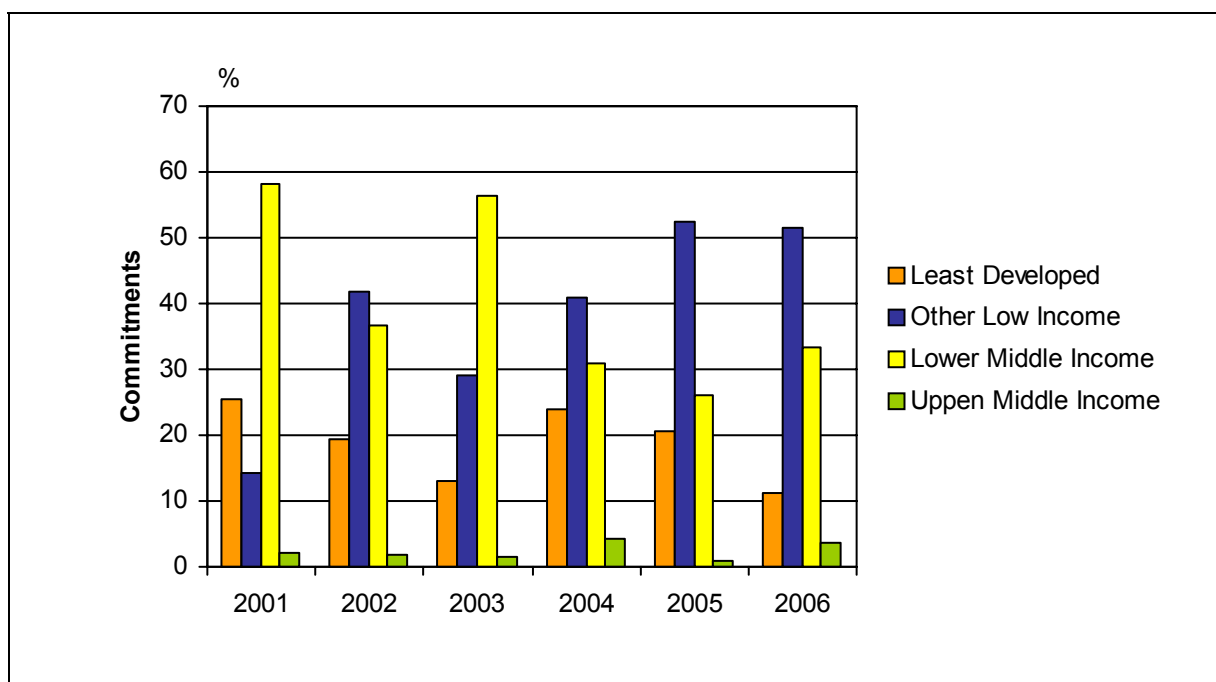
⁶ These figures refer mainly to bilateral ODA.

Figure 3.3 Recipients of ODA by Region 2001-2006



Source: OECD (2008a)

Figure 3.4 Country Recipients of ODA by Income Group 2001-2006



Source: OECD (2008a)

In 2006 India absorbed 22% of the total forestry ODA, followed by China (13%) and Viet Nam (12%). Together with Indonesia, Cameroon, Tanzania, Bolivia, Brazil, Colombia and Honduras, these ten countries received two thirds of the total forestry ODA which is therefore very concentrated and significantly more so than in the case of ODA to biodiversity. However, the four largest ODA recipients are the same countries in both cases.

Table 3.4 Top Ten Recipients of DAC-Recorded ODA to Forestry and Biodiversity

Top ten recipients	Forestry ^{a)} USD million	Share %	Biodiversity ^{b)} USD million	Share %
India	120	22.3	325.8	13.5
China	72	13.4	454.3	18.9
Vietnam	67	12.5	93.4	3.9
Indonesia	25	4.6	70.9	2.9
Cameroon	20	3.7	..	..
Tanzania	14	2.6	..	..
Bolivia	11	2.0	..	..
Brazil	10	1.9	84.5	3.5
Colombia	9	1.7	..	..
Honduras	9	1.7	..	..
Ghana	..	..	62.0	2.6
Morocco	..	..	55.8	2.3
Bangladesh	..	..	48.0	2.0
Kazakhstan	..	..	45.8	1.9
Nicaragua	..	..	35.8	1.5
Others	182	33.8	1 129.9	47.0
Total	538	100.0	2 406.2	100.0

a) 2006; source OECD (2008a)

b) Annual average 2003-2006 (2006 prices and exchange rates); source OECD (2008b)

3.2.4 Future Trends

In addition to traditional grant financing for targeted projects and programmes, bilateral donors have introduced new instruments such as e.g. sector-wide approaches, programme support, budgetary support, debt-for-nature swaps. They are a different type of instrument from the others as they are aimed at increasing resources to targeted forest conservation in the recipient country. Box 3.1 demonstrates that they can have a substantial impact on the funding flow in recipient countries.

Box 3.1 Debt for Nature Swaps of the United States

The US debt-for-nature funding is implemented under the Tropical Forest Conservation Act (TFCA) of 1998 and it involves debt owned to the US Government (not commercial debt). Since 2000, 13 debt reduction agreements have been concluded with 12 developing countries in Africa, Asia and Latin America. These agreements will together generate a total of USD 163 million over the life of the agreements, which range from 10-26 years. At present, these bilateral debt reduction programs together generate about USD 9 million annually for tropical forest conservation projects covering protection of 20 million hectares of biologically rich tropical rain forests in recipient countries. The funding volume has been steadily increasing and will continue to increase in the future as the newer programs become operational (e.g. Costa Rica, Guatemala, Paraguay and Botswana).

For partner countries the debt-for-nature swaps provide long-term, predictable funding for forest conservation which is arranged through a strong private/public partnership in managing TFCA programs. NGOs such as the Nature Conservancy, Conservation International and the World Wide Fund for Nature together have contributed more than USD 9.6 million to the TFCA deals in some of the countries in the program indicating a leverage effect.

Source: McMurray 2008

The programmatic approaches in bilateral ODA represent a shift towards more coordinated and more upstream mechanisms of aid delivery. This is in line with the principles of ownership, alignment, harmonization and management for results of the Paris Declaration on Aid Effectiveness. The underlying assumption is that aid effectiveness can be improved if fragmentation in delivery can be reduced through joint forms of assistance resulting in lower transaction costs for both recipients and

donors. The programmatic approaches are also expected to contribute to policy coordination and coherence hence improving locative and technical efficiency of the use of public resources (ODI 2006). Nfps and national forest financing strategies have potential to introduce programmatic elements in ODA but the detailed discussion of aid instruments in the forestry sector is beyond the scope of this study.

Although the traditional forestry ODA in the future might not significantly increase or could even decline in some donor countries, funding through new instruments and various international and regional initiatives (cf. section 5) is likely to increase in the future, probably significantly. A higher proportion of the ODA may also be channeled through multilateral institutions in line with the trend of the last few years. The increased funding will be linked to the broader climate change and conservation agenda. Several countries such as Australia, Germany, Finland, Japan, the Netherlands, Norway, Sweden and the United Kingdom have made new commitments or are exploring means how to increase forest ODA or to contribute to new forest-related instruments of the climate change initiatives. The latter will probably be decisive for future upward trends in support to forests through bilateral ODA in spite of the fact that some donor countries expect an increase in “forest” funding. The governance agenda is also contributing to international assistance and will continue to do so, particularly through the EU FLEGT initiative, but funding volumes will be limited compared to what may be mobilized through climate instruments. Many donors are also working to link traditional ODA with other issues (food and energy security, trade, private investment, defense, security, immigration, etc.) within the sustainable development context.

In conclusion, as a whole, the bilateral ODA to forests is likely to increase (directly and indirectly) in the future for a number of reasons but it may not necessarily be recorded as specific support to forests. Funding flows through new instruments and approaches are likely to benefit middle income countries more than low income countries. Maintenance of the focus on the least developed countries will be a challenge as many of them are lacking preconditions for effective aid and other external financial flows.

3.3 Multilateral Sources

The main source of multilateral financing to forests is the World Bank Group and its share in the total has increased from 51% to 73% in 2000-2007 (Figure 3.5). GEF's share has declined from 31% to 14% in the same period. Among the regional development banks, the African Development Bank (AfDB) has been the largest source of forest funding and its share has also increased. The Asian Development Bank (AsDB) and the Inter-American Development Bank (IADB) have been marginal sources during this decade while in the 1990s their role was more substantial. ITTO's contribution was 5% of the total multilateral financing in 2001 but it has dropped to 2 percent due to constraints to increase contributions from donors. Consolidated information on other multilateral sources is not available but their volumes are assumed to be marginal.

3.3.1 The World Bank Group⁷

More than a half (55%) of the World Bank Group's financing to forests has come from the International Finance Corporation (IFC) in the form of equity and credits to private sector enterprises. The contributions of the International Development Association (IDA) and the International Bank for Reconstruction and Development (IBRD) have also increased during the study period, albeit less than that of IFC.

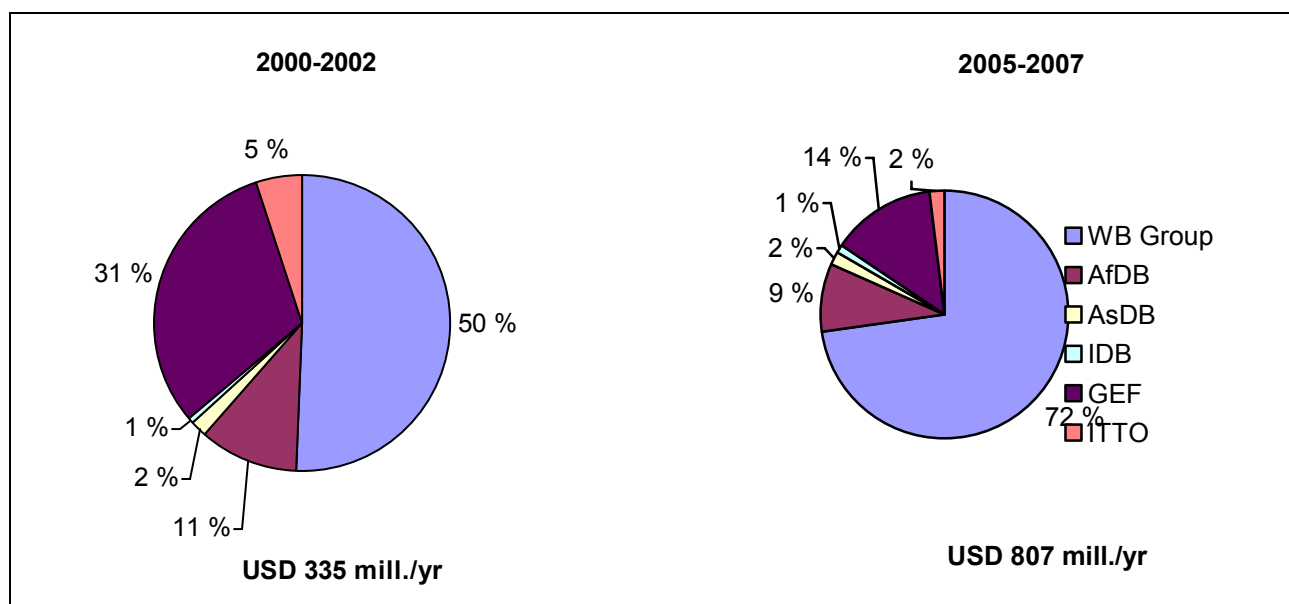
IBRD/IDA

The IBRD/IDA forest specific financing has been declining since the early 1990s when it was at the level of USD 600 million per year⁸. The Bank's Forest Strategy approved in 2002 was targeted at an increased role in forests by addressing poverty reduction, integration of forests in sustainable development and enhancement of global environmental services. The strategy has probably contributed to recent positive developments and an upward trend in forest financing can be observed

⁷ This section is partly based on Contreras Hermosilla & Simula 2007 and internal WB data.

⁸ The highest volume of the WB lending in forests was achieved in 1994 when it reached 888 million.

Figure 3.5 Multilateral Financing to Forests 2000-2007



since 2001. In FY 2007⁹ the financing volume reached USD 512 million. The growth is partly associated with fairly large new sector investments, and components in some sector adjustment and structural adjustment operations that focus on forests in Africa and Latin America.

The Bank's investments include stand-alone forest projects and projects which contain significant forest components¹⁰. The latter can be equally or often more significant in comparison with stand-alone forest projects. Forest components in other projects accounted for 39% of the total forest lending in 2000-2005. These projects are mainly related to biodiversity (68% of the number of projects), poverty reduction (12%), rural development (8%), energy (8%) and natural resource management (4%). Stand-alone forest projects cover a broad range of thematic areas including sector reforms, community forestry, plantation development, payments for forest environmental services, etc. There is an increased recognition of the role of forest resources for poverty reduction and in the maintenance of global public goods in recent Bank financing e.g., in India, Mexico and Lao People's Democratic Republic.

The regional distribution of the WB lending shows that the East Asia-Pacific region has been the largest recipient, partly due to large projects in China. Africa's share has been steadily increasing and represented 41 % of the total IBRD/IDA financing in 2006. In the past China and India have had large programs in forestry and may draw on the Bank's future large-scale lending as well. Latin American and Caribbean countries obtain slightly less than a fifth of the WB's forest-related lending.¹¹ However, some important forest countries have not taken loans from the Bank such as Indonesia, Malaysia and Thailand which may be interpreted as lack of willingness to borrow to forestry or lack of awareness on sectoral opportunities.¹² In Cambodia and Papua New Guinea, weak forest governance has limited the Bank's role.

In addition to sector loans and investment project lending, Development Policy Loans (DPLs) have become increasingly important. By 2006 the Bank had approved 11 of these loans with forestry

⁹ July 2006 to June 2007

¹⁰ These projects are not classified as forest investments but their forest components are included in the Bank's forest portfolio.

¹¹ The Eastern Europe-Central Asia region had a rapid growth in Bank-financed investment in forests after the disintegration of the Soviet Union in the early 1990s. Since then many countries have become EU members. Bank participation in the large forest sectors of Russia and the Ukraine, and in countries of Central Asia could however increase in the future.

¹² PRSPs in these countries do not make reference to forests (Appendix 3.1).

components totaling some USD 94 million¹³. These DPLs have been more frequently employed in Africa.

International Finance Corporation

IFC, the private sector arm of the World Bank Group, promotes sustainable private sector investment to foster economic development and reduce poverty. IFC finances investments with its own resources and by mobilizing capital in the international financial markets. In addition to equity and loan financing, IFC also provides technical assistance to its clients. IFC has invested more than USD 2.8 billion to help finance 132 forestry sector projects. IFC-leveraged investments have averaged in excess of USD 1 billion per year¹⁴. Thus, the influence of IFC in forest sector investments is significant.

The size of projects varies between USD 1.5 million and USD 500 million. The pulp and paper industry accounts for 70% of the total cumulative investment while 22% was directed at the wood-based panel and engineered wood product industries. Some smaller investments have been made in sawmilling and furniture production. The share of forestry projects (plantations) is increasing and about a half of IFC projects have included an integrated forestry component.¹⁵

IFC has not invested in projects requiring raw material from natural tropical moist forests procured in the same country¹⁶. This is due to (i) the shortage of sustainable private operations and (ii) the reputational risk for IFC due to the apparently inevitable criticism of some advocacy NGOs which may emerge on any timber production investments based on natural tropical forests. The specific concerns raised include possible takeover of indigenous peoples' lands, displacement of peasant farmers, unduly capital-intensive solutions in using land from the perspective of employment creation, political marginalization of smallholders in land-use planning, lack of adequate participation, and inadequate impact assessments. The sensitivities related to these legitimate concerns have been exemplified by the World Bank's natural forest management investments in Cambodia, DRC, and PNG but also in some projects involving plantation development. It is not probably well understood that proper implementation of the Bank's and IFC's safeguards can effectively eliminate undue adverse impacts related to these concerns (World Bank 2008).

Geographically, Latin America has attracted most IFC financing (38%) followed by Asia (31%) and Eastern Europe (23%). Africa is clearly lagging behind (8%). A total of 49 countries have received IFC financing but the ten largest ones account for almost 70% of the total¹⁷.

The main drivers for the increase in IFC's portfolio have been strong demand growth for forest products in emerging markets, competitive cost advantage in production of plantation wood in the tropics, and associated relocation of industrial capacity from developed countries which has benefited several developing countries and countries in transition. An additional factor in forestry investments has been transfer of the resource management responsibility from the state to the private sector in many client countries which may partly explain limited growth in the World Bank's portfolio of self-standing forest projects. The availability of IFC financing for sustainably managed operations by responsible private operators, along with the continued greening of the demand for forest products (both among public and private buyers), can make a major contribution to reducing logging by illegal operators. In plantation development the issues are somewhat different but joint action would also be highly desirable to mainstream investments which are financially profitable, environmentally sustainable and socially responsible.

Multilateral Investment Guarantee Agency

The Multilateral Investment Guarantee Agency (MIGA) promotes foreign direct investment by offering political risk insurance to investors and lenders. It also provides technical assistance to help countries

¹³ In FY 2008 the Bank approved a large USD 500 million DPL for climate change in Mexico but its forestry component has not been defined as yet.

¹⁴ IFC's annual commitments amount averaged about US\$ 250 million per year (FY03-06). As the leverage factor is reported by IFC to be about five, the total investment of these projects would be in the range of USD 1 to 1.5 billion.

¹⁵ As an example, there is on going work to prepare a strategic plan for the pulp and paper industry in Ukraine.

¹⁶ Some IFC investments in timber processing in China have been made in companies, which import tropical timber from other countries from the region. In at least one company, IFC has provided technical assistance to build up a certifiable environmental management system to control the origin of raw material and promote forest certification among suppliers.

¹⁷ Brazil, Russian Federation, China, Chile, Colombia, India, Turkey, Mexico, Pakistan and Argentina.

attract and retain this investment. In the forestry sector, MIGA's political risk guarantees have only been applied in two pulp and paper mill projects in the Europe-Central Asia region in the late 1990s¹⁸. The instrument could be applied more extensively as the long time horizon in forestry investments is compatible with the political risk guarantees. Credit financing in forestry investments in many client countries is constrained by lack of nationally available insurance services for forests. MIGA has recently started an SME investment program which is relevant for forestry enterprises. MIGA has also a substantial potential in providing guarantee services related to forest carbon projects including afforestation, reforestation, and avoided deforestation to improve the quality of respective carbon credits.

