



Managing Forest Resources for Sustainable Development

An Evaluation of World Bank Group Experience

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Abbreviations

AAA	Analytic and advisory activities
ASEAN	Association of Southeast Asian Nations
BACP	Biodiversity and Agricultural Commodities Program
BioCF	BioCarbon Fund
BMP	Best Management Practices
CDM	Clean Development Mechanism
CEPF	Critical Ecosystems Partnership Fund
CFM	Community forest management
CIFOR	Center for International Forestry Research
CoC	Chain of custody
CODE	Committee on Development Effectiveness
CONAFLOP	Coordination Committee of the National Forest Program
CPF	Collaborative Partnership on Forests
CSO	Civil society organization
DGM	Dedicated grant mechanism
DPL	Development Policy Loan
DPO	Development Policy Operation
DRC	Democratic Republic of Congo
EROIC	Economic return on invested capital
ERPA	Emissions reduction purchase agreements
ERR	Economic rate of return
FAO	Food and Agriculture Organization
FCPF	Forest Carbon Partnership Facility
FDI	Foreign direct investment
FIP	Forest Investment Program
FLEG	Forest Law Enforcement, Governance
FOMACOP	Forest Management and Conservation Project
FP IFC	Forest Projects
FPS	Forest products sector
FSC	Forest Stewardship Council
FUNAI	National Indian Foundation
FUNBIO	Brazilian Biodiversity Fund
FY	Fiscal year
GDP	Gross domestic product
GEF	Global Environment Facility
GFP	Growing Forest Partnerships
GPFLR	Global Partnership on Forest Landscape Restoration
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HCV	High conservation value
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IEG	Independent Evaluation Group
IEGPE	IEG Private Sector Evaluation Department
IEGPS	IEG Public Sector Evaluation Department
IEM	Integrated Ecosystem Management
IFC	International Finance Corporation
IUCN	International Union for Conservation of Nature

ABBREVIATIONS

JFM	Joint Forest Management
LAC	Latin America and Caribbean
MNA	Middle East and North Africa
MIGA	Multilateral Investment Guarantee Agency
NFP	National Forest Program
NGO	Nongovernmental organization
NORAD	Norwegian Agency for Development Cooperation
PA	Protected area
PAS	National Sustainable Amazon Program
PEFC	Programme for the Endorsement of Forest Certification
PES	Payments for environmental services
PFM	Participatory forest management
PPDCAm	Plan for the Prevention and Control of the Amazon
PPG-7	Pilot Program for the Conservation of the Brazilian Rain Forest
PROFOR	Program on Forests
PRSC	Poverty Reduction Support Credit
PSD	Private sector development
PSFM	Participatory Sustainable Forest Management
RAAN	Región Autónoma del Atlántico Norte
REDD	Reduced Emissions from Deforestation and Forest Degradation
REDD+	REDD plus conservation of forest carbon stocks, sustainable management of forests and enhancement of forest carbon stocks.
RSPO	Roundtable on Sustainable Palm Oil
RTRS	Roundtable for Responsible Soy
SCP	Socioenvironmental Compliance Plan
SEM	First Programmatic Development Policy Loan for Sustainable Environmental Management
SFM	Sustainable forest management
SGS	Société Générale de Surveillance
SLM	Sustainable land management
SMEs	Small and medium enterprises
TA	Technical assistance
TFD	The Forests Dialogue
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
WRI	World Resources Institute
WSM	Watershed management
WWF	World Wildlife Fund

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Overview

Managing Forest Resources for Sustainable Development

Why Forests Matter for Development

About 4 billion hectares, or about 31 percent of the world's land area, is covered with forest. The sustainable management of this forest estate is critical to the World Bank Group for three reasons. First, forests are home to, and sustenance for, hundreds of millions of people, including some of the world's poorest. Second, deforestation results in severe local and global environmental damage. Third, controlled/sustainable commercial exploitation of forest products could contribute to economic growth.

However, the intrinsic characteristics of forests make sustainable management a challenge. The positive externalities forests provide are uncertain, diffuse, and hard to value. When ignored by decision-makers, the magnitude of private net benefits of deforestation can seem to outweigh the public benefits of conservation or sustainable management. As a result, deforestation and degradation continue without much compensating gain for economic development or poverty reduction.

Global Forest Trends

Five important trends have shaped the forest space over the past decade. First, while afforestation and regrowth have added 8 million hectares (mostly plantations) to the global forest estate, the loss of natural forests continues at an unsustainable rate. This loss,

mainly due to the conversion of tropical forests to agricultural land, is intricately linked to commodity prices. Thus, both population and economic growth will continue to drive up demand for palm oil, soybeans, beef, and timber, putting long-term pressure on forests. Therefore, addressing the drivers of deforestation – many of which occur outside of the forest sector – is preeminently important if the World Bank is going to meet its strategy aims.

Second, there have been major changes in the ownership and management of forests. Protected areas have expanded dramatically and there has been a trend toward increased decentralization of management and devolution of ownership especially in the Latin America and Caribbean (LAC) region.

Third, the crucial role of forests in the effort to mitigate climate change has in recent years been broadly acknowledged and has become the central issue in the global forest-related dialogue and policy processes. The recognition of the importance of underlying issues such as forest governance, indigenous peoples' rights, extra-sectoral influences and integrating carbon payments into broader multifunctional benefit streams have transformed the discourse from its initial focus on forest carbon (and its measurement) to today's mainstream discussion on sustainable forest management. This has increased the emphasis on the need for

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holistic approaches instead of focusing solely on forest carbon.

Fourth, there is growing attention to curbing illegal logging and other forest crimes. There is an increasing consensus that illegal logging and trade of illegal forest products is a symptom of broader governance failures in the sector and beyond in many developing and transition countries.

Fifth, over the last two decades, international forest companies have shifted their pulp production capacity from the Northern Hemisphere to South America where the climate is generating up to five times the timber yields achieved elsewhere. Likewise, companies are shifting their paper and board production to Asia to be closer to growing consumer markets.

The World Bank Group's Revised Forest Strategy (2002)

The challenges and opportunities of sustainable forest management are recognized in the World Bank Group's revised 2002 Forest Strategy, *Sustaining Forests—A Development Strategy*. This strategy incorporated many of the findings and recommendations of the Independent Evaluation Group's (IEG's) *Review of the Implementation of the Bank's 1991 Forest Strategy* (2000).

Whereas the 1991 Strategy focused mainly on the conservation of primary tropical moist forests, the 2002 Strategy reoriented the Bank Group's engagement in forests around three “pillars,” or objectives, which are better aligned with its core mission:

- Protecting vital local and global environmental services and values;
- Harnessing the potential of forests to reduce poverty; and
- Integrating forests into sustainable economic development.

A decade into implementation of the 2002 strategy, this evaluation takes stock of World Bank Group's achievements.

Evaluation Approach and Methodology

The evaluation was guided by the overarching question:

In what manner and how effectively has the World Bank Group supported member countries and the private sector in balancing competing demands on their forest resources and managing them for sustainable development? And what can we learn from these past experiences to help guide forest-related interventions in the future?