The BioCarbon Fund

The World Bank has set up the BioCarbon Fund (BioCF) to pilot and demonstrate projects that sequester or conserve carbon in forest and agro-ecosystems. This public/private initiative aims to deliver cost-effective emission reductions, while promoting biodiversity conservation and poverty alleviation. In addition to its central objective of reducing emissions, the BioCF has a strong equity connotation. Community groups, private companies, public agencies and NGOs can propose projects, implement them and receive funds in exchange for emission reduction credits. The Fund is consistent with the objectives of UNFCCC, CBD UNCCD and the GOFs. The Fund has raised a total of USD 91.9 million and its two tranches are closed to new fund participation.

Based on 150 project proposals, the first BioCF tranche has developed a diversified portfolio of 18 projects worth USD 22 million. By 2007, the Fund had signed 15 emission reduction agreements. Most of the projects (97%) deal with afforestation and reforestation in different forms: commercial plantations (36%), community reforestation (26%), environmental restoration (21%), assisted regeneration (6%), as well as agriculture, silvopastoral systems and agroforestry (combined 8%). Avoided deforestation has also been piloted (3%).¹⁹

The BioCF portfolio has a strong participation of Latin America (39%) and Africa (34%) while Asia is less developed (13%)²⁰. The relatively large share of the Sub-Saharan Africa in the portfolio is partly a result of deliberate promotional effort of the BioCF but it also demonstrates the potential that the region's poor rural communities could have in the international carbon market through bio-carbon trade as they have large areas of degraded land available which are in need of rehabilitation through afforestation/reforestation.

BioCF is a promising piloting instrument which was precedent for the launching of the Forest Carbon Partnership Facility (see section 5.2.4). BioCF's activities have a significant potential for mainstreaming bio-carbon in the international carbon offset market but it is obviously able to meet only a fraction of the potential supply of eligible projects.

World Bank's Forest-Related Global Programmes

The World Bank has presently three global partnership programmes to enhance the implementation of the 2002 Forest Strategy as the Bank alone cannot achieve the targets set²¹. These programmes are (i), the Program on Forests (PROFOR), (ii) the Forest Law Enforcement and Governance (FLEG), and (iii) the Critical Ecosystem Partnership Fund (CEPF). The first two are implemented by the Bank itself while the third one is managed by an NGO, Conservation International (see Box 4.2 in section 4.5.2).

FLEG is a partnership based on a broad coalition of the international assistance institutions, governments, non-governmental organizations, institutions of the civil society and the private sector interested in pooling resources and joining efforts to combat illegal activities and improving the quality of governance in the forest sector. Within this coalition, the Bank has a central convening, organizing and coordinating role that it discharges through the FLEG Programme which is targeted at mobilizing policy makers and stakeholders for strengthening of forest governance and reduction of illegal

¹⁸ MIGA has recently considered participation in a pulp mill project in Kalimantan, Indonesia, but due to risks related to the raw material supply, an agreement was not reached.

¹⁹ Data in this section is based on The World Bank (2007). Carbon Finance for Sustainable Development 2007.

²⁰ The balance has gone to Eastern Europe and Central Asia.

²¹ The global programme WB/WWF Alliance for Forest Conservation and Sustainable Use was started in 1999 and completed in 2007.

activities. The Programme presently focuses on promoting national-level measures through specific action plans.

PROFOR is a multi-donor partnership program formed to enhance the contribution of forests to poverty reduction, sustainable economic development and protection of environmental services by carrying out analytical work and thus improving information and creating knowledge on livelihoods, governance, finance and cross-sectoral cooperation issues. PROFOR has four interrelated themes: (a) a livelihoods approach to poverty reduction, (b) forest governance, (c) innovative approaches to financing sustainable forest management, and (d) cross-sectoral impacts affecting forests. PROFOR's cumulative funding by donors was USD 8.2 million at the end of 2006 and the disbursements were in the order of USD 1.0 to 1.4 million per year in 2004-2006.

In collaboration with FAO and the World Conservation Union (IUCN) and support from International Institute for Environment and Development (IIED), the World Bank is supporting the implementation of the Growing Forest Partnerships (GFP) initiative²², which was informed by an independent, global consultation among about 600 forest stakeholders, including a special survey of indigenous peoples. The aim is to facilitate bottom-up, multi-stakeholder partnership processes in developing countries to identify national priorities, to better access the increasing forest financing being made available through a wide variety of international means and mechanisms (e.g. carbon finance, private sector investments, ODA, non-conventional funding sources, etc.). The GFP also aims to provide a platform to ensure that marginalized, forest-dependent groups can participate in the formulation of national priorities and be included in the international dialogue on forests. The GFP will work through locally-based institutions and will build on existing partnership structures. The World Bank supports this initiative with start-up funding of USD15 million for the first three years through its Development Grant Facility.

3.3.2 The Global Environment Facility

The Global Environment Facility (GEF) finances "new and additional grant and concessional funding to meet the agreed incremental costs of measures to achieve agreed global environmental benefits". GEF is the only multi-convention financing facility in existence and is now the major source of funding specifically supporting the Convention on Biological Diversity (CBD) and the UNFCCC. The GEF also provides support to the implementation of the UN Convention to Combat Desertification (UNCCD).

Since 1991 the scope of GEF's forest-related activities has gradually expanded from the focus on biodiversity to include integrated ecosystem management, combating land degradation through sustainable land management, and (since 2007) sustainable forest management. The accumulated funding to forest-related projects (236) by 2005 was USD 1,192 million (Table 3.5)²³. In view of SFM the GEF support has been categorized under three main groups:²⁴ forest conservation (53% of the total funding), sustainable use (12%) and mixed land uses (35%). The relatively high share of biodiversity in the portfolio (35%) is explained by its long-standing role in GEF's portfolio. The earlier projects focused on protected areas as the main tool for biodiversity conservation but there is a clear trend towards more support to sustainable forest management outside of protected areas (GEF 2005).

GEF's Resource Allocation Framework (RAF) pre-allocates resources to countries according to their potential contribution to global environmental benefits and according to their overall performance. RAF is aimed at improving the allocation of resources on a strategic basis, and increasing the transparency of operations and results. The downside of this change is that many countries with substantial needs for GEF support may be left with marginal allocations, and countries that do receive major allocations may not give a due priority to forest-related projects. In addition, the RAF for Climate Change focal area does not include GHG emissions from deforestation and forest degradation. Allocations would look significantly different had this issue been considered. Hence, forest-relevant countries do not receive appropriate funding through the Climate Change focal area.

²² Earlier called Global Forest Partnership

²³ Forest management in the wider landscapes beyond forests, i.e., where forest management impacts directly with other land uses and where projects explicitly address this interaction. The percentages have been calculated based on data in GEF (2005).

²⁴ It should be noted that the figures refer to the total value of projects, not components that were specifically allocated for forests.

Table 3.5 GEF Financing Related to SFM from 1997 to 2005

Project type	No. of projects	USD millions	%
Forest conservation (primarily protected areas and buffer zones)	109	623.3	53
Sustainable use of forests outside protected areas (primarily in forest production landscapes)	38	143.3	12
SFM in wider production landscapes beyond strictly forests	89	416.4	35
Total	236	1183.0	100

Source: GEF (2005)

In November 2007, the GEF Council approved a Sustainable Forest Management Programme to address this area of intervention in a more comprehensive and coordinated way than in the past. The projects falling under this category will contribute to the implementation of the forest related commitments and programmes of work of CBD, UNFCCC and UNCCD. In addition, the Programme will, in particular, support achievement of the global biodiversity target 2010 set by CBD and the Global Objectives of Forests set by UNFF. This means that countries are encouraged to submit projects that cover one or more focal areas (Biodiversity, Climate Change and Land Degradation) promoting approaches which are multi-sectoral, ecosystem based and consider forests within the wider production landscape (GEF 2007).

The areas that can be supported by the SFM Programme include (i) sustainable financing of protected area systems at the national level, (ii) strengthening terrestrial protected area networks; (iii) strengthening the policy and regulatory framework for mainstreaming biodiversity; (iv) fostering markets for biodiversity goods and services; (v) supporting SFM in the wider landscapes; (vi) promoting sustainable biomass production; (vii) prevention, control and management of invasive alien species; (viii) management of land use, land-use cover change and forestry (LULUCF) as a means to protect carbon stocks and reduce greenhouse gas emissions (GEF 2007). During the first nine months²⁵ of the SFM Programme implementation, the GEF has committed about USD 152 million and leveraged about USD 482 million in co-financing. GEF investments in SFM during the fourth replenishment period may exceed USD 250 million (corresponding to about USD 60 million annually) or about a quarter of the total GEF SFM-related funding in 1991-2005. Of the current portfolio, the Biodiversity focal area accounts for 58%, the Land Degradation focal area 24% and Climate Change 15%. The SFM Programme clearly opens up new opportunities for GEF funding (particularly elements (v), (vi) and (viii) above) but the emphasis will be in biodiversity conservation and forests as part of sustainable land use for production of global public goods.

Another new GEF instrument is the Tropical Forest Account (TFA) which has been established to encourage greater investment attention in tropical forest management by forest rich countries. By investing the resources allocated to them under RAF, countries with significant tropical forest resources can leverage additional funds from GEF. Countries in the Congo Basin (consisting of 6 countries), the Amazon (9) and New Guinea (2) are already in the process of developing measures to make use of this mechanism. TFA can also be directed at capacity development support for a future financing scheme under the Kyoto Protocol on reduced emissions from degradation and deforestation (REDD), and to implement related SFM strategies. The purpose is to immediately raise additional USD 50 million to the three regions. A USD 50 million TFA investment would result in excess of USD 100 million becoming available for SFM projects from existing country specific balances under the GEF-4 replenishment (excluding co-financing). More can potentially be mobilized from country allocations if additional TFA resources become available from donors (Fonseca 2007).

GEF's leverage factor is important and in the SFM Programme projects funding created 3.1 times more co-financing from bilateral donors and multilateral and regional development banks²⁶. Donors have been interested in the SFM Programme and for the multilateral development banks' lending projects, GEF funding is strategically important by softening the cost of credits to client countries.

²⁵ As per September 2008

²⁶ The leverage factor in SFM related GEF funding in 1996-2005 was 2.8. calculated based on data in GEF (2005).

The downside of GEF grant-blended lending has been that transaction costs tend to be high. On average, it has taken almost five years to process a full-sized GEF biodiversity project from its entry into the pipeline to implementation²⁷. Even in the case of medium-sized projects, the process has taken up to two years. The long gestation process carries various risks as external factors may change dramatically in the intervening period. The high transaction costs have been present both in the GEF project cycle management and in the preparation of projects by country administrations (GEF 2002). Nonetheless, the significant contribution of the grant component may well more than compensate the higher transaction costs of GEF blended projects for recipient countries (Contreras Hermosilla & Simula 2007). GEF has recently revamped its project cycle to address these concerns. The time lags from project idea to final approval have been reduced to maximum 22 months and procedures have been simplified.

3.3.3 Regional Development Banks

The available information on forestry financing by regional development banks²⁸ suggests that their combined funding volume in 2000-2006 totaled USD 457 million or about USD 65 million per year (Table 3.2). This is only about a quarter of the World Bank Group's financing during the same period. The largest source has been the African Development Bank (AfDB) with a portfolio of USD 352 million followed by the Asian Development Bank (AsDB) (USD 65.6 million). During the recent years, the Inter-American Development Bank (IADB) has generated only a smaller lending volume in forestry (USD 40 million) in spite of its active work to promote investment by the private sector. While the annual lending volumes by AsDB and IADB have been rather stable (about USD 9 million and USD 6 million, respectively), AfDB's new commitments have varied extensively in the range of USD 13 to 138 million per year. Only AfDB has recorded a clearly growing trend in its forestry financing and it appears that the region's demand will continue to increase.

AfDB's portfolio in the forest sector has benefited in 21 countries. The projects have covered industrial plantations, conservation, restoration of degraded forests, agroforestry and institutional capacity. One of the key constraints in AfDB's financing has been long project cycles averaging 7.4 years (against IDB's 4 years and WB's 3.5 years). The Bank also gives emphasis on public-private partnerships, management planning, regulatory frameworks, research and rural bio-energy (Moussa 2007).

Regional development banks are highly demand driven and there are significant differences in the public sector's willingness to borrow for forestry. In the case of Latin America IDB has invested more in disaster relief and other natural resources activities than forestry for the obvious reason that in many countries the driving force in forestry investments has shifted to the private sector.

3.3.4 ITTO

The International Tropical Timber Agreement (ITTA) is a legally binding instrument which provides for financing mechanisms for the sustainable management of tropical forests. Its examination from the perspective of lessons learned is therefore particularly relevant. Presently ITTA, 1994 provides for (i) an Administrative Account for assessed contributions by all members to meet the administrative expenses, and (ii) a Special Account for project and pre-project financing from voluntary contributions (mainly earmarked). In addition, the Bali Partnership Fund (BPF) has been set up to assist producer members in making the investments necessary to achieve Article 1(d) of ITTA, 1994 ("to enhance the capacity of members to implement a strategy for achieving exports of tropical timber and timber products from sustainably managed sources by the year 2000")

Since 1987, the ITTO has mobilized USD 314 million to finance some 800 projects and activities and since 2000, the yearly allocations are in the region of USD 14-18 million. Funding has remained at this level during the last 10 years but in recent years, significant contributions have been made by other donors. Sources of finance to the Special Account include voluntary contributions from consuming members, the Common Fund for Commodities (CFC)²⁹, regional and international financing

²⁷ GEF has recently set a target to reduce the time required for project preparation and processing to 22 months in all projects.

²⁸ The data was compiled from the banks' project data bases available in the internet as they were not able to provide consolidated statistics on their forestry financing for the ODA survey carried out.

²⁹ ITTA is classified as a commodity agreement negotiated under UNCTAD

institutions, and other sources. Possible sources of financing under BPF include contributions from donor members, 50% of income earned as a result of activities related to the Special Account, and other private and public sources.

Three main contributors of funding have been Japan, Switzerland and the United States which have collectively accounted for 90% of the cumulative voluntary contributions since 1987. Their share has decreased but this has been offset by contributions from other donors. The CFC has provided about 2% of ITTO's project funding. The average size of ITTO projects is between USD 300,000 to USD 500,000 with a duration of two to three years.

The number of ITTO recipient member countries has increased and currently includes 33 producer members and three developing consumer members. Eight member countries³⁰ have received more than 50% of the total ITTO funding while the share of 12 developing member countries has been one percent or less of the total for each; suggesting a fairly high degree of concentration.³¹ It might be assumed that the level of project funding would be related to the relative importance of forest area and international trade. However, as member countries have varying needs depending on their economic status, it might also be expected that project funds should be more generously provided to low income member countries. However, in general these countries have not been able to attract adequate project funding. There are two issues arising from this: (i) low income member countries generally have lower capacity to absorb funds effectively and, (ii) they also frequently lack the capacity to prepare and present good proposals. The most disadvantaged member countries have low capacity and higher risk of cross-sectoral failure, implying that projects are relatively less likely to be successfully implemented in these countries. Unless such considerations are properly addressed, these countries are likely to fare badly when their projects are evaluated. Equity in fund allocation is, therefore, a serious concern for many ITTO members. (Hardcastle & Umali 2007).

During the negotiation of ITTA, 2006, the debate between producer and consumer countries was focused on (i) producers' desire to ensure more project funding, and (ii) the question on how the Organization's policy work should be financed. ITTA, 2006 maintains the principle of meeting the expenses of the Administrative Account by assessed annual contributions equally shared between producer and consumer member countries³². The Agreement introduces the concept of "core operational costs"³³ which are to be shared in the proportion of 20:80 for producer and consumer member countries, respectively.³⁴ This is intended to facilitate increased funding for pre-projects, projects and activities under the Special Account and BPF which are retained in the Agreement.

Under ITTA, 2006, the Special Account is divided into (i) Thematic Programmes Sub-Account to facilitate unearmarked financing of pre-projects, projects and activities consistent with thematic programmes established, and (ii) Project Sub-Account to facilitate earmarked financing of pre-projects, projects and activities³⁵. The Thematic Programmes Sub-Account enables donors to make contributions on the basis of thematic programmes rather than on specific pre-projects, projects and activities.

The Bali Partnership Fund of the ITTA, 1994 has mobilized some additional funds for the Organization. The BPF requirement of linking with the ITTO Objective 2000 has been somewhat problematic: since practically all ITTO work is in one way or another related to the ITTO Objective 2000, and developing consumer member countries (e.g. China) are excluded.

The ITTA, 2006 financing arrangement has been devised to widen and strengthen the financing base for ITTO operational activities and attract increased predictable funding. The Thematic Programme Sub-Account will allow donors to allocate funds to thematic programmes of particular interest rather than micro-managing decisions on individual projects through earmarking. If, as expected, the Thematic Programmes Sub-Account is able to raise significant contributions from more donors than in

³⁰ Indonesia (16.2%), Malaysia (6.3%), Ghana (6.1%), the Philippines (5.9%), Brazil (5.8%), China (5.8%) and Congo (4.9%).

³¹ The total number of producing member countries is 33.

³² The expenditure level in the Administrative Account has been about USD 5.0-5.5 million per year.

³³ Such as those related to communication and outreach, expert meetings convened by the Council and preparation and publication of studies and assessments pursuant to ITTA articles on policy work, statistics, studies and information, and annual report and biennial review.

³⁴ These costs should not exceed 1/3 of administrative costs except if Council decides by consensus to vary this limit for a specific financial biennium.

³⁵ Earmarked contributions can be used only for pre-projects, projects and activities for which they are designated unless otherwise decided by the donor in consultation with the Executive Director.

the past, this will represent a major change. Moreover, the Council will have more authority to decide on projects from this Sub-Account while allowing ITTO to implement larger projects than in the past. Some large donors have indicated that the Thematic Programmes Sub-Account is necessary for ITTO in order to have access to new funds from their development agencies.

Diversification of funding sources is critical for the Organization's future. It remains to be seen whether the new arrangement under ITTA, 2006 can mobilize new funding but at least the Thematic Programmes Sub-Account can be expected to strengthen the overall financing mechanisms of the Organization. The recent ITTO Meeting on Operational Modalities of Future Work of the International Tropical Timber Council³⁶ debated extensively on procedural issues. As the ITTA, 2006 has not entered into force, decisions on how Thematic Programmes will be managed and which programmes will be selected³⁷ may be taken until 2009. A conservative expectation is to maintain the past level of ITTO funding of about USD 15 million per year. ITTO's particular competitive advantage is in its focus on industrial and trade development and thereby poverty reduction.

3.3.5 FAO and the National Forest Programme Facility

FAO is a key provider of technical assistance in forestry. Its regular programme for the Forestry Department and regional offices is about USD 18 million per year, supplemented by USD 5 million for technical cooperation projects. In addition, FAO receives trust fund financing from individual donors for specific programmes and projects which amount to about another USD 30 million in an average year. This includes the contributions to the National Forest Programme (NFP) Facility which is housed in FAO. A significant part of the trust fund contributions are further transferred to parties in developing countries to implement jointly agreed activities.

As a response to the call by the Intergovernmental Panel on Forests to develop national forest programmes (nfp), more than 100 countries have developed or are in the process to develop such programs or similar strategies. To support these efforts the NFP Facility was set up as a funding mechanism that supports active stakeholder participation at the country level. The Facility provides grants directly to stakeholders in partner countries to assist them in developing and implementing nfps. Since its inception in 2002, the Facility has supported stakeholders in 42 countries and four sub-regional organizations with grants totaling USD 6 million. The activities include facilitation of stakeholder participation in national planning processes, nfp preparation and development of new legal, fiscal and institutional instruments. The demand for assistance far exceeds the Facility's financial endowment. Direct country support is typically in the range of USD 300,000 per country over a period of three years.

3.3.6 Other Multilateral Sources

The Global Mechanism (GM) of the UNCCD was set up to facilitate financing of the Convention but it was allocated no resources for funding support to its developing country members. Drawing on the experiences on the CPF Sourcebook on Forest Financing and national forest financing strategies, GM has developed tools (i) to facilitate the UNCCD members access to funding sources (the FIELD database) (www.globalmechanism.org) and (ii) to develop country-level integrated financing strategies for sustainable land management (GM 2008). Forest interventions form part of the GM-promoted national strategies for sustainable land management.

Other multilateral sources include the International Fund for Agriculture Development (IFAD) which has financed forestry components in their agriculture and rural development projects. The World Food Programme (WFP) and some other international humanitarian aid programmes have also financed tree planting for restoration of degraded lands and fuelwood production. These inputs have been locally valuable but there is no information on their total amounts which are limited compared to other funding sources.

³⁶ 9 to 12 June 2008, Accra.

³⁷ Five themes are indicated in the draft ITTO Action Plan for 2008-2012: Climate Change and SFM; Forest Law Enforcement and Governance; Community Forest Management and Enterprises; Industry Development and Efficiency, and Trade and Market Transparency.

3.4 Private Sector Investments

There is no systematic information available on the domestic or foreign direct private investment in the forestry sector in developing countries³⁸. There is, however, a common view that the bulk of the investment in forestry is from domestic sources while in the processing industries, particularly in pulp and paper, foreign financing is significant in many countries. Foreign financing takes different forms through direct investments, portfolio investments and credits. Domestic investments in forest management, plantations, wood industries and further processing are made by the formal private sector and by communities, landowners and farmers who may often be operating in the informal sector.

3.4.1 Foreign Direct Investment

According to UNCTAD (2007), private foreign direct investment (FDI) flows³⁹ to forest industries in developing countries have grown at a fast rate (more than two-fold in 1990-2005) amounting to about USD 0.5 billion per year in 2003-05 (Table 3.6). In fact, the foreign-induced investment is substantially higher as local financing of investment projects in foreign-owned projects is common in the key countries (Brazil, Chile, China and Indonesia). As a consequence, the FDI stocks⁴⁰ in the wood and paper industries in developing countries have increased reaching USD 17.8 billion in 2005. A recent important trend is FDI made by developing country investors in other developing countries and the outward FDI stocks reached USD 2 billion in 2005. Companies from Brazil, Chile, China, Malaysia and the Republic of South Africa are known to be active in direct investment in other developing countries. In general, a substantial increase in FDI financing is foreseen in developing countries in plantations and downstream processing industries.

Based on the available data on pulp mill expansions it can be estimated that about 18 to 20 million tons of new pulp capacity will be built in developing countries by 2020⁴¹. About 25% of the world's woodpulp capacity would then be located in these countries. The respective investments could be conservatively estimated at of about USD 20 to 22 billion or about USD 1.5 to 1.8 billion per year. Allowing another 20% for paper and wood products would mean that the annual total investment in forest industries in developing countries could be in the range of USD 2.0 to 2.2 billion per year. The FDI component can be estimated at about USD 900 million per year⁴² which suggests almost doubling of the current recorded rate of the FDI inflow in developing countries (cf. Table 3.6).

The current trends in the plantation activity in developing countries indicate an annual increase of about 1.8 mill. ha/yr in developing countries (FAO 2005). This can be expected to accelerate for a variety of reasons (wood demand, bioenergy, carbon investments, etc.). The respective investment requirements would therefore be in the range of USD 3 billion/year of which almost one third could take place in Brazil.⁴³ The forest industry is undergoing a rapid change in its geographic structure.

³⁸ Different estimates have been presented in various reports based on varying assumptions. Their comparison did not prove to be informative for the purposes of this study.

³⁹ FDI flows are new investments by foreign enterprises made during a period of time – either by calendar or tax year. While much inward investment is included in FDI flow statistics, not all of it will be. For example, if an inward investor decided to expand its facilities in a country but used local finance, this would not appear in FDI flow statistics as it involves no inflow of money to the country.

⁴⁰ DI stocks measure the level of cumulative FDI stock of capital investment by foreign enterprises at a single point of time that takes account of both new investment and disinvestment.

⁴¹ The announced and known expansions over the next five years alone indicate an expansion of 4.9 million tons in woodpulp capacity in developing countries and 1.4 million tons in paper and paperboard (FAO 2008b).

⁴² On the known planned pulp investments about half would involve a foreign investor or partner. If the same share is applied for paper and paperboard and 30% is assumed for the wood industry, the foreign share of the total forest industry investments would be about 45%. However, the actual figure is likely to be lower as part of the projects will be financed locally although the owner is foreigner.

⁴³ Savcor Indufor (2006) used a global average investment cost of USD 2 000/ha covering the first three years since the establishment phase (excluding the cost of land). There is significant variation in the unit investment costs of industrial plantations among developing countries (e.g., Haltia 2007). In large scale operations, significantly lower costs are achieved e.g. in Indonesia and Brazil.

Table 3.6 Forest-related Foreign Direct Investment in Developing Countries

Sector	1989-1991	2003-2005
	- USD million -	
FDI FLOWS		
<u>Inward</u>		
Agriculture, forestry and fishing ^{a)}	602	1,855
Wood, pulp and paper products	237	516
<u>Outward</u>		
Agriculture, forestry and fishing ^{a)}	45	221
Wood, pulp and paper products	74	30
FDI STOCKS		
<u>Inward</u>		
Agriculture, forestry and fishing ^{a)}	4,194	8,707
Wood, pulp and paper products	4,536	17,793
<u>Outward</u>		
Agriculture, forestry and fishing ^{a)}	319	1,575
Wood, pulp and paper products	91	2,062

^{a)}There is no separate information on flows and stocks in forestry which is included in the same group with agriculture, hunting and fishing.

Source: UNCTAD (2007)

driven by profitability differentials (Box 3.2). The FDI component will be mostly related to pulp mill investments and estimated at about USD 300 million/year.⁴⁴

A key issue in private sector financing is to ensure that investments are not made into illegal and unsustainable operations. A growing share of forest industry corporations exporting to environmentally sensitive markets have achieved SFM certification or are committed to do it in order to demonstrate sustainability of their wood supplies. Some environmental and social NGOs have, however, expressed concerns on whether plantation-based forest industry can be certified if converted lands earlier under natural forest have been used.

In order to avoid financing of unsustainable activities and to mitigate the reputational, environmental and social risks of forest investments, more than 60 private Equator Principles Financial Institutions (EPFI)⁴⁵ have adopted sustainability safeguards in their project finance for projects less than USD 10 million as a risk management instrument. These safeguards are derived from IFC's Performance Standards aimed at ensuring that investments made are compatible with the institution's policy on social and environmental sustainability. The biodiversity and forest related safeguards are those of the IFC Performance Standard No. 6. This is an important expansion of the application of the World Bank/IFC requirements for forest certification which are part of the standard's requirements. Another important source in financing for pulp and paper industry investments in developing countries is export credit agencies which have not always paid due attention to sustainability in their decisions (e.g., FERN 2007; 2008). In addition, several leading commercial banks have specified additional requirements for forest sector projects and some have set-up special funds for forest and other "green" investments (El Lakany et al. 2007).

In the context of climate change policies, the forest industry has started to reposition itself. New revenue streams can be expected from their forest assets from environmental services; inherent climate change characteristics of forest products offer a potential competitive advantage in low-carbon economy; and consumers' green preferences enhancing forest products demand. Implementation of REDD measures would lead to stronger governance reducing the role of unfair illegal competition in the marketplace. On the other hand, sustainability means higher forest management costs and threats from climatic damage to forests also require costly adaptation measures. This is expected to lead to re-evaluation of forest asset strategies, capturing benefits from forest-based bioenergy, and ensuring that the entire supply chain meets the criteria for sustainability (cf. WRI 2008).

⁴⁴ The plantation requirement for the projected pulp expansions would be about 3.6 mill.ha in 2009-2012 corresponding to about USD 7.2 billion or USD 600 million per year of which about half would be related to foreign-owned plantation projects.

⁴⁵ <http://www.equator-principles.com/index.shtml> (accessed August 5, 2008)

Box 3.2**Rapidly Changing Profitability Pattern of Forest Industries**

According to the PricewaterhouseCoopers' annual Global Forest, Paper and Packaging Industry Survey, the three top regions in terms of return on capital employed (ROCE), a key measure of financial performance, were: Latin America (7.8%), Emerging Asia (7.3%) and the US (5.5%). Canada's producers earned the lowest average ROCE. The global forest, paper and packaging products sector continues to be shaped by shifting business and environmental factors, creating opportunities for some regions and challenges for others. Mills with the lowest production cost structures are the ones that are best able to manage currency fluctuations and rising costs, allowing them to take advantage of new opportunities and markets."

The capital reinvestment ratio was highest among Chinese and Latin American producers (3.08 and 2.84, respectively). At the other extreme, Canada had a 2007 reinvestment ratio of 0.4. The reinvestment ratio is capital investment as a percentage of depreciation, measuring the extent that capital investment is replacing aging assets. The forest products companies based in emerging markets, primarily China, Latin America and Russia, remain the growth drivers. On the supply side, the competitive advantage continues to shift towards South America, and China remains a major influence on the demand side.

Source: <http://www.pwc.com/extweb/ncpressrelease.nsf/docid/177F0EA303EF1B4E8525748F004E7180> (accessed August 5, 2008)

3.4.2 Timberland Investment

The emergence of timberland investments has been driven by three main factors: (a) biological tree growth as a stable and predictable source of revenue, (b) timber prices, and (c) land prices. These factors have been coupled with a manageable technical and market risk, supported by flexibility in timing of harvesting and investor exit. Direct investment in timberlands which in the past was mainly made by forest industry corporations has been shifting to indirect investment by institutional investors as a result of three main drivers: (i) securitization which has allowed spreading the risk among a large number of investors and improved liquidity of investment; (ii) possibility to use loan financing when real interest rates have been low, and (iii) outsourcing of management of timberlands. Forest industry corporations have often been forced by portfolio investors to divest their timberlands to increase short-term return on capital. Through divestment, they have been disintegrated from their captive wood supply source which has major strategic implications for their core operations even though the impacts have been mitigated through long-term supply contracts.⁴⁶

These factors have led to the emergence of timberland management organizations (TIMOs) which are essentially asset management organizations that sometimes also act as forest managers. Indirect investment in forest lands can take different forms (real estate capital funds, forest estate capital funds, real estate investment trusts (REITs), and timberland investment funds). Most of these funds simply work as investment funds used to purchase assets that can be forest property (land and/or trees). Another option is a partnership fund where the fund becomes a shareholder in the existing company owning or running forest business. The choice of the arrangement is strongly influenced by taxation and varies therefore between countries due to prevailing legislation.

There has been a boom in timberland investments in the United States. The total asset value is currently estimated at USD 30 to 50 billion, which is probably less than a quarter of the potential (Lutz 2008). TIMOs have become the largest forestland owners or managers in the country. In this situation it has become harder and harder to find large properties at attractive costs as timberland prices have risen significantly. Forest investment funds also operate in several European countries although their volume is still limited but growing.

Apart from New Zealand, Australia and more recently some European countries, timberland investments in other countries have so far remained limited to a few projects in Latin America, mainly Brazil. This is expected to change when risk-averse institutional investors have started to appreciate high expected returns and the country-level investment climates have improved. Uruguay, Chile, Colombia and Russia are likely to be among the next targets although the biggest expansion is likely to take place in Brazil in the short and medium term. This is aided by the on-going trend of Brazilian companies to outsource the management of their forest assets which makes these easily divestible

⁴⁶ Real estate investment funds or trusts in the USA are not allowed to carry out manufacturing operations and cannot invest in downstream processing.

(Tomaselli, pers.comm.). As one of the lowest cost producers of pulp in the world, Indonesia can substantially increase planted area and, if its policy and legal framework is improved, new private sector investment in planted forests by TIMOs and industrial investors can be expected.

For timberland investors the return on investment is the overriding objective. Apart from timber production, all the means to improve return are considered (unlike in the case of forest industry companies which typically prioritize stable low cost timber supply). This opens an opportunity for capitalizing on forest environmental services and land development values which already provide a substantial income source for some TIMOs in the USA. As timberland operators are large, they are well equipped to tap these possibilities for creating new revenue streams for SFM on their lands. TIMOs have contributed to improvement of market conditions in regions where the timber market has been in the hands of large corporations by opening up sales possibilities for smallholders. TIMOs can also foster technology transfer through their improved forest practices, and they can contribute to social development and law enforcement by self-compliance. The downside of timberland investors is their relatively short-term planning horizon (in the forestry context) and predetermined exit strategies. This is likely to influence their interest in effectively carrying out necessary long-term investments (such as reforestation or rehabilitation of degraded lands using intensive measures).

Potential benefits for the country from timberland investments are apparent: rehabilitation of degraded forests and lands, effective sustainable use of natural resources, employment and income creation from forest management, wood production and processing, as well as infrastructural development. On the other hand, there are downsides, too. While institutional and other private investors are looking for lands with clear land tenure and which are not effectively used for other purposes, social issues are likely to arise, particularly in the case of foreign investors. Other potential impacts are increased land prices (limiting local farmers' possibilities to buy additional land) and reduced possibilities for local people to use forests. While smallholders and communities may benefit from opening up new markets for their timber as a result of large-scale investments in nearby areas, the economies of scale in industrial wood production can put smallholders at a disadvantage in the market place.

In addition to physical timber growing conditions and comparative advantage, the country's investment climate or enabling conditions are the key for future private financing, especially foreign. This is a particular constraint for the forestry sector as investments are generally long term. Nascimento & Tomaselli (2005) have developed an approach for assessing national investment climates which can also be used to monitor progress. The results of a recent assessment carried out in Latin America (Nascimento 2006) shows that there are significant differences between countries. No systematic analysis has been done on the correlation between the investment climate and actual investments but it is apparent that large-scale forest investments in Brazil, Chile and Uruguay would not have been made, had the enabling conditions not been in place (Nascimento, pers. comm.). On the other hand, Indonesia is an example of a country with large expansion potential where lack of adequate policy and legal framework and weak institutions in the past have been barriers to investment in sustainable plantation forestry and downstream processing industries.

In conclusion, timberland investors can make a significant contribution to poverty reduction and sustainable development by enhancing production of forest goods and services and associated trade. They can also have a positive impact on technology transfer and research, governance and development of human resources. The impact is likely to be limited to relatively few countries which can offer attractive timber growing conditions, suitable land availability and adequate investment climate to enable foreign investment to take place. Regulation and voluntary measures such as forest certification are needed to mitigate possible negative impacts and to integrate these new actors in the national and local socio-economic framework to maximize mutual benefits.

3.5 NGOs, Philanthropic Foundations and Other Sources

In addition to ODA and private sector financing institutions there is a huge number of other sources of funding on which no consolidated quantitative information is available. The recent updating of the CPF Sourcebook on Financing for Sustainable Forest Management⁴⁷ detected more than 700 sources of different types: international and national, private and public, for-profit and non-profit, general or targeted at certain topics (e.g. research, education, etc.) or regions. The thematic areas most

⁴⁷ www.fao.org/forestry/cpf-sourcebook/en/

frequently covered by these sources include (i) education, training and public awareness, (ii) conservation and (iii) research and development. For other topics relatively few sources (less than 30 worldwide) were identified. Most of the sources are found in North America (46%) and Europe (27%) (FAO 2008a). Fragmentation and diversity mean both (a) opportunities to find a suitable source for almost any kind of forest-related activity and (b) limitations in terms of finding the right source for a particular purpose. Availability of funding from these diverse sources varies by region as there appear to be less opportunities for African and Latin American applicants. Competitive mechanisms for awarding funds are being increasingly applied. Most of the forest-related financing from various non-conventional sources is made through relatively small amounts but there are also very large actors among internationally operating NGOs and philanthropic foundations.

All these funding sources provide a valuable complement to conventional sources, particularly in the focal areas of education, conservation and research. These sources also address caveats which may not be covered by others such as support to stakeholder participation in forestry policy and planning processes, investment promotion, production and processing efficiency, traditional forest-related knowledge (TFRK), partnership development, etc. (FAO 2008a). While not contributing as significantly to SFM funding in absolute terms, smaller sources providing grants occupy an important niche because they are able to support, in a flexible manner, innovative and higher-risk projects; and they can also be influential in guiding the direction of investments of larger donors (FAO 2008).