The evaluation involved a review of the Bank Group strategy and portfolio review. Desk and field-based case studies were conducted in Brazil, Chile, China, the Democratic Republic of Congo, India, Indonesia, Lao People's Democratic Republic, Liberia, Mexico, Peru, the Russian Federation, South Sudan, Uruguay and a desk study of small island states. Extensive interviews were conducted through various forums. A literature review was done to complement and inform the desk and field studies, including IEG's 2000 Forest Evaluation and the World Bank's Mid-Term Review of Implementation. Finally, a social media campaign was launched to extend the evaluation's outreach.

The World Bank Group Portfolio under the New Forest Strategy

The World Bank approved 289 forest sector-related projects between July 2002 and June 2011 (FY03–FY11) in 75 countries valued at \$2.6 billion. World Bank forest sector projects can and often include several forest-related interventions that are designed to be in line with one or more of the Strategy pillar aims.

For the purpose of understanding how the World Bank identified potential synergies and negotiated attendant trade-offs at the project level, this review identified and evaluated a

broad spectrum of interventions, with an emphasis on the most important commonly reoccurring interventions referred to in the 2002 Forest Strategy.

These included support for: (i) Protected Areas; (ii) Payments for Environment Services; (iii) Sustainable Land and Watershed Management; (iv) Participatory Forest Management; (v) Key legal and institutional reforms across three different forest types: in Brazil to support the enabling environment and enforcement regimes and in Central and West Africa to help reform the industrial timber concession regimes; in temperate and boreal forests where the Bank has provided institutional and policy support for countries in transition; in the dry forests and woodlands of the Sahel where support for decentralized policy reforms is intricately linked to forest rights, equity, access and sustainable management; and for (vi) carbon-financed activities (the Bio-Carbon Fund and the Forest Carbon Partnership Facility). Cross-cutting issues were also considered throughout the review, including forest governance, climate change, capacity building, and gender.

The changing composition and nature of World Bank forest projects reflects an increasingly sophisticated interpretation of the 2002 Forest Strategy. World Bank support for the forest sector has increased since the 2002 Strategy, both in terms of project numbers and lending volume. However, the nature of this support is changing. Comparing the decades prior to and after the 2002 Strategy, forest-related activities have accounted for a smaller percentage of total project spending in the latter period (from 31 to 22 percent). An analysis of the portfolio revealed that this shift is due to an increasing effort to integrate forest activities into wider-scale, landscape-level management activities. Exceptions include stand-alone protected area projects financed by the Global Environment Facility

(GEF), and projects financed through carbon funds.

During the same period, IFC approved 56 projects in the Forest Product Sector (FPS) with total investments valued at \$1.5 billion. IFC's Forest Product Sector projects are designed to support sustainable businesses along the entire forest product supply chain, from plantations to production of furniture and panel products to paper products and construction materials (IFC 2012).

IFC forest product sector investments approved between FY04–FY11 are comprised of paper and board production (54 percent of investment volume); mechanical wood production (34 percent); processing in pulp mills (8 percent); and primary production of wood (4 percent, consisting of natural and plantation forests).

IFC also includes advisory services in its approach to the sector. It supported 44 advisory service operations valued at \$30 million. In contrast to the investment operations, these services mainly have been offered upstream.

The Multilateral Investment Guarantee Agency (MIGA) provided insurance for three forest-related projects in Uruguay, Liberia, and Mozambique.

The shift from an exclusive focus on tropical moist forests to include other forest types, such as tropical dryland forests and woodlands—and the stronger focus on the potential for wealth creation, poverty alleviation and increased resilience has resulted in increased support and attention to Sub-Saharan Africa, particularly the Sahelian region. This is significant since dryland forests/woodland areas extend over approximately 43 percent of the African continent and include some of the poorest countries in the world. The common resources found in these dryland forests and

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woodlands have commercial potential, and are critical for livelihoods. However, they are also highly susceptible to climate change.

The World Bank has stayed engaged in Brazil, which accounts for the bulk of tropical forest loss, and to a lesser extent in Indonesia, the second largest deforestation example. It has been engaged in China, which has expanded its forest plantation areas from 47 million hectares (ha) in 1999 to 62 million ha in 2008. In India, engagement in the post-strategy period mainly supported land and forest conservation.

IFC's investments have shifted alongside global industry trends. International forest companies are increasingly sourcing forest and wood products from the Southern Hemisphere where the climate conditions are more favorable. Paper and board manufacturing has also shifted to East Asia to be closer to growing consumer markets. In addition, production costs for pulp are 30–50 percent lower than in northern boreal forests.

World Bank Implementation of the 2002 Forest Strategy

Protected Areas

One hundred of the World Bank's 289 forest sector projects were designed to explicitly support the creation, expansion or strengthening of protected areas. Protected area projects have generally achieved their institutional and capacity-building objectives.

However, in those projects specifically designed to conserve global biodiversity, there was little evidence to support an evaluative conclusion about biodiversity outcomes. And only one-third of the protected area projects designed since 2008 included climate change considerations in project design.

The Bank Group has been strategic in aligning its policy advice, lending, and grant-making instruments toward protection of the

Amazon—the largest remaining intact swath of natural forest. Indeed, the Amazon accounts for about 30 percent of the world's remaining tropical forests and about half of the world's species, the frontier of which is highly threatened. Bank support helped to put about 24 million hectares of critical forest area under protection, classify 45.4 million hectares as indigenous lands, and put 2.1 million hectares into community-managed extractive reserves. The demarcation of indigenous territories and extractive reserves in and around the Brazilian Amazon has also demonstrated how the definition and assignment of forest land tenure, access, and use rights can be effective in building the interest of local communities in protecting the integrity of natural forests.

But when devolving forest management authority, attention also needs to be paid to ensuring that there are checks and balances at the local level. In the Bank's protected area portfolio, governance is often viewed as an intra- or inter-ministerial issue with outreach to communities described as “participatory,” but with little evident recognition of the large differences in interests and power within local communities.

The level of community participation in the management of a protected area matters for both environmental outcomes and sustainability: protected areas that permit sustainable forest use have been shown to be more effectively conserved than strictly protected ones. This finding was borne out in a recent IEG study that used global satellite data on forest fires as an indicator of deforestation to assess all officially recognized tropical forest protected areas, many of which have been supported by the World Bank. Yet too few of the World Bank protected area projects have achieved this synergistic effect.

The siloed nature of many of the protected area projects considered livelihoods only in the context of providing alternative income

schemes (for example, through micro-grants) without addressing the root causes of the anthropogenic threats.

Even so, the alternative livelihood schemes embedded in the design of protected area projects did not achieve their intended objectives. Seventy-five percent of the closed protected area projects included an alternative livelihood program for communities that live in and around the targeted site. Yet just two out of 37 closed protected areas projects achieved their intended livelihood aims.

The lack of meaningful integration of communities into integrated conservation management systems is one reason why sustainability of these systems is lacking (lack of recurrent finance and other land-use pressures also threatened sustainability). Sustainability of the environmental outcomes in three-quarters of the Bank-supported project was found to be at risk.

Livelihoods can be negatively affected by limiting or restricting communities' access to forests through the creation or expansion of a park or through a protected area— if due consideration is not given to mitigating the potential loss of access to forest-related assets. Seventy-three percent, or 40 of the 55 protected area projects with available data triggered Operational Policy- OP 4.12. Yet only two of the closed projects to date have reported on whether the potential adverse impacts on livelihoods (forest-related assets, or access to assets and services), have been mitigated.