3.5.1 NGOs

The world's six largest environmental NGOs⁴⁸ have a total asset value of several billions and they generate an annual income of USD 1.5 billion both from donations, bilateral aid agencies and own resources. Many NGOs use a significant part of their financing resources for international work, mostly in developing countries. Biodiversity conservation has been the main target but more recently some support has also been given to SFM. By far the largest environmental NGO is The Nature Conservancy (TNC) had in 2007 assets of USD 5.4 billion of which USD 2.9 billion was invested in conservation lands and conservation easements which makes the organization a particularly powerful financier for forest conservation (TNC 2007). Conservation International (CI) is another powerful fundraiser having created CI-managed funds for conservation. In general, the role of conservation NGOs is probably growing as a result of the growing interest of some large US foundations in supporting environment (Box 3.3).

A huge number of social NGOs are working in rural areas and many are engaged in supporting sustainable management and conservation of natural resources. Some internationally operating organizations like Oxfam, Caritas, etc. need to be singled out for their support to forest communities and smallholders even though small national NGOs and community-based organization combined are assumed to be the main actors in this field. With regard to the NLBI implementation, the NGO sources of financing make an important contribution to such areas as forest conservation, poverty reduction and livelihoods, stakeholder participation, partnerships, training, awareness raising, etc.

While NGOs in developed countries are often well equipped to raise funds, local NGOs, forest communities and smallholders have difficulties in accessing most funding sources because these tend to have rigorous approaches to application, implementation, monitoring and evaluation in spite of the fact that poverty reduction and community development are often identified as priority areas.

3.5.2 Philanthropy

There is an increasingly important role for philanthropic contributions and the work of the non-profit organizations that they support. The United States is the leading country in this field with about 68,000 grant-making foundations. Their international giving has increased rapidly amounting to USD 3.8 billion in 2005 of which about 6% (some USD 230 million) was allocated to environment. Financing to forests would be part of this total and a substantial share is presumably allocated for biodiversity,

⁴⁸ The Nature Conservancy, WWF International, the Conservation Fund, Conservation International, the World Conservation Union (IUCN), Natural Resources Defense Council, Nature Conservancy of Canada.

Box 3.3**Conservation International's Funds*****Critical Ecosystem Partnership Fund***

CEPF was conceived as a model to demonstrate the effectiveness of mobilizing innovative alliances by an internationally credible conservation NGO. CEPF is a joint initiative of Conservation International (CI), the (GEF), the Government of Japan, the John D. and Catherine T. MacArthur Foundation and the World Bank. Each partner has committed to a USD 25 million investment over five years. In 2007 the Agence Française de Développement (AFD) from France joined CEPF with a grant of about USD 30 million and CI co-financed another USD 25 million. The target is to raise another USD 150 million (CEPF 2007).

The objective of CEPF is to provide strategic assistance to NGOs, community groups and other civil society partners to protect biodiversity hotspots, i.e., the biologically richest yet most threatened ecosystems. Each hotspot is characterized by at least 1,500 endemic plants and less than 30 percent of its original natural habitat remaining. Within the hotspots, CEPF investments target action in key biodiversity areas as well as threats to biodiversity in conservation corridors. CEPF has established active grant making programs in 33 countries and by 2007 it had committed grants of USD 91 million. The annual volume in 2007 was USD 7.9 million (CEPF 2007).

International NGOs had received 59% of CEPF's grants through June 30, 2005 (including the largest grantee's (CI itself) 35% share). CEPF management and some of the donor partners have expressed concern on the importance of gradually reducing the proportion of grants going to international rather than local and national NGOs. CEPF is managed as a semi-autonomous unit within CI.

Global Conservation Fund

GCF was established in 2007 with a grant from the Gordon and Betty Moore Foundation. It provides financial and strategic assistance to enable local communities, NGOs, and governments to protect their biological riches. GCF is designed to target two critical needs: creating and expanding protected areas, and ensuring their effective management. The goal for all GCF projects will be a newly created or expanded protected area supported by a financing strategy and well-capitalized mechanism to cover future management costs. Protected areas supported range from national parks to privately owned lands and community-managed reserves that combine conservation with responsible natural resource use and development.

GCF will help design and support endowments, trusts and other special mechanisms that create a steady flow of funds for managing important new protected areas in CI's three priority areas: (i) biodiversity hotspots; (ii) high-biodiversity wilderness areas; and (iii) key marine regions.

Sources: <http://web.conservation.org/xp/gcf/where/> (accessed August 2, 2008) and Wells et al. 2006

related issues for their grants such as protected areas, land rights, etc. The future funding flow from these sources will depend on the stock market (the main source of endowment income) and emergence of new sources like Warren Buffets donation of USD 31 billion to the Gates Foundation which may allow expansion of its scope of funding beyond health to include such areas e.g. rural development and conservation (Renz & Atienza 2006). Another source is wealthy individuals who may directly contribute to field projects or through existing foundations. Mobilizing funds from these sources would require professional fund-raising and targeted promotion within long-established contacts rather than through ad hoc applications.

With regard to NLBI implementation, philanthropy is an important complement to, but not a substitute for, public funding. The financial flows are typically targeted at field-level projects and only in few cases (e.g. protected area establishment and management) recipients could be government agencies and thereby directly contributing to the NLBI implementation. As sustainable forest management is not, fundamentally, a charitable endeavor, it is unlikely that philanthropic sources would become a major source for its financing. Furthermore, the current financial crisis reducing the asset value of portfolio investments is likely to significantly limit short and medium-term increases from these sources.

4. EMERGING INSTRUMENTS AND MECHANISMS FOR FOREST FINANCING

Since the mid-1990s great expectations have been put forward concerning the development of payments for environmental services (PES) as a possible complementary source of funding for SFM. These expectations have not materialized for a number of reasons (e.g. El Lakany et al. 2007, Pagiola et al. 2002, Landell-Mills & Porras 2002). From the international perspective the PES schemes of global public goods from forests (climate change mitigation and biodiversity) have been seen as the most promising way to raise additional financial flows to SFM in developing countries. Regulatory

arrangements like the Clean Development Mechanism (CDM) have not (yet) proved effective in addressing the needs for afforestation and deforestation in developing countries. Also in the case of other PES schemes the experience in developing countries continue to be limited (mainly in Latin America) while they are widely being applied in many developed countries. As explained below the voluntary initiatives can be strategically important in piloting new instruments but they cannot launch funding flows which are commensurate to the globally spread problems of deforestation, forest degradation and unsustainable forestry practices.

In this section the voluntary carbon markets are first reviewed followed by a discussion on REDD as a potential financing instrument and related country initiatives on climate change and tropical forest conservation. Other than carbon-related PES initiatives and instruments are then briefly discussed as these topics have been covered by the recent stock-taking exercise by El Lakany et al. (2007). Finally, the potential of the proposed Global Forest Partnership is discussed.

4.1 Carbon Offset Markets

The two major mandatory markets for carbon offsets, the Kyoto Protocol's Clean Development Mechanism (CDM) and the European Union Emission Trading Scheme (ETS), were valued at USD 64 billion in 2007 or more than double the previous year. They have proved to be efficient and effective but only the former has covered forest carbon offsets albeit still on a very limited scale as only one forest carbon project has been formally endorsed by the CDM Executive Board.⁴⁹ Twenty-seven projects are in the process of validation with a total amount of credits of 2 million tons CO₂.⁵⁰ This shows that there is a strong potential supply of afforestation/reforestation (A/R) credits but the CDM has been slow in mobilizing it. The non-Kyoto regulated markets in the United States and Australia (New South Wales) cover forest carbon offsets but also they are still small compared to the Kyoto-regulated CO₂ markets. Three problems have made CDM financing cumbersome in forestry: (i) there is a delay of 1-2 years in getting CDM projects approved, (ii) transaction costs are so high that smaller projects are not viable, and (iii) particular characteristics of forestry projects related to additionality, leakage and permanence. On the other hand, there appears to be a large potential supply of afforestation/reforestation projects under CDM which cannot be met.

The voluntary market for carbon credits was USD 331 million in 2007 or more than three-fold the 2006 level. The voluntary over-the-counter (OTC) markets are currently the only source of carbon finance for avoided deforestation, have a higher proportion of forestry based credits out of total market transactions than the Clean Development Mechanism (CDM) (36% vs. 1% for CDM). Moreover, the voluntary markets seem to be a particularly hospitable climate for smaller offset projects (Hamilton et al. 2007). This indicates that, in spite of small volumes, there is a significant forest carbon offset demand which cannot be channeled through the regulated market and is therefore traded in the voluntary market. In the short run this unregulated market is likely to play a critical role in developing new ways of implementation as the regulatory market is still incipient. Many buyers are purchasing the voluntary offsets at attractive costs expecting that these may be used to comply with future regulations or resell them.

Another factor promoting the voluntary market is the type of project and quality of carbon credits. In spite of the higher costs, certified CO₂ credits appear to be generally preferred by the market. The voluntary market price has been varying from USD 1.80 to USD 300. The average cost, partly due to certification, has increased from USD 4.10 to USD 6.10 per ton⁵¹.

The projects that produce the credits to sell in the voluntary market are often in developing countries. They can support a range of activities relevant to poor communities – for example, small-scale energy, energy efficiency and forestry – and there is a significant opportunity to harness this market for development. There are, however, barriers, too. These include the small scale of many pro-poor projects, the absence of approved methodologies in some areas, the media denigrating the role of the voluntary market and scaring off buyers, a lack of clear property rights, including carbon rights, and unequal negotiating power.

⁴⁹ Guangxi Watershed Project in China

⁵⁰ <http://cdm.unfccc.int/Projects/review.html> (accessed September 26, 2008)

⁵¹ <http://www.climatebiz.com/news/2008/05/12/voluntary-carbon-market-tripled-value-2007-mandatory-market-doubled>

4.2 Reduced Emissions from Deforestation and Forest Degradation

4.2.1 REDD as a Policy Instrument

The Stern report (2006) made it clear that avoiding deforestation would be among the lowest cost mitigation options to avoid increasing CO₂ emissions and possibly also increasing sinks. At the same time, other benefits like biodiversity conservation, poverty reduction and climate change adaptation could be enhanced. Through carbon revenue, prospects for the economic viability of SFM in natural tropical forests are expected to substantially improve as at least part of the ecosystem services that these forests provide could be remunerated. Through the adoption of the Bali Action Plan by the UNFCCC Conference of Parties (COP-13) in Bali, December 2007, it is clear that avoided deforestation will be part of the international climate change arrangement after 2012. This outcome was achieved after intensive political and technical debates since the approval of the Kyoto Protocol in 1997. The COP decision “Reducing emission from deforestation in developing countries: approaches to stimulate action” encourages parties to explore a range of actions, identify options and undertake efforts to address the drivers of deforestation. The decision also encourages support to capacity building, technical assistance, facilitation of the transfer of technology, and addressing the institutional needs of developing countries to estimate and reduce emissions from deforestation and degradation.

REDD compensation as a win-win instrument is now finally supported by practically all stakeholders for a variety of reasons. For tropical country governments REDD represents a new source of financing for national priorities like health and education; for donor countries it is a low cost option for carbon offsets; for environmental NGOs REDD can generate additional resources for biodiversity conservation; for the rural poor badly needed income and financial support to community development as well as a means to improve their forest tenure rights; for the private sector REDD can be an additional source of funding to make SFM in natural tropical forests and land restoration financially viable; for political elites yet another opportunity of income; for multilateral development banks (MDBs) REDD can open up new ways of doing business in the context of maintenance of global public goods; and for intergovernmental organizations it offers a new area of intervention in technical assistance and a new funding source.

Meeting such a broad range of interests will be difficult. Several issues need clarification and therefore the COP Decision 2/CP.13 calls for consideration of policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stock in developing countries. This holistic view means that both emission reductions and SFM are promoted. The Bali Action Plan calls also for capacity building and demonstration to find suitable ways for REDD implementation. In addition, ways should be found to address key issues (see section 5.2.3) in advance to avoid backfiring effects as has happened in the case of promotion of land-based biofuels utilization. The unique win-win opportunities of carbon financing instruments (CDM, REDD, voluntary markets, etc.) mean that they can also enhance synergies between international instruments related to forests including UNFCCC, CBD, UNCCD and the NLBI. This would, however, mean that scaled-up coordinated action is taken within a holistic framework.

4.2.2 REDD Implementation

There are at least three main implementation options for an international REDD agreement: (a) national-level carbon offsets, (b) project-based offsets (both traded in the market), or (c) an international funding mechanism which would not result in carbon credits. The current perception is that the first option could best achieve the targeted REDD objectives as its capacity to mobilize funding is probably largest. At the same time some of the key issues (see section 5.2.3) could be effectively addressed through a combination of international and national-level rules of operation. On the other hand, the third option has also received strong political support (e.g. Brazil) and it could be designed in such a way that it can provide similar advantages as the market-based approaches (apart from carbon offset credits for buyers or sources of funding). Payments could be made upon verified performance which can be calculated in the same way using baselines and reference scenarios. In the funding approach necessary upfront costs could eventually also be financed for which other arrangements would be needed in the market-based approaches. The fund option could, however,

suffer from problems of transparency, accountability, low volumes and, in general, more risk for predictability (e.g. Global Mechanism 2008).

Market-based approaches have the benefit of being transparent, flexible (particularly in case REDD credits are fungible with other carbon credits), and they provide a strong incentive for large, fairly predictable financial flows under clearly defined rules of transaction. Different views on the REDD implementation options may significantly delay achievement of consensus and thereby formal launching of the instrument. In the meantime, it is important to gain practical experience as called for in the Bali Action Plan.

4.2.3 Issues and Concerns

The rapidly accumulating analytical literature⁵² suggests that at least the following concerns should be clarified before agreement on the operational REDD arrangements can be achieved:

- Uncertainty about achieving co-benefits in poverty reduction, livelihoods of the rural people, biodiversity conservation and other environmental services as well as sustainable management of forests; there is lack of clarity on how trade-offs between various objectives (climate change mitigation, biodiversity, poverty, etc.) can be addressed in specific situations.
- Risk for violating the rights of indigenous and other local populations concerning the use of forest areas and possible negative impacts of the separate ownership rights of carbon on other rights over forests and trees
- REDD's impact on land prices which may adversely affect land ownership and tenure of indigenous and other local people.
- Uncertainties about to what extent and how payments for REDD credits can be distributed to the rural people and what other benefits smallholders, farmers and communities can obtain from REDD schemes; there is an additional concern on how to avoid that the majority of payments are captured by elites or the state.
- REDD may act as a perverse incentive if it leads to an increase in deforestation rate before a country enters into the system in order to have an artificially low reference scenario based on which improved performance is afterwards rewarded.
- Risk of limiting access to REDD financing to only forest-rich countries has equity implications. Many of these countries belong to the middle income countries and therefore most of least developed countries would not benefit from REDD.
- Another related concern is that those countries which have already addressed deforestation are not compensated; rather they may often be penalized as their reference scenarios may be more demanding than in those countries where deforestation is still rapid. Differences in marginal costs between countries also need consideration as in the former cases additional reductions are likely require higher investments in relative terms than in the latter.
- How could REDD address land degradation in areas which have already been deforested, including restoration of these lands to create new carbon stocks. This is associated with possible exclusion of drylands and other low carbon intensity forest lands from the REDD mechanisms. Creation of such carbon stores through reforestation will suffer from significantly reduced market competitiveness compared to avoided deforestation but their co-benefits would be highly significant as drylands tend to suffer from extreme poverty. Furthermore, there is lack of clarity on how adaptation in forestry can be financed to avoid further land degradation and desertification, and on how forest carbon stocks on and around the margin of forests could be incorporated.
- Underlying causes for deforestation and forest degradation are planned to be addressed in the national REDD strategies in participating countries but it is unclear how this can be done in practice.
- Lack of understanding on the fact that in natural tropical forests harvesting does not necessarily lead to immediate or short-term carbon emission from felled trees as products made of tropical

⁵² E.g., Boccucci et al. 2008; Forest Peoples Programme 2008; Gardiner 2008; Leach 2008; Peskett & Harkin 2007; Putz & Zudeima 2008; Scholz & Schmidt 2008; Skutch 2008; Wainwright 2008.

timber have typically long life cycles. In the long run regrowth is invigorated after the removal of trees in selective cuttings practised in these forests. This is associated with the common perception that carbon stock has to be maintained at stand level while, from the management perspective, assessment should be made over a forest management unit representing of stands in different stages of forest dynamics.

- The level of REDD application (national, sub-national or project) has not yet been defined. There are particular concerns about accountability of national-level REDD credit schemes compared to project-based credits which, in spite of their higher transaction costs, can ensure delivery of agreed credits.
- Governance arrangements of REDD schemes need to be defined both at national and international levels to ensure transparency and balanced decision making.
- Lack of clarity on appropriate common approaches for stakeholder participation in the elaboration and implementation of national REDD strategies.
- There is lack of clarity on whether a market mechanism or a fund mechanism will be applied; this is associated with the (probably unfounded) concerns on possible flooding of the carbon offset markets with REDD credits impacting general CO₂ prices and thereby efficiency and effectiveness of all carbon trading instruments. Related to this is the issue of possible fungibility of REDD credits with other CO₂ credits.
- In the case of market mechanism there is an additional concern on how significant upfront costs could be financed from other sources as carbon payments would be made upon performance.
- Transaction costs both at international and in-country level may prove to be high due to complex implementation modalities. An excessively high share of REDD payments may be captured by the intermediaries of the financial markets where the carbon offsets would be traded.
- Independently from which approach is applied, there are additional needs for co-financing of complementary activities to ensure that REDD benefits are created in practice, particularly building up country capacity to implement necessary measures to reduce deforestation. However, their financing is an open question.
- Experience has shown that processes to revise legislation and strengthen governance to make REDD schemes to work in practice are usually very slow while the current supply of REDD funds is calling for accelerated implementation to make use of the present window of opportunity.

A number of methodological problems need also to be solved before REDD can take off on any larger scale:

- Definition of forest degradation
- Data collection methods for required accuracy and frequency at acceptable cost
- Establishment of baselines and reference scenarios
- Measurement of carbon in the absence of reliable research and resource assessment data on carbon density of forests which varies extensively between countries, bio-geographical zones, forest types, site conditions, etc.
- Monitoring mechanisms and verification standards, including associated standards for SFM to ensure sustainability
- Duration of REDD credits

In addition, REDD credits, like all forest carbon credits, will also be influenced by concerns related to permanence, leakage, temporal variation of the forest carbon cycle, and climatic, social and economic risks.

Some of the above issues can be addressed through international regulation and some through appropriate measures in national REDD strategies. However, many are cross-cutting themes and need to be considered holistically e.g. in the context of national forest programmes or similar broader strategies. Independently from which approach is applied, there are additional needs for co-financing of complementary activities to ensure that REDD benefits are created in practice, particularly building up country capacity to implement necessary measures to reduce deforestation.

The governance issues could be best considered in national processes of strengthening of forest legislation, enforcement and governance (FLEG) which are on-going in many countries. However, implementing fundamental changes in the governance and policy framework has proved to be sticky due to vested interests. In particular, the complex issues related to equitable sharing of benefits, resource rights and regulation related to forest management and environmental conservation have been politically difficult subjects in reform processes. In addition, reduction of illegal land-use conversion and logging and is constrained by weak institutional capacity and rampant corruption which cannot be eliminated in the short run due to flawed economic incentives and other structural underlying reasons. Governance issues may be the most important constraint for the effectiveness of REDD schemes.

The above list of issues also suggests that there is unlikely to be one-size-fits-to-all solutions and in many cases a combination hybrid approach may be the most feasible way forward, particularly in the initial stages (e.g. market cum fund-based approach, national cum programme/project-level approach, etc.) (Ebeling & Yasue 2007).

4.2.4 Forest Carbon Partnership Facility

Building on the positive experience of the BioCarbon Fund and its own analytical work (notably Chomitz 2006), the World Bank has spearheaded the development of REDD financing by the establishment of the **Forest Carbon Partnership Facility** (FCPF). The purpose is to assist developing countries in their efforts to reduce emissions from deforestation and degradation and building capacity for REDD activities. FCPF will test a program of performance-based incentive payments in more than 20 developing tropical and sub-tropical pilot countries. The objective is to create an enabling environment and a body of knowledge and experience that can facilitate the development of a much larger global program of incentives for REDD over the medium term (5-10 years).

FCPF has two elements: (1) The **Readiness Fund** will build up specific capacity in participating countries to implement the REDD scheme. This will include, inter alia, (i) discussing reference emission cases by assessing historical emissions from deforestation and degradation, and/or, if found appropriate by projecting emissions from deforestation and degradation into the future; (iii) preparing a national REDD strategy with proposals for policy and regulatory changes and specific actions to achieve the planned emission reductions in the form of development programs or alike, as well as design of mechanisms for management of REDD, including distribution of benefits ; and (iv) establishing a monitoring system for emissions. (2) The **Carbon Fund** will support a few countries that will have successfully participated in the Readiness Mechanism to pay for performance-based Emission Reductions driving from REDD policies and measures as an incentive to these countries and their various stakeholders to achieve long-term sustainability in financing forest conservation and management efforts. The Carbon Fund will deliver emission reductions based on evidence that the projected volumes have been realized and verified as per methodologies deemed acceptable by the FCPF participants.

The FCPF's target capitalization is at least USD 300 million, consisting of USD 100 million in the Readiness Fund and USD 200 million in the Carbon Fund. By May 2008, the World Bank had received donor pledges of about USD 155 million from nine industrialized countries and an NGO to kick-start this initiative.⁵³ Fourteen countries have been selected for the first phase of FCPF implementation.⁵⁴

4.2.5 Climate Investment Funds

Multilateral development banks have take action to establish special climate investment funds to assist their members in the implementation of the UNFCCC. The World Bank, in consultation with other MDBs and other stakeholders, has developed measures to scale up assistance to developing

⁵³ The donor countries include Germany (USD 59 million), the United Kingdom (USD 30 million), the Netherlands (USD 22 million), Australia and Japan (USD 10 million each), Switzerland (USD 7 million, Denmark and Finland (USD 5 million each). The US-based Nature Conservancy also pledged USD 5 million.

⁵⁴ DRC, Gabon, Ghana, Kenya, Liberia, Madagascar, Bolivia, Costa Rica, Guyana, Mexico, Panama, Nepal, Laos and Vietnam.

countries and build the necessary knowledge base in the development community with this objective, two large climate investment funds (CIFs) have been created which would be new and additional to existing ODA flows.

The **Strategic Climate Fund** (SCF) will, inter alia, promote international cooperation and channeling new and additional financing for addressing climate change through targeted programmes. SCF will provide incentives to maintain, restore and enhance carbon-rich natural ecosystems to prevent these carbon sinks from becoming emission sources, and to enhance all the services they provide, including climate resilience or adaptive capacity. SCF will finance piloting of new development approaches and scale up activities aimed at a specific climate change challenge or sectoral response through targeted programmes. The first programme will pilot national-level actions for climate resilience in a few highly vulnerable countries. SCF attempts to maximize co-benefits of sustainable development, particularly in relation to the conservation of biodiversity, natural resources ecosystems and ecological processes. SCF has a holistic approach to climate change mitigation and adaptation which is particularly relevant in the forestry sector due to its diverse opportunities to contribute to the SCF objectives.

The **Clean Technology Fund** (CTF) is targeted at, inter alia, providing positive incentives for the demonstration of low carbon development and GHG mitigation, promoting scaled-up deployment, diffusion and transfer of clean technologies, and promoting realization of environmental and social co-benefits of low-carbon technologies. CTF's country-specific programmes will involve both the private and public sectors and they will complement GEF as well as link with the capacity building programmes of UNEP and UNDP. CTF's grant financing can cover additional costs necessary to make projects viable and will be supplemented by concessional loans and risk mitigation instruments, such as guarantees. As regards the forestry sector, investments in bioenergy and improvement of the forest industry's energy efficiency and management fall under the CTF.

As a measure to start implementing SCF within a broader approach to mitigation of forest-based emissions, enhancement of forest carbon sequestration and adaptive capacity, the World Bank is currently developing a **Forest Investment Programme** (FIP) which could address the gaps of SFM financing in the existing and emerging instruments such as REDD schemes. The objective could be to finance transformational investment in developing countries to initiate and implement change towards a low carbon emission and climate resilient sustainable forest management. It is understood that mainstreamed follow-up investment by the private sector will only be effective if made within the context of an enabling legal, institutional framework and conducive investment climate. The FIP would assist countries in creating this framework and provide financing for upfront investments needed for SFM for various PES schemes and production of timber, non-timber forest products and various forest-based services. This is deemed necessary as it is unrealistic to assume that poor developing countries could have the capacity to borrow substantial capital for financing of pre-investments to generate future carbon and other output-based PES revenue paid upon delivery.

The FIP mechanism could be complementary to FCPF and thereby help ensure its success by addressing (i) implementation of the required policy changes including the underlying causes of deforestation, which go beyond the forest sector, (ii) the needs of forest populations and those managing forests resources, and (iii) the transformation process of the private sector to invest in sustainable forest management and land use. In addition, the FIP could be a financing channel for countries which cannot have access to REDD mechanisms but which have substantial potential for generating combined mitigation and adaptation benefits through restoration and sustainable management of degraded lands, forests and watersheds. FIP is projected to be established by the end of 2008. (World Bank 2008a; 2008b).

4.2.6 UN REDD-Programme and the Collaborative Partnership of Forests

As REDD is likely to become a huge undertaking and time is extremely limited, no single initiative is likely to be sufficient for achieving reduced emissions from deforestation and degradation. Many initiatives are in planning phase and more is likely to emerge. There is a concern about coherence of these parallel activities, their efficiency and effectiveness to achieve the intended objectives without having clear coordinating and consolidating mechanisms. It is important that the various initiatives will work in concert as much as possible in order to achieve complementarity and to avoid unnecessary burden for developing countries to cope with the requirements of various external support initiatives.

FAO, UNDP and UNEP are developing a joint UN Collaborative Programme on REDD in developing countries. It attempts to build on the participating agencies' comparative strengths, facilitate partnerships, and contribute to coordination and mainstreaming of in-country efforts. The programme is planned to have two components: (i) assisting developing countries to prepare and implement national REDD strategies and mechanisms, and (ii) supporting the development of normative solutions and standardized approaches for a REDD instrument linked with the UNFCCC. The in-country REDD readiness programmes are planned to include (i) scoping and alliance building, (ii) development of monitoring and assessment capability and methodologies (including baselines and reference scenarios), (iii) stakeholder dialogue on REDD, (iv) support to development of national REDD strategies, (v) REDD data management, (vi) REDD payment structuring, and (vii) REDD payment distribution. Technical and scientific support and knowledge management will be the key areas of intervention. (FAO/UNDP/UNEP 2008). The planning process of the initiative involving other actors is still⁵⁵ on-going and it is possible that the scope will be expanded beyond the planned approach to build up "REDD readiness" capacity. In its initial stage (up to 2009), the UN-REDD Programme will support capacity building and other readiness activities in a small number of countries.

As coordination will be a key issue in all initiatives targeted at forest sector responses to the climate change agenda, and as these responses will be cross-cutting, the Collaborative Partnership on Forests (CPF) has taken an initiative to elaborate a strategic framework for engaging all the key CPF members. Its purpose would be to enhance efficiency in individual agency responses and other initiatives to climate change through cooperation and coordination. CPF's initiative is particularly valuable because of its broad coverage of all the relevant intergovernmental and other international organizations.

ITTO is planning to develop a thematic programme on tropical forests and climate change. It is likely to emphasize forest restoration and sustainable forest management in the mitigation of climate change, addressing vulnerability of forest dependent people to climate change and enhancing the resilience of forest ecosystems with their sustainable management. Interventions may include analytical work, capacity building, knowledge management and information sharing (cf. ITTO 2008).

4.2.7 Country Initiatives on Climate Change and Tropical Forest Conservation

The progress made in recognition of the role of avoided deforestation and forest degradation under the UNFCCC has given rise to about 20 initiatives and some governments in developing countries to provide funding for tropical forest conservation (Kutter 2008). The main initiatives are summarized below:

A fund for the Amazon forest conservation (**Amazon Fund**) was launched in August 2008 by the Brazilian Government with an initial target of USD 1 billion to reach USD 21 billion by year 2021. Norway has already pledged USD 100 million to this fund as the first tranche of the planned USD 600 million contribution. The initiative is important for Brazil for the reasons of image and the recognition of the linkage between climate change, biodiversity and the rain forests.⁵⁶ It also signals the Government's will to control the use of funding flows rather than relying on international PES mechanisms which have been interpreted as a sovereignty issue.⁵⁷ The fund will support, inter alia, sustainable forest management and production of non-wood timber products by indigenous and other forest communities.

As part of the Congo Basin Forest Partnership (CBFP), the **Congo Basin Forest Fund** (CBFF) was launched in June 2008 to complement existing initiatives. The CBFF is a multi-donor facility established to take actions to protect the forests in the Congo Basin region. It was launched in London on 17 June 2008 at the Lancaster House by Prime Ministers of the UK and Norway and the African Development Bank (AfDB) Group President. The Fund will support activities of the COMIFAC (The Central Africa Forests Commission) convergence plan. The purpose is (i) to support transformative and innovative proposals which will develop the capacity of the people and institutions of the Congo Basin to enable them to manage their forests; (ii) to help local communities find livelihoods that are

⁵⁵ September 2008

⁵⁶ President Luiz Ignacio Lula da Silva's statement in the launching even in Rio de Janeiro, August 1, 2008.

⁵⁷ Statement by Mr. Roberto Mangabeira Unger, Ministry of Strategy, in the same event.

consistent with the conservation of forests; and (iii) to reduce the rate of deforestation. The Fund will provide a source of accessible funding and encourage governments, civil society, NGOs, and the private sector to work together. The CBFF is initially being financed by a grant of USD 100 million from the British Government and about USD 116 million by the Norwegian Government. All CBPF members and other donors have been called upon to join the Fund. The Fund will be located in the African Development Bank (AfDB) which will also provide logistical and technical support. (www.afdb.org).

Australia's **International Forest Carbon Initiative** (IFCI) will support international efforts to reduce deforestation through the UNFCCC. This AUD 200 million (about USD 186 million) initiative for REDD is focused on increasing international forest carbon monitoring and accounting capacity, trialing approaches on methodological, technical and policy issues necessary to demonstrate robust and verifiable action on REDD, undertaking practical demonstration activities, and supporting international efforts to develop and evaluate market-based approaches to REDD. In practical demonstration activities and capacity building, the focus is in the Asia-Pacific region, particularly Indonesia and Papua New Guinea. As part of the development of market-based approaches to reducing emissions from deforestation and forest degradation Australia has provided funding to the FCPF.⁵⁸

Norway has started to implement a programme to achieve rapid, cost-effective reductions in greenhouse gas emissions from deforestation and forest degradation, with the additional aim of establishing mechanisms for regulating such emissions in a new international climate agreement. The upper limit of funding is USD 600 million per year. It is recognized that it will not be possible to agree on an effective new climate agreement if developing countries are left to meet the costs of reducing emissions from deforestation by themselves and therefore, international transfer of capital is needed on a large scale. The Norwegian efforts will focus on large areas of more or less intact tropical forest. i.e. the rain forests in Brazil and the Amazon region, the Democratic Republic of Congo and other countries in the Congo Basin, and Papua New Guinea and Indonesia in South East Asia.⁵⁹ The large areas of tropical dry forest and savannah, such as the *cerrado* in Brazil and the *miombo* woodlands of southern and eastern Africa, which are important in storing carbon and maintaining biological diversity are also considered. Within this framework, Norway has already made commitments through bilateral cooperation with Brazil and Tanzania. Support to multilateral initiatives include FCPF, the Congo Basin Forest Fund at AfDB, the UN collaborative Programme on REDD and the Forest Investment Fund at the World Bank as well as support to the Global Mechanism's Initiative 'Integrated Financing Strategies for UNCCD Implementation' (GM 2008b). In addition, support will be provided to research, NGO advocacy and implementation as well as private sector initiatives.

Japan will establish a new financial mechanism, **Cool Earth Partnership**, on the scale of USD 10 billion. Through this, Japan will cooperate with developing countries' efforts to reduce emissions, such as efforts to enhance energy efficiency (about 80% of the funding). The Partnership will also include support to adaptation activities (about 20%). Japan's additional financial support to forests is likely to be channeled through the Cool Earth Partnership. In addition, Japan aims to create a new multilateral fund for climate change, together with the United States and the United Kingdom⁶⁰.

The above initiatives illustrate that there is readiness for action and willingness for financing. Many recent decisions by donors will mobilize significant new resources for forest financing in the future even though their total magnitude is still difficult to estimate. Nevertheless, these initiatives, together with various market-based or fund-based financing schemes, have potential to at least double the current financial flows from the international community to forests in developing countries. It needs to be noted that many of them are targeted at the same countries which have also been identified as priority forest-rich countries for REDD schemes.

On the other hand, they raise the issue of coordination among various initiatives and funding mechanisms. There is a risk that funding will be driven by the sources and not demand and overlapping mandates between initiatives will emerge. There is a need for harnessing synergies between new and emerging financing mechanisms addressing forest-related global concerns, particularly those related to climate change (Kutter 2008). While harmonization between independent initiatives as an objective may not be realistic and not even appropriate, there is a need for

⁵⁸ www.climatechange.gov.au

⁵⁹ These are the same areas that are targeted by e.g., GEF's Tropical Forest Account as well as many other bilateral donors and environmental NGOs.

⁶⁰ www.mofa.go.jp/policy/economy/wef/2008/

cooperation and coordination based on comparative advantages and available financial and human resources.

4.3 Payments for Forest Environmental Services Other Than Carbon

Over the last decade a growing interest has been given to regulatory, market-based and other voluntary payment mechanisms for forest environmental services. They are already a major source of funding in many developed countries for conservation of watershed conservation and biodiversity but, as explained in section 4.2.1, their greatest potential is in climate change mitigation and adaptation through increase or protection of carbon stocks in developing countries. With a few exceptions in Latin America (mainly Costa Rica, Mexico and the Andean countries), non-climate related PES mechanisms play in practice a limited role which is, however, growing. Various estimates have been presented on the potential size of the PES mechanisms to mobilize funding in developing countries (see e.g. El Lakany & et al. 2007 and Bishop et al 2008) but these estimates are highly tentative being based on expert subjective judgment. The actual development of market-based PES mechanisms in developing countries has been slow for several reasons and also the short and medium-term potential appears to be limited due to constraints related to the policy and regulatory framework, market creation and promotion, engagement of suppliers, lack of technical and business management capacities, etc. (e.g. Bishop et al. 2008; Richards & Jenkins 2007). Payment schemes may therefore have to rely on domestic public sector funding and international support but in the long run the prospects for market-based solutions appears bright and these could offer a significant potential measured in billions of dollars for sustained financing of forest environmental services.

Expansion of PES mechanisms can occur if schemes can demonstrate clear additionality (i.e., incremental conservation effects vis-à-vis predefined baselines), if PES recipients' livelihood dynamics are well understood and if trade-offs between conservation and income generation are balanced. PES mechanisms have both potential and risks as regards poverty. They can be best suited to scenarios of moderate opportunity costs on marginal lands and in settings with emerging, not-yet realized threats for forests. Actors who represent credible threats to the environment will more likely receive PES than those already living in harmony with nature which is just one of the equity issues to be addressed. PES mechanisms are a win-win instrument as they can benefit both buyers and sellers while improving the natural resource management by internalizing sustainability costs. However, they are unlikely to fully replace other conservation instruments (cf. Wunder 2007).

It is clear that PES mechanisms will be ineffective unless the legal, policy and institutional framework is improved, since lack of secure tenure, weak compliance, corruption, etc., increase risks and transaction costs. Therefore, if developing countries want to engage with PES markets, they need to finance necessary upfront investments to provide the adequate legal and policy framework, to establish necessary institutional arrangements, to set up the transaction mechanism, to build capacity among actors (including forest owners and communities), and to raise awareness among stakeholders and the general public. According to El Lakany et al. (2007) most observers argue that effective governance and secure tenure are more important drivers of sustainability than PES *per se*. Therefore, PES mechanisms are not a panacea, but they can address the market failure problem of forestry and provide a critical element of revenue to ensure SFM.

It appears that an effective and equitable solution to a public goods problem (ecosystem protection) may not be possible without appropriate compensation for the public good providers and effective regulation of the environmental and social externalities. Therefore, governments and the international community must play a much more effective role than they have done to date. (Richards & Jenkins 2007). Support is needed to generate realistic understanding of the possibilities of PES schemes, necessary preconditions for their effective implementation, and needs for financing of upfront investments in capacity building, information system, setting up of appropriate voluntary and regulatory payment mechanisms with intended equity impacts. The recent CLI on Financing of Sustainable Forest Management revealed that there also are important sovereignty issues to be addressed.