Payments for Forest-Related Environmental Services

Payments for environmental services (PES) schemes attempt to create financial incentives to protect the environmental values of all ecosystems, although PES has most often been used to promote forest conservation and restoration. The World Bank piloted its work

on PES in 2002 through the *Ecomarkets* project in support of Costa Rica's pioneering PES program launched in the mid-1990s. The Bank has also supported a second phase of the Costa Rica PES and extended variations of the model through an additional nine projects, mainly in Latin America.

Although Bank-supported PES schemes have had a positive effect on deforestation in some countries, the programs were applied broadly rather than targeting high-value forest areas. Monitoring frameworks in all but one case measure participation rates but not behavioral change or service generation—making it impossible to evaluate the extent to which the programs have meaningfully affected land-use change. Attention to poverty increased over the review period. However, in PES schemes it is not always clear that attention to poverty is, or should be, a synergistic aim.

Participatory Forest Management

Participatory Forestry Management projects exhibit the most balanced goals as compared to other interventions in the sector. World Bank support for participatory forestry management has yielded positive livelihood benefits, such as the generation of employment, increased incomes, and diversification of revenue streams. Where specifically targeted, these projects have also achieved positive environmental outcomes such as reduced deforestation rates, regeneration of degraded forests, reduced incidence of fires, and protection of biodiversity.

However, the potential of participatory forestry management to lift forest-dependent people out of poverty has been inhibited by over-regulation or inappropriate regulation of the small-scale forest enterprises. Although recognized as an obstacle in the Bank's analytical and advisory activities and project descriptions, Bank projects have not adequately addressed this policy barrier.

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The World Bank, by neglecting the informal sector, has missed an opportunity to reach more forest-dependent rural poor, while at the same time helping to achieve more environmentally sustainable forest management. The countries with the largest informal forestry sectors tend to be low-income countries with weak governance. In these countries, the Bank has worked exclusively in officially-managed forest estates through industrial concession regimes, conservation areas, and community forest management— while largely ignoring the remaining informal or unmanaged, forest space.

Another obstacle to the ability of participatory forest management to reduce poverty has been the unwillingness of governments to transfer effective authority to communities. The Bank's extensive experience in India with regard to supporting the devolution of forest-rights demonstrates the protracted nature of this undertaking where gains can be made at the margin, slowly, and over time if the Bank remains engaged.

Sustainable Land Management

Sustainable Land Management projects with forest-related activities were designed with an implicit assumption that conservation measures will yield livelihoods gains. Although many projects recorded the area brought under sustainable land management, impacts on soil and water were lacking (soil outcomes were measured in Chad and in Bhutan,) and productivity gains were therefore rarely attributable to forest-related activities (reforestation, bank stabilization, and so on). Despite references to climate change, there was a tendency to neglect the role of climate variability when rehabilitating degraded areas or when shaping the success or failure of revegetation projects.

The evaluation also found that, with notable exceptions, the sustainable land and watershed

management projects have generally focused on technical interventions—soil conservation, bank stabilization, reforestation. However, there has been a lack of attention to the rights of people to the land or involvement of beneficiaries in the management of these areas once the earthworks and plantings are achieved.

Key Legal and Institutional Reforms in Support of the Management of Natural Forests

Although forests differ dramatically across the world, forest reforms in World Bank Group client countries share two broad, interlinked goals. The first goal is to make the ownership and management of forests more equitable and efficient. In both developing and transition countries, the state has typically had legal control of forests, though individuals and communities may have long-standing ownership claims. Reforms seek to transfer ownership and management rights and ensure enforcement of those rights to communities and individuals. They also seek to allocate fairly and transparently revenues from the sale of public forest resources.

The second goal is to ensure sustainable forest use and reduce environmental damage. Regulatory reform seeks to restrict deforestation and to prescribe logging practices in order to reduce environmental damage.

IEG reviewed various types of support for key legal and institutional reforms across three different forest types, including: (i) development policy lending in tropical moist forests in Central and West Africa, where industrial timber concession reforms have been implemented, and in Brazil where the World Bank has helped to enhance the enabling environment for more effective forest management and enforcement; (ii) in temperate and boreal forests where the Bank has provided institutional and policy support

for countries in transition; and (iii) in the dry forests of the Sahel where World Bank support for decentralized policy reforms is intricately linked to forest rights, equity, access and sustainable management.

The World Bank's policy lending in support of the sustainable management of the tropical moist forests of Brazil has helped to strengthen management and enforcement of protected areas in the Amazon that have been a contributing factor to reduced deforestation (amongst other factors). Meanwhile, IFC piloted efforts that have raised awareness about sustainable production practices at the Amazon's frontier.

In tropical moist forests in Central and West Africa, World Bank support for industrial timber concession reforms has helped to advance the rule of law, increase transparency and accountability (as compared to the "without the Bank" scenario) and put environmental standards in place. Evidence is lacking, however, that these reforms in tropical moist countries with weak governance have led to sustainable and inclusive economic development.

Attention to rural poverty has been lacking in World Bank supported concession reform projects. World Bank policy advice and projects that have supported the reform of industrial timber concession regimes have usually neglected or underestimated the nontimber values and uses of the forests with respect to the livelihoods of forest-dependent people, their traditional claims, sociocultural values, and overall sense of security. Evidence is also lacking that concessioned natural forests are being managed sustainably.

The results of the World Bank's support for sustainable forest management of the temperate and boreal forests in countries in transition were mixed: where there was a strong tradition of private forest ownership (Romania and Albania), there has been

progress in achieving all three pillar aims. In countries where this tradition did not exist (Russia and Georgia), progress has been more uneven and applied through an industrial concession model that has failed to deliver planned poverty reduction aims.

The World Bank sought to support the enhanced management of dry forests and woodlands in the Sahel by engaging in the national decentralization processes there. This support augmented the role of resource users in decision-making. Indeed, resource users are a vital element of resource management that hold potential for increasing synergy among the three pillars. However, in most cases, the failure to explicitly address asymmetrical power relationships between decentralized bodies and forestry agents is likely to reduce the ability of local groups to actually exercise decision-making power in forest management, thereby eroding the potential of achieving the strategic pillar aims.

IFC and MIGA's Implementation of the 2002 Forest Strategy

The role foreseen in the 2002 Strategy for IFC and MIGA was to promote catalytic private investments in sustainable timber harvesting and management. The Strategy also noted the need for independent monitoring and certification of forest operations to ensure that investments in production forests or indirect support through financial intermediaries or forest industries contribute to improved forest management and more sustainable outcomes.

In 2010, IFC updated the 2002 Forest Strategy to articulate a more comprehensive vision of how it would address sustainable forest management along the full spectrum of the forest value chain—from upstream investments in plantations and support for sustainable harvesting of natural forests to support for downstream processing.

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IFC Forest Product Sector (FPS) investments have helped forest companies produce higher value-added products, increase productivity and production capacity, and foster outgrower markets and job creation for rural poor communities.

IFC uses an Economic Sustainability (ES) rating—based on the Economic Rate of Return (ERR) or the Economic Return on Invested Capital (EROIC) of its investments—to measure quantifiable net economic benefits to society, as well as to capture significant non-quantified benefits. An analysis of the Economic Sustainability rating of IFC Forest Product Sector investments that use wood and were approved between FY03 to FY06, that is, mature projects, found that 69 percent were rated Satisfactory or higher, which is in line with IFC's average.