4.4 Other Emerging Instruments of Forest Financing

A range of new instruments is being developed to complement the menu of traditional lending and equity investment in the forest sector. These include (i) eco-securitization and forest-backed bonds, (ii) forest insurance and re-insurance, (iii) application of sustainability safeguards, and (iv) corporate-smallholder/community partnerships (see El Lakany et al. 2007 for description). These address some of the constraints related to forest financing in general such as upfront financing of long-term forest investments, particularly plantations, and risk management against natural disasters. Eco-securitization and insurance are important strategic instruments which would greatly facilitate private sector investment in forestry but, with few exceptions, they are still at development stage and often need external support.

5. GAP ANALYSIS

5.1 Financing Needs for Sustainable Forest Management

The difficulties of estimating financing needs for implementing sustainable forest management have been recognized in many earlier reports since the UNCED in 1992. The same kind of problems also apply to estimating financing needs for conserving biodiversity and addressing land degradation. The problem has three main dimensions:

- (i) estimating opportunity costs of preventing deforestation or forest degradation or conserving forest environmental services;
- (ii) investment needs to manage existing forests sustainably and to create new forests through planting for production purposes or for restoration of degraded forests and lands; these multiple purposes are often combined in practice; and
- (iii) upstream or complementary investment in capacity building, information systems, research, technology transfer, development of financing mechanisms and their promotion, and other development costs.

It is common in various studies and reports that these three aspects get easily mixed up, particularly when estimates from different sources using different assumptions and methodologies are combined. This tends to inflate the estimated values (see e.g., Blaser & Robledo 2008).

Several estimates for financing needs for SFM in tropical forests have been made under ITTO based on surveys of national needs estimated by governments and expert assessments based on different assumptions (cf. summary in Tomaselli 2006). They have, however, proved to be of limited value due to the wide range of estimates and the general tendency by some individual countries to overestimate their own needs as it may influence their future ODA or other incoming financial flows.

The most comprehensive effort to assess financing needs for the forestry sector has probably been carried out by UNFCCC (2007). The results were targeted at identifying opportunity costs of the main mitigation options: (i) reduced deforestation, (ii) better management of productive forest, and (iii) afforestation and reforestation as a means to increase forest area. More than two thirds of the global mitigation potential by forests is located in developing countries of which REDD can generate 40% and afforestation/reforestation and forest management 30%, each (IPCC 2007). One third of the developing country potential is located in Latin America and Caribbean due to its high deforestation rate (Appendix 5.1).

IPCC (2007) did not convert its estimates into area figures which was therefore taken up in the subsequent UNFCCC report on Investment and Financial Flows to Address Climate Change (2007). Based on Intercooperation (2007), UNFCCC presented the opportunity costs to reduce deforestation and forest degradation based on regional estimates of the key drivers (commercial agriculture, subsistence farming and wood extraction) relating them to regional/sub-regional current deforestation rates (Appendices 5.2 and 5.3)⁶¹. The opportunity costs of the 12.9 million hectares deforested per year in the tropics (FAO 2005) were estimated at USD 12.2 billion/year which does not include investment or maintenance cost of alternative land use. Neither administrative and transaction costs nor upstream associated investment and other costs for achieving emission reductions are included.

⁶¹ The reference scenario was the deforestation rate in 2000-2005 reported by FAO (2005).

In addition to opportunity costs, the costs of sustainable management of tropical (and subtropical) production forests (602 million ha) were estimated. The unit annual cost was taken as USD 12/ha resulting in about USD 7.2 billion per year. In the Non-Annex I Parties⁶² with temperate and boreal forests a higher unit cost (USD 20/ha) was used based on Whiteman (2006) resulting in another USD 1 billion. The total opportunity costs in developing countries would consequently amount to about USD 8.2 billion per year.

UNFCCC (2007) estimated the mitigation potential to tap the mitigation potential of afforestation and reforestation (A/R) 4.6-8.2 million ha by 2030. Applying IPCC's (2006) unit establishment cost were USD 654/ha for good sites (lower end) resulted in about USD 120 million/year and USD 1,580/ha for difficult sites (higher end).in about USD 350 million/year for this climate change mitigation option in non-Annex I countries. These estimates are not reflecting the entire potential of afforestation and reforestation in developing countries as they refer only to lands which are eligible for the CDM, i.e., which were not forest in 1990. The total A/R potential is significantly higher (cf. Trines 2007).

In summary, the UNFCCC (2007) estimates for developing countries⁶³ were as follows:

	USD / billion/year
opportunity costs for REDD	12.2
sustainable forest management costs	8.2
afforestation/reforestation costs	0.1 – 0.4
Total	21.0

The regional breakdown for the opportunity costs of the first two mitigation options is given in Appendix 6.2 which shows that, if the distribution of REDD payments among countries would reflect the respective REDD opportunity costs, the main beneficiaries of the mechanism would be the Asia-Pacific region (40% of the total) followed by Latin America and the Caribbean (31%) and Africa (21%) while the balance would be for the Russian Federation, Mongolia and other countries. From the equity perspective, it appears that the share of small-scale subsistence farmers, shifting cultivators and communities would be about 20% of the total if opportunity costs are used as a guide in the allocation of payments although they are assumed to account for almost a half of the global annual deforestation rate (Appendices 5.2 and 5.3).

These estimates are no more than indicative by nature and they have several limitations such as e.g. inherent weakness of opportunity costs to capture other decision criteria of land owners and communities /e.g., food security, liquidity of assets, financial and natural risk mitigation), assessment of opportunity costs of forest degradation, double counting related to forest management as opportunity cost and management cost, possible underestimation due to conservative scenarios adopted, and apparent underestimation of afforestation/reforestation as a mitigation option⁶⁴. Furthermore, the extensive variation in unit costs and local forest conditions is not probably adequately captured in the underlying estimated average regional costs for the opportunity costs and SFM costs.

The results indicate a vast gap in all areas as the current financing mechanisms cover only a fraction of the estimated needs. As a comparison, in forest management the targeted financing is mainly coming from ITTO (about USD 11 million/year) and some donor sources. In afforestation and reforestation, the CDM funding is still in initial stages with only one project approved. The BioCarbon Fund has provided about USD 10 million/year. The voluntary carbon market for forest conservation and reforestation was about USD 50 million in 2007.

The above estimates do not include agroforestry which under the UNFCCC is classified as part of agriculture. The respective estimate for required investment and financial flows would be USD 15 billion/year for this activity, mainly to pay for the upfront transition costs from traditional crop production/livestock husbandry to agroforestry which in itself would be profitable (UNFCCC 2007).

⁶² These belong to the group of developing countries.

⁶³ Non-Annex I Parties of the UNFCCC

⁶⁴ IPCC's (2007) estimate suggests only 184,000 to 348,000 ha per year for afforestation and reforestation.

A qualitative attempt to characterize investment potential in developing countries is given in Table 5.1. It illustrates where future investment in SFM, REDD, afforestation and reforestation, and forest restoration could be directed.

Table 5.1 Forest Investment Potential by Country Group

Deforestation rate\relative forest cover	Low forest cover countries	High forest cover countries
Countries with high deforestation rate	REDD: high/medium potential SFM: low/no potential A/R: high potential Restoration: high potential	REDD: high potential SFM: high potential A/R: high potential Restoration: high potential
Countries with low deforestation rate	REDD: low/no potential SFM: low/no potential A/R: high potential Restoration: medium potential	REDD: medium potential SFM: high potential A/R: low/medium potential Restoration: low potential
Countries with zero deforestation/ increasing forest area	REDD: no potential SFM: low potential A/R: medium potential Restoration: low/medium potential	REDD: no potential SFM: high potential A/R: low potential Restoration: low/no potential

Climate change adaptation would also require financing but the (additional) needs are even more difficult to estimate than in the case of mitigation options. In forest management, there would be both direct costs (protection against fire, pest and diseases, additional measures for biodiversity protection, soil and water conservation, etc.) and indirect costs (due to changes in species selection, silvicultural regimes, rotation periods, etc.) which could lead to loss of revenue compared to non-adaptation situation. UNFCCC (2007) estimated these costs for all sectors at about 2 per cent of the additional level of investment needed to pay for additional measures and relocation of operations of wood industry and pulp and paper production. These costs have not been separately estimated for adaptation in forest management. Whatever the adaptation costs in the forestry sector may prove to be, they could be partly supported by the Adaptation Fund and GEF, depending on the competitiveness and urgency of forestry measures compared to other adaptation needs. The total needs for funding of adaptation appear to be many times higher than the projected revenue from the levy limiting the Fund's role.

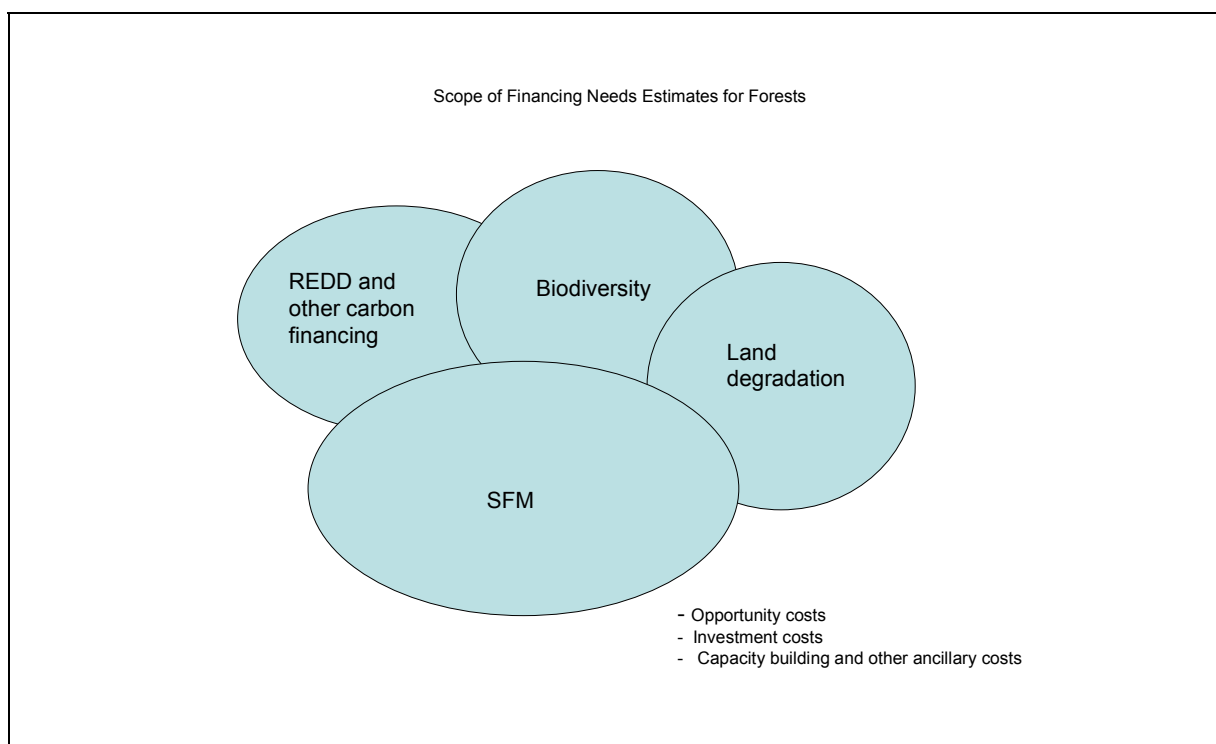
None of the above estimates consider investments in capacity building of governments, smallholders, communities and other stakeholders and other upfront investment costs which would be needed to make carbon payments to work in practice.

There are no comprehensive estimates available on financing needs to conserve forest biodiversity. The ninth Conference of Parties of the CBD held in April 2008 made a decision to carry out an assessment of the Parties' future funding needs based on their updated national biodiversity strategies and action plans. The investment needs for preventing land degradation and restoration of degraded lands which are addressed by the UNCCD and its Global Mechanism are neither estimated. However, the costs of land degradation are estimated at USD 65 billion per year and the current international investment at about USD 4 billion. Even in the absence of information on the breakdown of these estimates, it is apparent that the UNFCCC (2007) estimates summarized above for afforestation/reforestation do not cover the full needs for forest restoration in the UNCCD member countries.

In spite of the lack of information on biodiversity and land degradation, it is important to recognize that there is a substantial overlap between the investment and other financing needs of (i) climate mitigation and adaptation, (ii) sustainable forest management, (iii) conservation of biodiversity in forest ecosystems, and (iv) prevention of land degradation and restoration of degraded lands (Figure 5.1). In the context of forest carbon financing, this overlap is referred to as co-benefits. In the context of SFM, climate and biodiversity benefits are part of the multiple management objectives. In the context of land restoration forest interventions result also in wood and NTFP production, new habitats are created for biodiversity, etc. Among these different strategic areas related to forest ecosystems, there is also a

significant element of overlap in administrative and transaction costs and upstream associated investment and other costs to make various financing mechanisms effective (resource assessment and inventories, monitoring systems, planning, education and training, research and development, transfer of technology, etc.). Adding up various “sectoral” estimates would therefore need an analysis of overlap and synergies in implementation measures to avoid double counting.

Figure 5.1 Overlapping Scope of Estimates of Financing Needs for Forests



5.2 Geographic Analysis

The geographic analysis was made based on the data on the presence of individual bilateral and multilateral sources⁶⁵ in recipient countries during the period of 2000-2007⁶⁶ as the quantitative survey data did not allow an adequate analysis for the funding volumes.⁶⁷ Presence is measured in terms of actual funding of a source in the country during the period 2000-2007. The results are reported in Table 5.2 for geographic regions and in Appendix 5.4 for economic and forestry grouping of countries.

In general, most countries have some ODA flows to forests but there are 30 countries where no source has been reported. Most of them are small island states, particularly in the Pacific and the Caribbean. The highest donor presence is found in South and Southeast Asia where there are on average 8.4 external sources per recipient country. Also Central and South America are relatively well covered by donor participation. In addition to small island states, low levels of financing source presence are found in Africa as a whole and Western and Central Asia.

With regard to income level (Appendix 5.4), external sources presence is higher in low income countries than in middle income countries but the difference is not very substantial (83-84% and 73-80% of the total number of countries in the group, respectively). However, the least developed countries have on an average less external financing sources utilized per country (3.7) than in other low income countries (5.3) and lower middle income countries (4.2). This may mean more risks in financial flows due to dependence on fewer donors.

⁶⁵ The sample data covered 19 financing sources.

⁶⁶ In the case of some donors the analysis included also recipient countries before 2000.

⁶⁷ See section X on the breakdown of OECD DAC data which however does not cover the total ODA flows.

Surprisingly, the degree of indebtedness of a country correlates negatively with the average number of donors; i.e., the higher degree of indebtedness, the less external forest financing sources active in the country. This may be explained by the fact that many highly indebted countries have little forests left and therefore their importance is not recognized.

Table 5.2 Geographic Analysis of Recipients of External Bilateral and Multilateral Forest Financing by Region

Region	Total number of countries	Number of countries with no external source	Average number of sources per country
Eastern and Southern Africa	18	2	4.4
Northern Africa	16	2	2.9
Western and Central Africa	22	1	3.5
Africa	56	5	3.6
South and Southeast Asia	16	3	8.4
Western and Central Asia	19	3	1.9
Asia	35	6	4.9
Eastern Europe	10	1	2.3
Caribbean	16	7	0.9
Central America	6	0	6.7
South America	12	0	7.0
Latin America	34	7	4.1
Oceania	16	11	0.8
Grand Total	151	30	..

Source: Compiled based on 19 external sources of ODA in the survey data

There is significantly more donor presence among the countries which are net exporters of forest products compared to net importers. Net exporting countries also have more external sources per country (4.7) than net importers (3.6). This may also be explained by the limited forest resources in the latter countries.

Similar observations can be made on the degree of forest cover. Countries which have less than 20% of their territory under forests have clearly less external financing agency presence than countries where the forest cover share is 20-60%. However, when the forest cover is above 60%, the presence of bilateral and multilateral sources gets again reduced suggesting less interest in supporting SFM in production forests.

Most countries in which deforestation is recorded have fairly strong financing agency presence (95% of countries with 5.1 sources/country on average). But also countries in which forest area is expanding have significant presence of external financing sources (81% of countries with 2.9 sources/country).

Also protected area coverage of the total forest area has an influence on external financing flows. All the countries where less than 5% of forests are protected are ODA recipients with 5.5 sources averaging per country. When the protected area share exceeds 20%, donor presence is reduced but still significant.

The above analysis by country groups was complemented by compilation of data by recipient countries (Table 5.3). It shows that there are a number of countries where external funding sources have a particularly strong presence, such as Indonesia, Brazil, Viet Nam, Kenya and Ethiopia. Among the countries with 10 or more sources active in forests, there are only six⁶⁸ which belong to the group of least developed countries (out of a total of 50). More than five forest financing agencies per country are found in another ten least developed countries.

In general, the results, together with the review of recipients of the bilateral ODA (section 4.2.3), suggest the following tentative conclusions on gaps:

⁶⁸ Cambodia, Ethiopia, Laos, Nepal, Tanzania and Uganda.

- A large number of low forest cover countries do not receive substantial external support in managing and conserving their forests or tree resources.
- Many small or medium-sized countries with still relatively large forests have only limited external support.
- Many developing countries with high deforestation rates (above 1%/year) already have significant donor presence but there are a number of them where external support is absent or limited (e.g. Comoros, Mauritania, El Salvador, Myanmar).
- Many countries with high or medium forest cover (above 40%) have only limited presence of external financing agencies (e.g., Angola, the Central African Republic, Congo Rep., Equatorial Guinea, the Democratic Republic of Korea, Gambia, Guinea-Bissau, East Timor, Trinidad & Tobago).
- Countries with very low protected area share in the total forest area but lacking external support include e.g., Chad, Sierra Leone, Jamaica, Myanmar and Kazakhstan.
- With few exceptions, small island countries rarely receive support to forests although their importance in maintenance of biodiversity, watershed protection and adaptation to climate change is often critical.
- Low level of external sources presence in Africa and Western and Central Asia suggest also general financing gaps in these regions.
- Many gaps are presumably partly explained by political reasons and partly by weak governance which does not allow effective participation of external bilateral and multilateral funding agencies in a complex natural resource sector like forestry, often characterized by strong vested interests resisting any pressures for policy and institutional reforms.
- REDD is unlikely to fill the gaps in the existing external financial flows if its eligibility criteria will emphasize forest-rich high-deforestation countries which mostly belong the group of middle income countries (cf. Table 5.1)

The above observations should be considered with care as the pure presence of external financing sources in a country does not mean that adequate support is available. Absence of external support to forestry is explained by a multitude of reasons, not least lack of expression on demand for forest financing in poverty reduction strategies and national development plans. Nevertheless, the results indicate that there are significant gaps in the existing external financial flows to forests.