Public sector support—in the form of public policies and tax incentives—is needed to enable a favorable business climate for inclusive forest sector growth. Yet there were very few examples in the portfolio of investments that have benefitted from World Bank Group cooperation. IFC's investment in a large-scale pulp mill in Uruguay – an investment that was also supported by a MIGA guarantee – stands out as an excellent example of this type of cooperation. Building on World Bank-supported policy reforms and plantation expansions, IFC's investment operations have helped the sector contribute to a 1 percent increase in the country's GDP and a 9 percent increase in its exports since the mill startup in 2007.

IFC's Private Sector Development (PSD) indicator measures the extent to which client companies are behaving as corporate role models, and whether IFC support is helping to extend benefits beyond the gains enjoyed by the project company. An analysis of IEG validated PSD ratings of mature IFC Forest Product Sector investments found that 81

percent were rated satisfactory or higher, suggesting that they catalyzed investments and job creation opportunities beyond the project company.

IFC Forest Product Sector investments have been predominantly downstream, although 46 percent of IFC-supported companies were vertically integrated with upstream operations. There have been stepped-up efforts by IFC at supporting sustainability along the supply chain. However, the record indicates continued challenges in achieving certification and ensuring sustainable forest management. Of the 32 projects that are producing or using wood from natural or plantation forests and are therefore subject to certification requirements, 15 have achieved certification as planned, while 7 did not put certification or other verifiable supply chain mechanisms in place; of the remainder, 9 had plans for certification and one did not have information to determine the status.

Twenty-four IFC projects operated far downstream – using market pulp, wastepaper, paper, board, straw or bagasse as feedstock. From the point of view of sustainable forest management, the development outcomes of investments in downstream processing could be enhanced with greater attention to creating demand for certified supplies. Of the six investments that used pulp or fluff, only one project — an investment in a paper products manufacturing company in the Middle East and North Africa (MENA) region — provided verified information on the sustainable sourcing of its supply.

Downstream investments are also relevant from the point of view of sustainable forest management if they support alternative, sustainable sources of fiber supply. Ten of IFC's Forest Product Sector investments include support to firms that source fiber from waste and recycled paper (Colombia, Egypt, Kyrgyz Republic, Mexico, Nigeria, and

Turkey), and that use agricultural byproducts, like wheat straw, for packaging (Pakistan).

IFC's support to farm forestry in India through smallholder outgrower schemes offers direct poverty reduction opportunities. Experience from these interventions shows that there is a need to better diagnose and address: (i) the trade-offs farmers face with respect to the use of their land and food security; (ii) the need for clients to deliver targeted and consistent technical assistance to all user groups with varying literacy levels; and (iii) the need to ensure that farmers fully understand the implications of engaging in financial transactions.

IFC is pursuing an integrated approach with its advisory services and investment operations. There are useful lessons in this regard from a decade-long engagement in Latin America.

MIGA's guarantee associated with IFC's investment in a pulp and paper mill in Uruguay contributed to the recorded 1 percent increase in Uruguay's gross domestic produce (GDP) mentioned above. MIGA has also influenced environmental and social performance in the rubber sector in Liberia just years after conflict there ceased. Conditions for certification requirements with regard to a wood-chipping operation in Mozambique were highly in line with the 2002 Strategy aims, but information on compliance is lacking.

Partnerships and Institutional Collaboration

Partnerships are the key to establishing a strong consensus-based agenda for forest conservation and development linked to broader development agendas. Over the past decade, the Bank Group has engaged, and in some cases, catalyzed, global, national and local forestry partnerships largely consistent with its 2002 Forest Strategy.

The Bank has also used partnerships to address legal issues, and develop learning and knowledge activities. In addition, partnerships have been valuable in launching pilot approaches to forestry issues.

Regarding Bank Group institutional collaboration, more could be done to exploit the relationships and take advantage of synergies between IFC, MIGA and the Bank.

Findings and Conclusions on the Implementation of the 2002 Forest Strategy

Findings. The World Bank Group has supported its member countries and the private sector in balancing competing demands on their forest resources and managing them for sustainable development by putting in place a revised strategy. The new strategy put poverty alleviation and economic development on an equal footing with conservation. This shift better aligned the forest sector with the mission and comparative advantage of the World Bank Group.

It was a bold move given the risks and trade-offs involved in balancing the three objectives, especially with regard to re-engaging in productive activities in the tropical moist forest space. The strategy recognized these risks, as well as the trade-offs and tensions, between the three strategic pillars. It reflected a belief that, with proper safeguards and measures, the Bank Group would be positioned to manage the trade-offs and tensions and thus realize the potential of forests for growth and poverty reduction.

This evaluation found that while perceived synergies and inherent trade-offs were recognized across all of the World Bank Group's forest-related interventions, its record in managing the trade-offs and tensions between conservation, poverty alleviation, and growth objectives shows that

expectations, as envisioned by the 2002 Strategy, have not been yet met.

Conclusions. The World Bank Group's forest interventions have contributed substantially to beneficial environmental outcomes. However, poverty reduction, for the most part, has not been satisfactorily addressed. Forest projects that promote participatory forest management have been the most successful at balancing poverty reduction, livelihoods and environmental aims (with efforts to link forest products to market), but this integration is lacking in other sector interventions. IFC's downstream investments are creating jobs, including those in the upstream sector, helping forest companies produce higher value-added products, increasing productivity and production capacity, and fostering outgrower schemes. Despite increased efforts by IFC to support certification—a proxy indicator for sustainable forest management—challenges remain in this area. Regarding downstream investments, IFC's impact could be expanded by greater attention to creating demand for certified supplies. And despite the reorientation of the strategy—including the operational safeguards that were put in place and efforts to support policy and institutional reforms—there have been negligible outcomes in integrating natural forests into economic development in an environmentally and socially sustainable way.

The World Bank has been able to adapt the partnership structure and focus of work within the partnerships to the changing context of the global forest-related priorities and dialogue. The Bank has also had a major role in shaping these global priorities. Broadening the partnership approach toward other land-based sectors and commodities has been critical given the increasing importance of extra-sectoral factors as drivers of deforestation and forest degradation. The evolution of the partnerships towards holistic landscape-level approaches that combine

forest conservation and sustainable forest management (SFM) with climate change mitigation and adaptation, improved food security and climate smart agricultural development are significant achievements. The Bank's efforts to integrate broader governance concerns and issues, including the efforts to protect and enhance the rights of indigenous forest-dependent communities, into these approaches are also recognized as important achievements.

In several cases, World Bank Group cooperation has facilitated effective outcomes in the forest sector. The World Bank Group has been most effective when the Bank's work to help countries lower barriers to private sector entry have been combined with IFC and MIGA support to catalyze sustainable investments in the forest sector. Action on such complementary services was found in China, Nicaragua, Russia, and Uruguay— but nowhere else.

The monitoring and reporting systems of the World Bank forest sector operations are inadequate to verify whether its operations are supporting forest management in an environmentally and socially sustainable way, in line with the 2002 Strategy and the Bank Group's Operational Policies.

Environmental indicators used in forest projects are mainly process or effort measures (such as the number of hectares planted, or numbers of hectares under management plans). Most indicators of poverty alleviation were less direct than is desirable both for accurately assessing project outcomes and for comparison across projects. Poverty reduction indicators like numbers of productive investments made are imperfect measures of whether programs are reaching the most vulnerable members of a community. World Bank and IFC projects often assumed, without verification, that benefits would accrue to the poor within targeted areas,

rather than to community members with more wealth or power.