There is no comprehensive information on the flow of private financing to developing countries. It is however apparent that plantation investments are heavily concentrated in a small number of countries, mostly in Latin America and Asia. There are indications that investments in some African countries are under consideration by institutional investors through TIMOs. Foreign capital in industrial capacity is much more broadly invested across countries in Asia and Latin America but Africa is clearly lagging behind.

5.3 Thematic Areas

Only fragmented information on the thematic areas covered by the current external forest financing flows is available. No more than ten donor agencies were able to provide some disaggregated data either following the DAC classification of forestry ODA or their own thematic classification. The DAC classification does not allow meaningful strategic analysis of forestry ODA (see section 3.2.1). Elaboration of consolidated data by thematic areas would require an analysis of project portfolios of those aid agencies with significant forest ODA. This would involve analysis of hundreds of projects which was beyond the possibilities of this study. Nevertheless, the following observations can be made based on the review of available information:

Table 5.3 Presence of Bilateral and Multilateral Donors Providing Forest ODA in Developing Countries in 2000-2007

Number of donors in the country	Number of recipient countries	Countries in the group
15	1	Indonesia
14	1	Brazil
13	1	Viet Nam
12	2	Kenya, Ethiopia
11	7	China, Cambodia, Nepal, Philippines, Honduras, Nicaragua, Bolivia
10	5	Tanzania, India, Laos, Mexico, Uganda
9	3	Guatemala, Ecuador, Peru
8	4	Malawi, Mozambique, Rwanda, Burundi
7	7	Cameroon, Malaysia, Pakistan, Sri Lanka, Costa Rica, Panama, Papua New Guinea
6	8	Madagascar, Mali, Senegal, Bhutan, Russian Federation, Chile, Colombia, Guyana, Paraguay
5	8	Zimbabwe, Niger, Côte d'Ivoire, Democratic Republic of Congo, Gabon, Thailand, Albania, Venezuela
4	13	Namibia, Republic of South Africa, Zambia, Benin, Nigeria, Afghanistan, Georgia, Kyrgyz, Turkmenistan, Cuba, Argentina, Surinam, Uruguay
3	13	Swaziland, Eritrea, Morocco, Sudan, Cap Verde, Guinea, Liberia, Mongolia, Bangladesh, Armenia, Iran, Bosnia-Herzegovina, Fiji
2	19	Chad, Burkina Faso, Central African Republic, Republic of Congo, Guinea-Bissau, Sierra Leone, Republic of Korea, Myanmar, Jordan, Kazakhstan, Tajikistan, Uzbekistan, Croatia, Serbia, Ukraine, Dominican Republic, Trinidad & Tobago, Belize, El Salvador
1	31	12 small island states, Saudi Arabia, Syria, Yemen, Belarus, Kosovo, Macedonia, Angola, Botswana, Egypt, Libya, Mauritania, Tunisia, Gambia, Brunei, Lebanon, Oman, Palestine
0	30	25 small island states, Algeria, Somalia, Western Sahara, Equatorial Guinea, Democratic Republic of Korea
Total	151	

Source: Compiled based on 19 external sources of ODA in the survey data

- A considerable share of forest ODA is allocated to forest conservation which is compatible with the principle of supporting enhancement of global public goods.
- In relative terms, SFM outside protected areas appears to be substantially less supported by external funding. Only fairly few donors are supporting SFM in natural tropical production forests and their funding is clearly insufficient. However, these forests generate important public goods but their maintenance is not compensated to forest managers.
- Private sector financing will be able to take care of most of the investment needs of productive fast-growing plantation development in those countries which have a comparative advantage and adequate investment climate.
- Trade-related initiatives like forest certification will assist producers to internalize SFM costs in product prices but, as long as the market share of certified products remains small in developing countries and low-cost competition continues from illegally and unsustainably produced, this process will take time. In order to accelerate adoption of certification and verification of legality, external support would be required.
- Financing of forest restoration will remain a major gap, particularly in arid and semi-arid regions due to their low competitiveness for production of wood and NTFPs as well as PES schemes like REDD.
- New PES mechanisms, particularly REDD, have a major potential in providing financing for forest conservation but there is uncertainty about the funding flows and their co-benefits (other aspects of SFM) is unclear.

- PES schemes will not cover necessary upstream investment in capacity building, implementation of policy reform, strengthening of governance, market creation for environmental services, etc. and their potential is also constrained by the principle of payment upon performance.
- The upstream investment in policy reforms, capacity building and other national measures of the NLBI appears grossly insufficient.
- While numerous sources exist for education and forest conservation, accessing them is often constrained by eligibility criteria and procedural issues which act as barrier, particularly for forest communities, smallholders and local NGOs and community-based organizations.

In order to achieve the goal that SFM becomes gradually self-financing, new instruments require substantial initial upfront investment to develop and pilot suitable modalities in specific country conditions. This typically involves analytical work, organization of stakeholder participation and engagement, planning, building up necessary information systems and associated monitoring and verification systems as well as various capacity building activities. Some instruments like REDD and some countries are likely to benefit from external support in this field but not to an extent required by countries to implement SFM (cf. section 4.2.4).

Targeted actions to build up and implement PES systems need to be complemented by mainstreamed upfront investments which cover the broader needs of achieving SFM. They involve implementation of necessary policy reforms, institutional strengthening, land-use zoning and planning, strengthening of forest land tenure, improvement of forest governance and investments in restoration of degraded lands, infrastructure, scaled-up capacity building, education, training and extension, research, etc. Substantial new investments in areas that are central to SFM implementation (including new instruments like REDD) include, amongst others:

- (i) Implementation of measures to shift agribusiness companies and landowners away from clearing of rain forests towards planting on non-forest lands including improvement of agricultural productivity.
- (ii) SFM-based production of timber and non-timber forest products that will create sustainable livelihood opportunities for forest-adjacent, low-income rural families that currently depend on subsistence agriculture and income from illegal logging.
- (iii) Establishment and effective implementation of adequate forest ownership/use rights for communities, smallholders and forest dwellers, including those living in protected areas.
- (iv) Land use zoning and planning in forest areas and respective assessment and monitoring systems
- (v) Complementary investments in non-forest sector programs (agriculture, transportation, mining, energy, etc.) to ensure inclusion of specific provisions for forest protection.
- (vi) Building institutional, legal and technical capacities of governments and private and communal forest stakeholders to effectively protect and manage forests as well as to undertake strategic and management planning and control of their forest resources.
- (vii) Improving forest governance and forest sector transparency and control (e.g. adjustment of legal framework, forest inventory, information and monitoring systems, log tracking systems, certification, supervision and control) and strengthening of institutional, legal and technical capacities of governments and other forest stakeholders
- (viii) Restoration of degraded forest ecosystems and establishment of timber/pulpwood plantations for carbon sequestration, wood production and conservation, including by engaging local communities and smallholders.
- (ix) Improvement and restructuring of forest-based industries to support efficient production and procurement of sustainably produced raw materials, engagement of farm forest owners and other smallholders through company/community/smallholder partnerships, and transfer of technology
- (x) Rural development, social services, infrastructure as well as administration and management skills of forest communities
- (xi) Development of innovations and research to improve knowledge on SFM for protection of forest carbon stocks, carbon sequestration and other forest products and services
- (xii) Development and implementation of market-based and other voluntary mechanisms for payments for environmental services, including monitoring and verification systems
- (xiii) Protection of forests against fires, pests and diseases, invasive alien species and other external threats.

Box 5.1
Sustained Financing of Sustainable Forest Management

Initial upfront investment of new financing instruments	Mainstreamed upfront investment for SFM	Sustained financing
<ol style="list-style-type: none"> 1. Analytical work (DD drivers, barriers to SFM, PES market potential, etc.) 2. Stakeholder participation and engagement 3. Planning (nfp, specific national strategies, e.g. REDD, bioenergy, forest biodiversity) 4. Information base (resource assessment, baselines, reference scenarios) 5. Monitoring and verification system design 6. Safeguards and SFM guidelines development 7. Initial capacity building 8. Programme and project design 	<ol style="list-style-type: none"> 1. Implementation of policy reforms (incl. cross-sectoral impacts on forests) 2. Restructuring of institutions 3. Land use zoning, planning and monitoring of land-use change 4. Strengthening of forest land tenure (demarcation, titling) 5. Strengthening of law enforcement 6. Restoration of degraded lands and forests 7. Strengthening of stakeholder constituencies (smallholders, forest communities, civil society, private sector) 8. Infrastructure development 9. Forest protection (fire, pests, diseases, etc.) 10. Education, training and extension - smallholders, communities, SMEs - forest managers 11. Research and innovation (silviculture, harvesting, utilization) 12. Market-based and other voluntary instruments and implementation of SFM by smallholders, community forests, SMEs, etc. 14. Company-community/smallholder partnerships 15. Implementation of monitoring and verification systems 	<p><u>Forest products and services</u></p> <ol style="list-style-type: none"> 1. Timber 2. Non-timber forest products 3. Ecotourism 4. Other services <p><u>PES schemes</u></p> <ol style="list-style-type: none"> 1. REDD payments 2. Sink creation payments (afforestation, reforestation, forest management) 3. Biodiversity offsets 4. Landscape offsets 5. Watershed conservation offsets 6. Bundled services

In order to create on-the-ground change, these measures require thorough consultations and dialogue with all the forest stakeholders including indigenous and other forest-dependent peoples, and significant resources for capacity building.

Most of the above investments are core investments for all the mitigation options by either reducing emissions or increasing carbon sequestration, or by creating necessary preconditions for achieving climate benefits. For instance, improved governance and forest tenure rights are necessary for REDD, SFM, afforestation and reforestation or forest restoration. Investment in the establishment of clear and secure land tenure is equally necessary for all the mitigation options. Reform processes are politically sensitive, technically complex and resource demanding and therefore adequate resources are needed for their successful implementation.

The thematic gaps in the present and emerging financial flows are not adequately covered by the existing financing sources and mechanisms as shown in (Table 5.4). Adequate resources are not, however, presently adequately mobilized for countries to implement mainstreamed upfront investment for SFM. It is apparent that a combination of financing instruments will be needed to cover the country needs, including grants, loans and other instruments, as it is unrealistic to assume that grant financing from bilateral ODA will be available in required quantities to cover all the needs. On the other hand, borrowing is not an option for many countries due to their other pressing national priorities. Traditional ODA will continue to play an important role but it is likely to focus on capacity building and various catalytic activities also in the future. Therefore, bilateral ODA cannot be expected to finance mainstreamed upfront investment on a large scale.

Table 5.4 Summary of Main Forest Financing Sources and their Gaps

Source	Annual funding volume (USD million)	Main focus areas (Forestry)	Gaps
Bilateral donors	1,100	Capacity building, catalytic investments.	Mainstream investment,
World Bank Group	587	Poverty reduction, sustainable development, global environmental services	Mainstream investment.
Regional development banks	94	Forestry for sustainable economic development, environmental conservation	Mainstream investment.
GEF	109	Agreed incremental global benefits from biodiversity, land degradation and climate change.	Investment in SFM in production forests.
International Tropical Timber Organization (ITTO)	16	Capacity building for SFM from sustainably managed forests.	Mainstream investment.
BioCarbon Fund (BioCF)	10	Afforestation and reforestation pilot projects, avoided deforestation.	Mainstreaming to meet the demand for in developing countries.
Forest Carbon Partnership Fund (FCPF). (Target USD 300 mill.)	[25]	REDD readiness building REDD carbon emission reduction offsets.	Broader capacity building beyond REDD mechanisms upstream investment for achieving emission reduction.
UN REDD Program	[12]	Specific capacity building for REDD mechanisms through technical assistance	Capacity building for implementing SFM for REDD.
Strategic Climate Fund (SCF) - PPCR	[80]	Improve climate resilience. Incentives for maintaining carbon-rich ecosystems.	Forest Investment Program under planning.
Clean Technology Fund (CTF)	[1,000 – 2,000]	Incentives for clean technologies (biodiversity utilization and industry efficiency).	Forests are not covered.
FAO and NFP Facility	48	Technical assistance, support to national forest programs	Mainstream investment.
Adaptation Fund	..	Adaptation measures in countries that are particularly vulnerable to the adverse effects of climate.	Coverage will possibly include ecosystem services
UNFCCC/Clean Development Mechanism	::	Afforestation/reforestation offsets	Only one forest project approved.
Conservation funds ⁶⁹	..	Biodiversity hotspots and other protected and conservation.	Poverty, forests outside protected areas.

Note: Private sector, philanthropy and similar sources are not included.

6. IMPLICATIONS OF ALTERNATIVE COUNTRY ELIGIBILITY CRITERIA FOR FUTURE FOREST FINANCING

6.1 Scope of the Analysis

The amount and nature of the investment gap varies between countries depending on their local conditions for making use of various climate change mitigation measures. Country eligibility criteria are therefore an important parameter as they define to what extent the forest mitigation potential can be tapped. The criteria to be selected will also have implications for other environmental aspects than carbon, social and economic development, and equity between countries. E.g., low forest cover countries and countries which have already addressed deforestation, such as high forest cover countries with low deforestation rates (HFLD) have limited possibilities to access carbon credits from REDD which may mainly benefit high forest cover countries with high deforestation rates (HFHD).

⁶⁹ E.g., Critical Ecosystem Partnership Fund, Amazon Fund, Congo Basin Forest Fund, etc

These countries are mostly middle income countries and they are already the principal beneficiaries of the existing external funding flows to forests. Tapping the full potential of forests for climate change mitigation would require instruments which can make countries with different forest conditions eligible for financing.

In this chapter an effort is made to explore two key factors which have been discussed as possible country eligibility criteria, i.e. deforestation rate and degree of forest cover in the country. There are no agreed definitions for what is low and high deforestation rate. In this case countries were divided into three groups according to their deforestation rate:

- High deforestation countries with a deforestation rate of 0.5% per year or more
- Low deforestation countries with a deforestation rate of less than 0.5% per year
- Other countries where forest area has remained stable or increase (deforestation rate 0 or negative)

The deforestation rate refers to net deforestation rate (annual change of forest cover) in 2000-2005 as reported in the FAO Global Forest Resources Assessment (FRA) 2005 (FAO 2005). From the carbon emission perspective, it would have been more logical to use gross deforestation as the basis but the country-level data is not available. In order to illustrate the importance of this factor, it is noted that the global net deforestation has been 7.5 million ha per year. The underlying components for this change are: (i) (gross) deforestation, i.e. all the forest cover which has been lost during the period, (ii) afforestation and reforestation on lands which were not forest in the beginning of the period, and (iii) natural expansion of forest area during the period. The gross rate of global deforestation according to FRA is about 13 mill ha/year. Plantations are estimated to have increased by 2.8 mill. ha/year, leaving 5.5 million ha for other factors.

For an assessment of REDD options, the impact analysis should use gross deforestation as it is the source of emissions. However, gross deforestation rates are not reported in the FRA.⁷⁰ Therefore, any conclusions to be made based on the data in this chapter should be used with caution. The problem is probably particularly serious in the large countries which have both large annual (gross) deforestation area and large annual forest expansion area (like Brazil or Indonesia). In countries where expansion of forest area is not significant, there is less source of error. Further analysis on country level should be carried out to improve the available data.

Countries were also classified according to the degree of their forest cover. There are no agreed definitions applying quantitative criteria for what is low or high forest cover country. Therefore, four categories were adopted for forest cover groups applying 20% intervals: less than 20%, 20-40%, 40-60% and higher than 60% of the total area of the country. This allows detailed assessment but in the following analysis, only two groups are discussed for simplicity: (i) high forest cover countries (more than 40%) and (ii) low forest cover countries (less than 40%).

A total of 156 countries were included in the analysis. The resulting deforestation rate-forest cover matrices were calculated for five indicators:

- Number of countries
- Total forest area of the countries in the group
- Total deforestation area (net) of the countries in the group
- Forest carbon stock of the countries in the group
- Total rural population of the countries in the group

The results are given in Table 6.1. For carbon emissions deforestation area is used as a proxy, for sustainable forest management for enhanced carbon sequestration both total forest area and forest carbon stock are used, and for social impacts the total rural population is used as a proxy. It goes without saying that this is a very preliminary assessment on some aspects of possible country eligibility criteria and the work should be further expanded with additional indicators and more data. Therefore, the following results are no more than indicative by nature.

⁷⁰ We cannot even make a (partial) correction in the FRA net figures based on the data on rate of forest planting because planted forest has been established both on previously forested land and on bare land.