Recommendations

The findings of this report suggest several recommendations that can help improve the effectiveness of World Bank Group support for sustainable forest management.

Operational Effectiveness

- Enhance the effectiveness of Bank Group efforts to protect vital local and global environmental services and values by building more meaningful community participation into the design and management of protected areas.
- Expand support for participatory forest management to level the playing field for community-based forest enterprises by working with clients to improve regulations and procedures and integrate small-scale informal forestry activities.
- Undertake and disclose a comprehensive review of the economic, environmental and social outcomes associated with World Bank support for industrial timber concession reforms in tropical moist forest countries with weak governance, including an analysis of the outcomes that could be achieved under alternative land-use schemes. Based on the evidence, determine whether and how the World Bank Group can realistically support effective sustainable forest management in tropical moist forest countries.
- Provide guidance and actively encourage staff to develop and utilize sustainable forest management outcome indicators that can adequately track progress across the three pillars. This would include

indicators that can track progress, and mechanisms that can manage attendant tensions and trade-offs in the forest landscape.

- Target IFC's downstream investments and MIGA's support toward firms that can have a catalytic effect in generating greater demand for and supply of sustainable forest products. Make traceability a priority in IFC Forest Product Sector Investments and associated MIGA guarantees both up and downstream.

Strategic Alignment

- Use the upstream experience gained by IFC's advisory and investment operations to mitigate project risks and assist with community and company relations as IFC moves its investments upstream. Adjust skills accordingly.
- Develop mechanisms and instruments between the Bank, IFC and MIGA—such as joint action plans, coordinated business development and integrated product offerings—in strategically important countries to offer a well-sequenced package of forest-related products and services to clients. Such an effort would enable the better use of synergies between the public and private sector arms of the World Bank Group.

Management Response

Executive Summary

Overview: Sustainable forest management remains critical to the World Bank Group's mission, because large numbers of poor people are heavily dependent on forests and trees for commodities, foods, medicines, and energy; because of its contribution to economic growth; and for mitigating the impacts of climate change.

As the largest source of multilateral finance for forests globally, the World Bank Group (WBG) works with governments, civil society and the private sector to promote conservation and sustainable management and stop the destruction of tropical forests by combating weak governance and serious corruption that have plagued the forest sector for decades. The bulk of the WBG's forest sector portfolio supports communities and local people to get greater value out of the forests, trees and woodlands on which they depend. To complement this work, the WBG backs governments' efforts to improve forest governance, to fight corruption, and to stop the looting of these critical natural assets.

The WBG's Independent Evaluation Group (IEG) has undertaken a review of the implementation of the 2002 Forest Strategy. The strategy emphasizes the positive developmental benefits of forest conservation and management, while strengthening environmental and social safeguards.

The evaluation confirms that the WBG's forest work has:

- improved livelihoods, especially through support for participatory forest management initiatives, which involve and empower local communities;
- had a major and positive role in shaping global forest sector priorities;
- contributed substantially to positive environmental outcomes;
- successfully reduced deforestation when forest protected areas are designed and managed by people that live in and around them;
- advanced the rule of law in a sector plagued by patronage, corruption, and rent seeking by increasing transparency and accountability and by putting environmental standards in place; and

In Tanzania, Bank support for legal reforms created over 3 million hectares of village forest reserves and **in Brazil** 24 million hectares of tropical rainforest are now under protection because of this work.

In China, the Bank's support for establishing extensive new areas of planted forests has increased average annual per capita income by 150 percent among participating communities. Further, IFC has worked closely with a strategic forestry client to help its goal of certifying (FSC and China certification- the first of its kind) nearly 100,000 ha of forest land in a rural area.

In the Democratic Republic of Congo, where we have worked with the Government since 2003 to cancel around 25 million hectares of illegal logging concessions, transparency has improved dramatically. This has created the space for Indigenous Peoples and local communities to manage their forests more sustainably.

- generated employment and economic livelihoods through its private sector interventions, by fostering sustainable practices by upstream forestry operators (including certification) and downstream users of wood (sustainable sourcing).

While we agree with most of IEG's recommendations, we strongly disagree with the recommendation to determine whether the WBG should continue its interventions on forest concessions. We believe that the finding that led to this recommendation is not supported by a comprehensive body of evaluative evidence, nor backed by an extensive literature review. It is our view that this report, as written, fundamentally fails to reflect an understanding of the complexity of working in this challenging sector, and simply does not recognize successes in our diverse portfolio of operations supporting forest conservation and management. The report provides an unbalanced impression of our work in this sector. In contrast to the impression conveyed by IEG, nearly 70 percent of the projects reviewed had satisfactory outcomes.

Where we agree: Overall, IEG supports the WBG's continued engagement in forests in line with the 2002 Forest Strategy.

We agree with IEG that effective community participation is essential for improving the management of protected areas, and we will continue to support this approach in our forest biodiversity conservation projects.

We also agree that participatory forest management can be an efficient tool for sustainable management, and we will continue to support forest operations with strong participatory elements for this very reason.

We agree that policy and institutional reforms are essential for improving the quality of forest governance, and that is why our approach to this tackles the broader policy, institutional, and legal environment through a broad suite of development policy measures aimed at addressing the most glaring cases of poor governance, the misappropriation of public property, and environmental risk in resource-rich countries.

We agree with most of IEG's suggestions and recommendations, including:

- The need to strengthen measuring of and reporting on the impact of the WBG's engagement in the sector.
- IFC should increase its investments in upstream forestry operations; and target downstream investments to catalyze demand for a sustainable products value chain, informed by best practices.
- Better coordination and sequencing is needed across the WBG in strategically important countries.

However, IEG neglects to acknowledge our substantial efforts and success in these areas.

Where we disagree: WBG management strongly disagrees with IEG's recommendation that the WBG should reconsider whether and how it can realistically support concession reforms in tropical moist forests.

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Concession reform is a small but important part of our portfolio. Our work in this area supports countries to manage their forests more holistically, and to reduce unsustainable forest exploitation practices. The WBG does not finance projects that involve the significant conversion or degradation of critical forest areas or related critical natural habitats. Much of the WBG's forest work is in fragile and conflict-affected states, which are difficult and complex environments. We typically enter into forest discussions over concerns about looting of public assets. Once we have helped governments to halt bad practices, the concession reform process is geared toward improving governance, transparency and accountability. There is no one-size-fits-all approach to concession reform.

Conclusion

Working with governments, civil society and the private sector, the WBG will continue to support countries in their efforts to harness the potential of forests to reduce poverty, better integrate forestry into their economies, and protect and strengthen the environmental role forests play, locally and globally.

Our clients and shareholders want our engagement in this sector and we will remain committed to this work – even more so given the challenge of eradicating poverty and bringing shared prosperity, while addressing climate change.

Introduction

1. The World Bank Group Management welcomes this Independent Evaluation Group review of the Bank's support for managing forest resources for sustainable development, and thanks IEG staff for constructive dialogue during its preparation. This review of performance against the objectives outlined in the World Bank Group's 2002 strategy, *Sustaining Forests*, and of the impact of revisions to Operational Policy 4.36 which accompanied it, gives guidance to Management as well as to clients about the potential for both public and private investment in forest conservation and management. This is particularly relevant given the critical role of forests in mitigating climate change. But it is also because of their role in mitigating the impacts of poverty, their importance to local and national economies, and because of global and regional environmental values which are threatened by forest loss.