Table 6.1 Forest Area, Deforestation, Forest Carbon Stock and Rural Population by Country Groups

Forest cover groups	Annual deforestation rate			
	Above 0.5%	Less than 0.5%	0 or increase	Total
Number of Countries by Country Group				
< 20 %	19	6	40	65
20-40%	15	7	21	43
40-60%	18	6	4	28
>60%	6	3	11	20
Total	58	22	76	156
Total Forest Area by Forest Cover Country Group (million ha)				
< 20 %	73.65	42.31	77.68	193.64
20-40%	183.66	140.75	324.09	648.50
40-60%	842.45	326.70	6.05	1,175.20
>60%	49.87	50.51	35.10	135.48
Total	1,149.63	560.27	442.91	2,152.82
Total Deforestation Area by Forest Cover Country Group (million ha per year)				
< 20 %	-1.12	-0.17	0.07	-1.22
20-40%	-2.05	-0.46	4.48	1.98
40-60%	-7.80	-0.59	0.01	-8.38
>60%	-0.27	-0.03	0.01	-0.29
Total	-11.23	-1.26	4.57	-7.92
Total Forest Carbon Stock by Country Group (GtCO₂)				
< 20 %	4.18	3.23	3.82	11.23
20-40%	12.48	8.20	16.93	37.61
40-60%	75.38	39.74	0.43	115.55
>60%	1.73	9.31	8.68	19.72
Total	93.76	60.48	29.87	184.11
Total Rural Population by Country Group (million)				
< 20 %	323.3	139.1	239.0	701.3
20-40%	159.3	105.9	1,664.2	1,929.3
40-60%	244.5	65.1	5.2	314.8
>60%	11.1	11.4	1.8	24.2
Total	738.1	321.4	1,910.1	2,969.7

Explanatory notes:

- The table is calculated based on data in FAO Global Forest Resources Assessment 2005. For forest area and forest carbon stock, the data refers to year 2005; the annual deforestation rate is calculated for the period of 2000 to 2005; and the rural population data is for 2004.
- Deforestation rate is calculated based on the change of forest cover between 2000 and 2005. It is a net measure as it also incorporates afforestation/reforestation on previously non-forest land and natural expansion of forest. The actual total deforestation rate is therefore higher than the above figures indicate.
- Deforestation rate categories (above or equal to 0.5%/yr and less than 0.5% per year) have been arbitrarily established in the absence of agreed definitions of high and low deforestation countries.
- Forest cover groups have also been arbitrarily established in the absence of common definitions (e.g. for low forest cover countries or high forest cover countries).
- The data on carbon stock includes carbon in above-ground and below-ground biomass as well as carbon in dead wood.

The elaborated statistical data allows some tentative conclusions on possible country eligibility criteria with regard to REDD and SFM in the existing forests. However, the data did not allow similar assessment on the potential implications of inclusion of forest restoration, and afforestation in the financing scheme.

6.2 Implications of Criteria Related to Deforestation Rate and Forest Cover

6.2.1 Deforestation Rate

If only high deforestation rate (0.5%/yr or more) countries are included in the financing schemes, it would have the following implications:

- Only about one third of the developing countries would have access to funding.
- Most of the annual deforestation area (90%) in developing countries would be covered by the scheme, i.e. 11.2 million hectares per year
- These countries have a total forest area of 1.1 billion ha accounting for more than half of the total forest area (53%) of the 156 countries.
- These countries have a total carbon stock of 93.8 billion tCO₂ accounting for more than half of total carbon stock of all the countries in the analysis. This forest carbon stock could be managed for enhancement of carbon sequestration through their sustainable management.
- These countries account for about a quarter of the total rural population of the countries included in the analysis corresponding to about 738 million people.

If low deforestation rate (less 0.5%/yr) countries are included in the financing schemes, it would have the following implications:

- Twenty-two more countries would be included in the financing scheme.
- Another 1.3 million hectares of forest lost per year due to deforestation could be covered by the scheme.
- Another 560 million hectares of forest area could be eligible SFM for carbon enhancement with a total carbon stock of 60.5 billion tCO₂.
- Another 321 million rural people are found in these countries

If the other countries with zero net deforestation rate or countries where forest area is increasing, are included in the financing scheme:

- Further 443 million ha of forest land could be included with a carbon stock of 30 billion tCO₂ for enhancement of carbon sequestration
- In these countries there are another 1.9 billion rural people

6.2.2 Degree of Forest Cover

In this context we consider only two groups; (i) countries with a forest cover of higher than 40% of the total land area, and (ii) countries with forest cover of 40% or less. If only the high forest cover countries are included in the financing scheme

- 48 countries could participate
- Their total annual deforestation is 8.7 million ha/year or about 70% of the total deforestation area
- Their total forest area is 1.3 billion ha or about 60% of the total of all the 156 countries
- These forests have a total carbon stock of about 135 billion tCO₂ (70% of the total)
- These countries house 39 million rural people or 11% of the total of all the countries included

If the countries with low forest cover (forest cover 40% or less) are included in the financing scheme

- 108 countries more countries would be included
- Their total forest area is about 840 million hectares which could be integrated in the scheme for enhancement of existing carbon stock through SFM

- The existing carbon stock of these forests is about 49 billion tCO₂ which could be thereby significantly increased.
- The possibility of access by these countries to REDD would be limited as their deforestation rate is usually low and in many countries the forest area is expanding.
- These countries have a very large potential for increasing carbon sequestration through afforestation and reforestation as they tend to have large areas of marginal lands which are not used for other purposes and these lands are often degraded.
- These countries have a total rural population of 2.6 billion or almost 90% of the total of all the 156 countries included.

The above analysis is exploratory and suffers from many weaknesses. However, it shows that if a forest financing scheme is applied only for high deforestation high forest cover countries, huge opportunities to use forests for climate change mitigation are missed. These 24 countries account for

- Only two thirds of the total deforestation area
- Only about 40% of the total forest area and the total forest carbon stock which could be used for carbon sink enhancement through sustainable forest management
- Only 8.6% of the total rural population of the 156 countries included in the analysis

7. CONCLUSIONS

The Principles of the Paris Declaration on Aid Efficiency are not yet adequately applied to align and harmonize ODA to forests resulting in high transaction costs both for donor agencies and recipient countries. Only national leadership to coordinate various financing sources and external initiatives can ensure effective coordination. The FIP would play an important role in contribution to financing of those investment which cannot be funded from other sources.

National forest programmes (nfp) provide a useful framework for donor harmonization and in-country coordination of external financial support to forestry but only in a small number of countries they appear to be integrated with broader national development and poverty reduction strategies. For the FIP, nfps and associate national forest financing strategies would provide a useful national level framework for identifying potential needs for FIP financing.

The existing and emerging sources of funding for forests have major thematic and geographic gaps. The main thematic bottleneck is financing of mainstream investment of SFM while conservation and capacity building are already covered from a variety of sources, albeit not to a required extent. Access to funding of mainstreamed upfront investment will be critical in developing countries so that they can achieve self-financing of SFM in the medium and long run depending on the local conditions. This "self-financing" would be based on revenue generated for forest owners and managers from forest goods and services, including payments for global public goods generated by forests.

The main geographic gaps are found in low forest cover countries and least developed countries. These gaps are strategically important as significant opportunities for maintenance and enhancement of global and local public goods of forests remain untapped while the forests of these countries are being degraded. Development of new financing instruments should consider addressing these gaps.

By addressing the underlying causes of deforestation and unsustainable forest practices, the proposed FIP could finance transformational investments in developing countries to initiate change towards a low carbon emission and climate resilient SFM. Such investments will only be effective if made within the context of an enabling legal, institutional framework and conducive investment climate within a strong governance framework in order to leverage follow-up action by the private sector, forest communities and smallholders. For forest actors and other stakeholders as recipients, access to funding sources and transaction costs are crucial. The currently available funding sources have not adequately considered this as their design is usually driven by internal priorities and procedures.

For effective implementation of REDD and other forest related mitigation measures, developing countries would need support through both (i) technical assistance and (ii) on-the-ground investment programs that build the capability of countries to achieve quantified reductions in emissions from avoided deforestation and degradation by means of SFM. The latter could be the proposed focus of

the FIP as many current and emerging funding sources (e.g., the Forest Carbon Partnership Facility, the UN REDD Program, bilateral initiatives, etc.) will provide significant technical assistance to REDD implementation.

If new forest financing schemes targeted at climate change mitigation are limited to high deforestation/high forest cover countries, huge opportunities for emission reduction and carbon sequestration would be missed. Furthermore, the social, environmental and economic co-benefits of forest carbon financing would not flow to where they are most needed, i.e. the least developed countries and the low forest cover countries.

Various recent funding initiative related to forests suggest that the tendency is towards more fragmentation rather than consolidation. This is a cause of concern for donors, recipient countries and their beneficiaries as well as existing international organizations working in the financing area. There is a risk for overlapping mandates, lack of recognition of competitive advantages, confusion among potential providers of funding to new initiatives, and unhealthy competition for 'good' projects. Independently from whatever new international financing arrangement may be set up, there is a need to harness synergies between the existing multilateral and international bodies and processes related to forests through improved coordination, cooperation and collaboration. There is a need to harness synergies between various financing mechanisms and instruments in climate change, biodiversity, land degradation and sustainable forest management. The current cooperative arrangements appear to be in need of strengthening to make the involved parties to respond to this challenge in practice. Adequate coordination and exchange of information will be the key to ensuring that the various initiatives targeted at forest sector responses to the climate change agenda can become effective.

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Bilateral and Multilateral Financing to Forests by Source 2000-2007

Sources	2000-2002	Share %	2005-2007	Share %	Change
USD 1 000 at 2006 exchange rates and prices					
	USD 1000/yr	2000-02	USD 1000/yr	2005-07	%
Bilateral					
Australia (1)	14 199	1,48	9 804	0,89	-30,96
Austria (2)	1 969	0,21	969	0,09	-50,80
Belgium (3)	1 930	0,20	1 982	0,18	2,69
Canada (4)	14 895	1,55	9 303	0,84	-37,55
Denmark (5)	19 794	2,06	6 974	0,63	-64,77
European Commission (25)	101 233	10,55	115 662	10,48	14,25
Finland (6)	20 306	2,12	12 707	1,15	-37,42
France (7)	21 291	2,22	19 337	1,75	-9,17
Germany (8)	130 914	13,65	126 007	11,42	-3,75
Greece (9)	81	0,01	3	0,00	-96,69
Ireland (10)	108	0,01	4	0,00	-96,04
Italy(11)	415	0,04	n.a.	0,00	-100,00
Japan (12)	328 989	34,29	530 502	48,08	61,25
Luxembourg (13)	n.a.	0,00	1 233	0,11	
Netherlands (14)	111 724	11,65	88 479	8,02	-20,81
New Zealand (15)	3 050	0,32	5 515	0,50	80,82
Norway (16)	10 225	1,07	5 116	0,46	-49,97
Portugal (17)	452	0,05	1 097	0,10	142,62
Spain (18)	1 927	0,20	1 282	0,12	-33,48
Sweden (19)	10 486	1,09	10 485	0,95	-0,01
Switzerland (20)	30 222	3,15	30 634	2,78	1,36
United Kingdom (21)	39 226	4,09	28 731	2,60	-26,76
United States (22)	95 902	10,00	97 601	8,85	1,77
Subtotal	959 339	100,00	1 103 425	100,00	15,02
Multilateral					
AfDB (23)	35 793	10,68	72 745	9,02	103,24
AsDB (24)	6 883	2,05	12 383	1,54	79,90
GEF (26)	104 100	31,07	109 450	13,57	5,14
IDB (27)	2 114	0,63	9 115	1,13	331,28
ITTO (28)	16 612	4,96	16 317	2,02	-1,78
IFC (29)	78 000	23,28	324 000	40,16	315,38
WB (30)	91 500	27,31	262 667	32,56	187,07
Subtotal	335 002	100,00	806 677	100,00	140,80
Grand total	1 294 341		1 910 102		47,57
Bilateral share	0,7412		0,5777		

Data sources:

- 2000 data from OECD/DAC. 2001-2006 data from AusAID. The upper year of fiscal year is used.
- Data from Federal Ministry of Agriculture, Forestry, Environment and Water Management, Austria.
- Data from OECD/DAC.
- 2000 data from OECD/DAC. The upper year of the fiscal year is used.
- Data from Danish International Development Agency.
- Data from Ministry of Foreign Affairs.
- According to the Ministry of Foreign Affairs, the annual average ODA during the period 2003-2007 is 15.4 million euro per year. The same amount is used for the period 2000-2002 in the absence of a better estimate.
- Data the Federal Ministry for Economic Cooperation and Development (BMZ). The total was compiled based on project level commitments. The project level total commitment was divided by the number of years of the project period
- Data from OECD/DAC.
- Data from OECD/DAC.
- Data from OECD/DAC.
- 2000 data from OECD/DAC. 2001-06 data from the Ministry of Foreign Affairs. Voluntary contributions to ITTO in USD are excluded.
- Data from OECD/DAC.

- 14 Data from the Ministry of Foreign Affairs of the Netherlands, Environment and Water Department, Natural Resources and Ecosystem Management Division (DMW/NE).
- 15 Data from NZAID.
- 16 Data from Ministry of Foreign Affairs, Norway. Multilateral aid included.
- 17 Data from the Ministry of Foreign Affairs through the Ministry of Agriculture.
- 18 Data from OECD/DAC.
- 19 Data from the Swedish International Development Agency, SIDA (1 000 SEK)
2000-2005 data from Direktion für Entwicklung und Zusammenarbeit, DEZA. 2006 data from OECD/DAC. Only 2005 data is used in the annual average for 2005-2007 (CHF million). Data does not include voluntary contributions to ITTO and some smaller bilateral projects funded by the State Secretariat of Economic Cooperation, SECO.
- 21 Data from DFID.
- 22 USAID's forestry fundings. Other US funding agencies are not included because there is no complete information on their fundings in the period 2000-2006. Debt-for-nature programs estimated about USD 9 millions annually for tropical forest conservation.
- 23 Data from S.Z. Moussa (2008) available at http://www.itto.or.jp/live/Live_Server/3280/ADB_PPT.ppt (1000 UA: Unit of Account).
- 24 Data from AsDB project database 2000-2007.
- 25 2002-2007 data from EuropeAid, EC (1000 €).
- 26 Data from GEF (2005). Annual commitments were calculated by dividing the total commitments of the commitment period by the number of years of the commitment period.
- 27 For ongoing projects, the amount disbursed up to June 30, 2008 was obtained by dividing the total by the number of years between the approval date and the date of updating the database (June 30, 2008). For completed projects, the amount disbursed was obtained by dividing the total by the number of years.
- 28 Data from ITTO.
- 29 Data from IFC.
- 30 Data from the World Bank. FY July to June is recorded as commitment for the upper year.

Potential of Climate Change Mitigation Measures of Forestry Activities in Non-Annex I Countries

Region	Reduced deforestation	Forest management	Afforestation	Total	Share %
	- million tCO ₂ / yr in 2030 -				
Central and South America	1,845	550	750	3,145	28
Africa	1,160	100	665	1,925	17
Non-Amex I East Asia	110	1,200	605	1,915	17
Other Asia/Middle East	670	960	745	2,375	21
Middle East	30	45	60	135	1
Countries in transition	85	1,055	545	1,685	16
Total Non-Annex I	3,900	3,910	3,370	11,180	100
Share, %	35	35	1,30	100	
Non-Annex I share of the global potential, %	99	68	83	81	
Note: Potential at cost equal or less than USD 100/t CO ₂ :					

Source: IPCC. 2007.

Area of Avoided Deforestation and Forest Degradation by Region

Deforestation driver	East & South Africa	North Africa	West & Central Africa	Africa total	Asia-Pacific 1000 ha	Central America & Mexico	South America	Latin America	Other countries	Total
Commercial agriculture										
- Commercial crops	340	150	270	760	770	60	850	910	130	1800
- Cattle ranching	170	290	70	530	30	110	850	960	90	1580
Subtotal	510	440	340	1290	800	170	1700	1870	220	3380
Subsistence farming										
- Small-scale shifting cultivation	850	290	680	1820	1280	250	1700	1950	430	4200
- Fuelwood and NTFP	90	120	70	280	160	60	210	270	40	590
Subtotal	940	410	750	2100	1440	310	1910	2220	470	4790
Wood extraction										
- Commercial crops	90	30	200	320	800	60	510	570	130	1020
- Fuelwood/charcoal	170	100	70	340	160	30	130	160	40	540
Subtotal	260	130	270	660	960	90	640	730	170	1560
Total	1710	980	1360	4050	3200	570	4250	4820	860	9730
Source: Intercooperation (2007)										

Lowest Investment Cost Required to Compensate the Opportunity Costs of Deforestation and Forests Degradation

Deforestation Source	East & South Africa	North Africa	West & Central Africa	Africa total	Asia-Pacific USD million/yr	Central America & South America	Latin America total	Other countries (1) Total
Commercial agriculture								
- Commercial crops	567,8	226,4		578,0	1372,2	104,5	2040,0	322,5
- Cattle ranching	56,1	97,0		22,4	175,5	49,5	527,0	38,7
Subtotal	623,9	323,4		600,4	1547,7	154,0	2567,0	361,2
Subsistence farming								
- Small-scale shifting cultivation	297,5	102,9		306,0	706,4	86,6	595,0	86,0
- Fuelwood and NTFF	21,2	32,9		17,0	71,1	13,8	53,1	10,8
Subtotal	318,7	135,8		323,0	777,5	100,4	648,1	96,8
Wood extraction								
- Commercial harvesting	54,4	11,8		244,8	311,0	52,8	499,8	129,0
- Fuelwood/charcoal	27,2	6,4		6,8	40,4	2,6	14,0	12,9
Subtotal	81,6	18,2		251,6	351,4	55,4	513,8	141,9
Total	1024,2	477,4		1175,0	2676,6	309,8	3728,9	599,9
								12184,9

Source: Intercooperation (2007)

1) E.g., Russian Federation, Mongolia, Australia.

Source: Intercooperation 2007

Appendix 5.4

Geographic Analysis of Recipients of External Bilateral and Multilateral Forest Financing by Selected Indicators

Indicator/group	Total number of countries in the group	Countries with external forest financing, %	Average number of external sources per country
INCOME			
Least developed	49	83.7	3.7
Other low income	18	83.3	5.3
Lower middle income	49	79.6	4.2
Upper middle income	33	72.7	1.2
Total	149		
NET TRADE IN FOREST PRODUCTS			
Negative	110	78.2	3.6
Zero	5	80.0	3.0
Positive	31	90.3	4.7
Total	146		
EXTERNAL DEBT/GDP %			
Less than 50%	42	88.1	4.8
50-100%	48	91.7	3.3
Higher than 100%	27	85.2	0.9
Total	117		
FOREST AREA % OF TOTAL LAND AREA			
Less than 20%	67	70.1	2.1
20-40%	46	84.8	4.3
40-60%	29	89.7	5.5
More than 60%	20	65.0	2.8
Total	162		
CHANGE IN FOREST COVER IN 2000-2005			
Negative	77	94.8	5.1
No change	48	58.3	0.9
Positive	36	80.6	2.9
Total	161		
PROTECTED AREA % OF TOTAL FOREST AREA			
Less than 5%	25	100.0	5.4
5-10%	10	80.0	3.3
10-20%	15	86.7	5.0
More than 20%	35	77.1	3.9
Total	85		

Sources: Calculated based on the survey data on 19 donors; FAO (2005) on forest indicators; FAO (2004) on net trade in forest products; World Bank (2007) on indebtedness.