2. The first section of this note sets out Bank Management's response; the second section provides International Finance Corporation (IFC) Management's response. The Management Action Record, including the Multilateral Investment Guarantee Agency (MIGA), is attached as Annex 1.

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3. The Bank's forests lending in the 1980s was widely criticized by civil society organizations for failing to take account of its potential negative environmental and social impacts. In 1991,

revisions to the forests policy were introduced to restrict the scope of what the Bank could support, introducing a chilling effect on Bank lending, accompanied by progressive disengagement. The WBG 2002 Forest Strategy *Sustaining Forests* was prepared at a time when the Bank was seeking to re-engage in supporting forests sector investments within a more inclusive, development-oriented paradigm, while at the same time strengthening environmental and social safeguards. The Strategy was developed based on extensive consultations with Shareholders and civil society organizations. The 2002 policy reforms (captured in OP 4.36), which accompanied the Strategy, sought to create a more constructive space for Bank lending, introducing a requirement that finance for commercial harvesting could only take place in areas which were not critical natural habitats or critical forest areas, and that harvesting met independently verified standards of responsible forest management. Great emphasis was placed on the importance of forests for supporting development more generally, and for providing global environmental public goods.

4. Management agrees with IEG's conclusion that the changing composition and nature of the forests portfolio reflects an increasingly sophisticated interpretation of the 2002 Strategy. The evolution of the forests portfolio over the last 10 years has demonstrated how the pillars of the 2002 strategy can be addressed through innovative measures to improve forests and tree management, and increasingly, to build on the landscapes narrative which has emerged in the last few years.

Specific findings and recommendations:

5. ***Protected area management.*** Management agrees with IEG's recommendation that the Bank should build meaningful community participation into the design and management of protected areas. Effective community participation is essential for improving the management of protected areas. Management questions, however, the evaluative evidence for IEG's conclusions that the Bank is not already doing this

6. This leads to a general observation. Bank Management is concerned about the approach taken by the IEG review team, which places a heavy emphasis on extracting lessons from a narrow reading of published literature in reaching its conclusions, and on unstructured field interviews, rather than relying on evaluative evidence from Bank operations or on a more balanced reading of the literature. This makes actionable recommendations drawn from the review problematic.¹

7. IEG's conclusions with respect to Bank support for community based approaches in its forest biodiversity conservation portfolio are in contrast to the findings of other reviews of the biodiversity portfolio. These describe lessons learned from support for efforts to engage communities in mapping critical forest conservation areas, in developing participatory protected area management plans, in operating community-managed tourism enterprises in forest areas,

¹ Of the 87 projects with forest components which closed during the period under review, IEG cited ICRs from only 4 of them and referenced only 3 of its own Project Performance Assessment Reports. When it cited various Inspection Panel cases, it cited the complaint, rather than the Management Response.

integrating biodiversity conservation measures into community-based land-use planning efforts, promoting community management of indigenous reserves, sacred groves, and clan conservation areas.²

8. IEG also concludes that ‘alternative livelihood schemes embedded in the design of protected area projects did not achieve their intended objectives.’ This conclusion is apparently drawn from experience with a small subset of activities which aimed to support alternative livelihoods development through small grants programs, and not the more extensive suite of measures and initiatives which sought to achieve these outcomes through a range of policy measures, community-based management planning efforts, regulatory reforms and explicit investments. To characterize the portfolio as one which fails to address alternative livelihood strategies on the basis of this narrow finding alone risks misleading the reader.

9. Finally, IEG notes that data related to biodiversity outcomes and the protection of critical flora and fauna at the site level was lacking. The science of conservation biology is clear that biodiversity outcomes – such as changes in key indicator species populations– are unlikely to be evident within the short investment horizon covered by most Bank operations. In addition, even if population data were available to cover the project period, natural fluctuations from year to year would make their interpretation for evaluative purposes difficult. Many Bank biodiversity investments are made in data-poor conditions, and indeed, have as their objective the development of the capacity for establishing long term conservation monitoring programs. The Bank has been at the forefront of providing assistance to governments to do this, and has worked closely with partners such as the World Conservation Monitoring Center, IUCN, Flora and Fauna International, WWF, and others to mobilize world-class expertise with this objective in mind.

10. ***Participatory forest management.*** Management agrees with IEG’s proposal that the Bank should expand support for participatory forest management. These types of investments pose great promise for improving forest management, and IEG’s conclusions are consistent with the evaluative material. Management appreciates the concern about the need to ‘level the playing field,’ by working with clients to improve the regulatory environment for small-scale informal forest enterprises. Management is not, however, convinced that this is the primary constraint limiting the ability of communities to better manage their forest resources. Rather, uncertainties over communities’ rights of use and access to forests and trees pose a much more fundamental constraint to their ability to manage these resources effectively. When these are clarified through relevant and credible tenure reforms, the evidence from Bank operations is that small-scale

² World Bank (2008). Biodiversity, Climate Change and Adaptation. Nature-based solutions from the World Bank’s portfolio.

C. Sobrevila (2008). The Role of Indigenous Peoples in Biodiversity Conservation: The natural but often forgotten partners

World Bank (2010). The Role of Biodiversity and Ecosystems in Sustainable Development

World Bank (2012). Toward Africa’s Green Future: World Bank support in biodiversity conservation.

informal enterprises benefit. Inherent to credible forest tenure reforms is the idea that communities should be empowered to develop and implement their own regulations over forest use, and so regulation should be ‘right-sized’ where upstream analysis shows that it is a constraint to participatory forest management. The IEG review presents no evidence from the portfolio that over-regulation is a systemic constraint in the Bank’s participatory forest management projects.

11. In Senegal, this approach generated significant outcomes, through the highly rated Sustainable and Participatory Energy Management Project (P046768). This project introduced measures to improve the sustainable management of forests by strengthening community-based forest management systems. The project brought nearly 380,000 ha under community management, and developed the capacity to sustainably supply more than 370,000 tons of woodfuel annually. It coupled land and tree tenure reform measures with the creation of platform for more effective community involvement in forest management, and then supported woodfuel micro-enterprises which responded to the new supply opportunities. In Tanzania, measures supported by the Bank through two forestry projects contributed to bringing around 3 million ha under participatory forest management. The central regulatory change which facilitated this transformation enabled communities to establish Village Forest Reserves, and to benefit directly from managing forests themselves.

12. **Forest concession reform.** Bank Management agrees with IEG’s findings that its work on forest governance (including concession reform) has helped to advance the rule of law, to increase transparency and accountability, and to put environmental standards in place. But having acknowledged these positive outcomes, IEG nonetheless concludes that there is a lack of evidence that these achievements have led to sustainable and inclusive economic development. IEG recommends that the Bank should carry out a “comprehensive review of the economic, environmental, and social outcomes associated with World Bank support for industrial timber concession reforms in tropical moist forest countries with weak governance,” and then should determine “...whether and how the World Bank Group can realistically support effective sustainable forest management in tropical moist forest countries.”

13. Bank Management rejects these findings and recommendations on four grounds.

14. First, IEG takes a narrow view of Bank supported ‘concession reforms in tropical moist forest countries with weak governance’ missing the broader policy, institutional, and legal environment in which these reforms were introduced. It would have been more helpful to acknowledge that they were part of much wider institutional reform processes and were never undertaken as standalone, narrowly-defined interventions. Most originated as integral pieces of multi-sectoral Government-led and Bank-supported strategies and interventions, such as the HIPC initiative, the PRSP process, and structural reforms supported by a broad suite of development policy measures aimed at addressing the most glaring cases of poor governance, the misappropriation of public property, and environmental risk in resource-rich countries.

15. Public expenditure management was also targeted through these measures and other natural resource sectors were addressed, particularly oil and mining. The inclusion of forests sector

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reforms in this wider set of measures sought to un-do years – even decades – of mismanagement of these valuable assets.

16. At the time the Bank first began to address these issues, the choice of supporting concession reform efforts (and protecting national parks and other public lands in the process) was not made with the consideration of alternative land uses in mind. Rather, the approach was borne out of necessity, to work with governments and the private sector to stop well known abusive practices which were being carried out to the detriment of local communities, to the integrity of forests and wildlife, and to national treasuries.

17. However, concession reforms were introduced as one part of a suite of reforms. The impact of these overall economy-wide measures would be expected to demonstrate ‘sustainable and inclusive economic development.’ There exists extensive evaluative material which addresses the impact of overall reform processes in these economies on sustainable and inclusive development. IEG asserts that evidence was lacking on concession reform’s impact on poverty.

18. Nevertheless, concession reform processes supported by the Bank have created the space for a policy dialogue with governments about alternative land uses. In Cameroon, for example, legal and regulatory reforms which accompanied the concession reform process introduced for the first time anywhere in West Africa legal recognition of community forests. In DRC, a legal review of concessions resulted in a dramatic reduction in the area of forest under concession management, from 43.5 million ha in 2002 to 9.7 million ha in 2008, and this was accompanied by support for community based forest management; clarification and articulation of the rights of traditional users; the development of innovative ecosystem services models; and means for ensuring community participation and consultation decision making processes related to forest management. In Gabon, somewhere around 4.7 million ha in concessions were cancelled, creating space for introducing new models of forest management.

19. Institutional, policy, and legal reforms which have accompanied the concession reform process in the cases cited by IEG have been carefully sequenced, first by developing multi-sectoral policy interventions to target the most urgent issues, followed by DPLs, and then complemented by investments in analytic work and on-the-ground measures to support specific interventions and safeguards. This sequenced set of measures has accomplished much in terms of the broad array of issues related to the management of all public and forest land and national parks, including the rights exercised by the communities on concessions and other lands.

20. Second, the conditions and circumstances of ‘whether and how’ the Bank should be providing ... support for sustainable forest management in tropical moist forest countries” are already clearly articulated in OP 4.36. IEG’s own report on the need for safeguards reform argued that the Bank should “revise the (safeguards) policy frameworks to harmonize thematic coverage and guidance across the WBG and enhance the relevance of those frameworks to client needs.” The safeguard review process which is already underway will take the relevant evaluative evidence from this review into account.

21. Third, there is already an extensive body of literature published by the Bank and others which is widely available on the social, environmental, and economic impacts of concession

reform³. There is a rich diversity of views about concession reform in this literature. The Bank's approach toward concession reform has evolved substantially in the last 10 years in a way which has been informed by these.

³ For example:

- Topa G., Karsenty A., Mégevand C., and Debroux L. (2009). *The Rainforests of Cameroon: Experience and evidence from a decade of reform*. Washington, D.C;
- World Bank; World Bank (various years). *Inspection Panel Investigation Report on Transitional Support for Economic Recovery Project and the Emergency Social and Economic Reunification Project in Democratic Republic of Congo; Management Action Plan in response to this Inspection Panel Report and the three progress reports for the Board, 2009-2012*;
- Cerutti, P.O., Lescuyer, G., Assembe-Mvodon, S., and Tacconi, L. (2010). The challenges of redistributing forest-related monetary benefits to local governments: a decade of logging area fees in Cameroon. *International Forestry Review* 12(2): 130-138;
- De Blas, D.E., Ruiz Perez, M., Sayer, J., Lescuyer, G., Nasi, R., Karsenty, A. (2009). External influences on and conditions for community logging management in Cameroon. *World Development* 37(2):445-456.
- Delhage C., Kibambe Lubamba J.-P., and Defourny, P. (2011). *Analyse quantitative des causes de la déforestation et de la dégradation des forêts en République Démocratique du Congo*. (FAO-RDC Coordination Nationale REDD N°UNJP/DRC /041/01/2009). Université Catholique de Louvain.
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- Karsenty, A. (2010). Forest taxation regime for tropical forests: lessons from Central Africa. *International Forestry Review*. 12(2):121-129.
- Karsenty, A., Drigo, I.G., Piketty, M.G., and Singer, B. (2009). Regulating industrial forest concessions in Central Africa and South America. *Forest Ecology and Management* 256(2008):1498-1508.
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- World Bank (2011). *Implementation Completion and Results Report (ICR) of the Development Policy Loan on Natural Resources Management (NRM-DPL) in Gabon*.
- World Bank (2011). *Implementation Completion and Results Report of the Ghana Natural Resources and Environmental Governance First, Second and Third Development Policy Operations*.

22. Fourth, the Bank's support for sustainable forest management (SFM) in tropical moist forests is consistent with the prevailing international scientific consensus that SFM is and remains a viable approach for ensuring their long term conservation and sustainable use. Bank support for SFM measures, bolstered by its recognition of the importance of independent third party certification and support for the development and implementation of certification standards, has been an extremely important signal to both public and private sectors that long term conservation measures can be consistent with sustainable use. The ability of the Bank's clients to participate in emerging forest carbon markets will be dependent on their capacity to sustainably manage their forests, and this will never succeed except in partnership with the private sector.

23. Forest concessions are a widely accepted approach to forest management in both tropical and temperate forests. As the IEG report points out, the management of forest concessions has not been without its challenges and there are clear examples where concessions have failed to deliver good outcomes because of corruption, poor governance and conflicting tenure regimes.

24. The challenges of concession management are country specific, and considerations like social contracts, the certification of sustainable forest management practices, and the potential for community involvement can be addressed in many different ways. Management does not believe that a revision of its country-specific approach to institutional and legal reform, would improve development outcomes or effectiveness. Project teams will continue to examine the most effective ways of supporting the development of economically, socially, and environmentally sustainable forestry operations (including concessions) to meet local and export market demands based on country-specific realities. These efforts will be based on best practices, knowledge and experience.

25. ***Sustainable forest management outcome indicators.*** Bank Management agrees with IEG's recommendation that attention should be given to developing and using sustainable forest management outcome indicators which address the three pillars of the strategy: supporting economic growth, reducing poverty and protecting local and global environmental services. This is a systemic problem for governments and development agencies with interests in forests, partly because of the very long time period it takes for sustainable forest management interventions to show impact. Investments in thinning, in tree stand improvement, or in supporting natural regeneration, (and a comparison with forests which are unmanaged), are unlikely to show significant outcomes for 10 to 30 years. This is why the development of forest management plans and their implementation has been an important proxy indicator for SFM outcomes.

26. Bank Management is committed to working with specialists and development partners in clarifying how best these types of indicators could be developed and implemented in a cost effective manner. The use of quasi-experimental approaches will also be examined, and incorporated into planned work on the use of impact evaluation in natural resource management projects. In the coming months, we intend to launch an initiative with this objective in mind, which should complement the Bank's support for work on providing guidance for conservation monitoring.

27. Related to the question of the monitoring of sustainable forest management outcomes, is forest certification. Revisions to OP 4.36 on Forests introduced the requirement, that the Bank would not support certain forest investments in the absence of independent third party verification of sustainable forest management. This was a very significant reform, and much of the support for changes to the OP was predicated on this condition. IEG has not examined to any extent (outside of the IFC) the impact of this change on Bank operations, nor of the Bank's work in supporting governments to develop improved inventory systems and sustainable management practices which establish the preconditions necessary for independently-verified certification.. This is a significant shortcoming of the Review, and it remains an important question for Bank Management whether and under what conditions, the use of certification has improved sustainable forest management outcomes.

28. IEG did not address the role of the External Advisory Group on Forests, which was established to "assess design, relevance, and progress" following adoption of the Forest Strategy. IEG's review could have examined the effectiveness of the EAG as an oversight body, and its usefulness in light of the changing nature of the forests portfolio.

29. *Collaboration within the World Bank Group.* IEG has identified an important shortcoming with respect to weaknesses in collaboration within the WBG. Management agrees that action should be taken to facilitate more effective and complementary forest-related outcomes. Private sector investments in forests globally totals around \$15 billion per year, far outstripping any resources which could be mobilized by the Bank or by any other development institution for new investment in forests. The Bank will seek to engage more proactively with IFC and with MIGA to identify how best it could finance policy and institutional reforms to help create an enabling environment for more effective private investment. As the IEG report notes, if the Bank can work with clients to improve forest policies and legislation, it will create a better enabling environment for the IFC to mobilize subsequent private investment.

IFC Management Response

30. IFC welcomes the report's assessment of IFC's forest product sector operations and its recommendations that are relevant to IFC. The report's suggestions for going forward broadly support IFC's intention to pursue an integrated, industrial and landscape-based approach to investing in private sector forest products companies.

31. IFC also appreciates that the report is positive on the private sector response to the three pillars of the 2002 Forest Strategy as articulated in IFC's Forest Strategy updates. IFC approved 56 projects in the Forest Product Sector during FY03-11 with total investments valued at \$1.5 billion. IEG's review of the 32 operationally mature forest product sector projects, (i.e. approved between FY02 and FY06) show that IFC achieved strong development outcomes in line with IFC's overall average across different sectors. IFC investments in the forest product sector helped companies produce higher value-added products, increase their productivity and production capacity, and foster outgrower markets and job creation for rural poor communities. The forest product sector's contribution to private sector development was particularly strong, with 81 percent of the project achieving satisfactory or excellent ratings, implying that they catalyzed investments and job creation opportunities beyond the project company.

MANAGEMENT RESPONSE

32. IFC notes that because of the report's timing, some recent and significant developments were not considered in the report. For one, the report's finding on IFC's portfolio concentration in downstream operations does not take in account some of the more significant projects in the upstream space committed beyond FY11. In addition, there were positive developments in some of the larger IFC portfolio projects that occurred after the report had been drafted. For example, an IFC project in China received certification for nearly 100,000 ha of forest land from the Forest Stewardship Council (FSC) in December 2012.

33. Going forward, it is important to not to lose focus on the important role of the forest sector in general to broader development of economies and outcomes, including the vital role of forestry and wood products in the energy, agribusiness, chemicals and green construction industries. The future health of the vast majority of remaining forests can only be preserved if they are accorded a financial value which can effectively compete with other land uses including conversion to agriculture.

34. There is a long-standing view regarding protected areas, which states that all forests should be managed by local people for local benefits. There is arguably global agreement that roughly 20 of the world's forests should be preserved in their current natural status and that the balance can and should be addressed as "working forests" for sustainable and multiple benefits. There is thus a danger that the "Protected Area" concerns may inadvertently curtail vital private sector investments in sustainable forestry.

35. Future analysis might benefit from a focus on increasing investment in forests set-asides by sovereign governments and private entities for the sustainable management of production of forest and non-timber products. These are vital and can be buoyed by development institutions such as the WBG.

36. The WBG as a whole will benefit from inclusion of commercial forest plantations in the discussion of approaches to harnessing of forest resources for development. Restoration and reforestation of degraded lands is an important part of the equation to manage demand for wood products and ease pressure on remaining natural forests. IFC is increasing the use of integrated landscape approaches for plantation work to improve forestry and wood products' aggregate contribution to poverty reduction and overall development impact. While constructive suggestions for improvement are welcome, IFC does not believe the IEG analysis justifies a suggestion that the Bank/WBG contemplate whether it should consider discontinuing its work in forest concessions or forest concession reform. Properly established concession regimes which incorporate sustainable management practices and external verification are a must for IFC investments in upstream forestry.

Management Action Record

IEG Findings and Conclusions	IEG Recommendations	Acceptance by Management	Management Response
<p>Protected areas are more effective at reducing deforestation when they are designed and managed by the people that live in and around them and depend on the forest for resources.</p> <p>Poverty can be exacerbated by limiting or restricting communities access to forests through the creation or expansion of a park or a protected area if due consideration is not paid to livelihoods. While projects are triggering OP 4.12, with few exceptions, those projects are not reporting on whether the potential adverse impacts on livelihoods have been mitigated.</p>	<p>Enhance the effectiveness of Bank Group efforts to protect vital local and global environmental services and values by building more meaningful community participation into design and management of protected areas.</p> <p>Consider the following actions: include communities in the design of new or expanded protected areas and in decision-making about management of those areas, assisting with expanded tenure and resource security where applicable, and use innovative techniques to monitor biodiversity; assess the welfare and livelihoods of persons living in and around a protected area system and use resettlement instruments to mitigate any potential negative impacts caused by the project intervention; include in project preparation an assessment of land ownership and use claims, including but not limited to customary and traditional land claims grazing, harvesting, farming, and transit rights; and access to fuel sources and fodder; also assess the contribution of</p>	<p>WB: Agree</p>	<p>Management agrees that effective community participation is essential for improving the management of protected areas and will continue to support this approach in its forest biodiversity conservation projects. Communities however lack the specialized technical skills needed to <u>design</u> protected areas, especially when a park is being gazetted to protect biodiversity. Solid technical knowledge about which biomes need to be protected as global public goods, and the role of the public sector in establishing protected areas and regulating land use within them, remain critical and should not be compromised because of a perception that somehow communities can do this better. Having said this, management effectiveness ultimately depends on deal making and negotiation and agreement over rights of use and access. The Bank has consistently supported measures more fully to engage communities in protected area management, and has an impressive record to support this view.</p> <p>With respect to OP4.12, Management agrees that more systematic reporting of progress in mitigating and, where necessary, offsetting adverse impacts on livelihoods would also be useful. The Bank is already working on ensuring that reporting on the application of safeguard instruments is more thorough. Currently, reporting on</p>

MANAGEMENT ACTION RECORD

IEG Findings and Conclusions	IEG Recommendations	Acceptance by Management	Management Response
	forest resources to household security.		safeguards performance is covered in publicly disclosed supervision mission reports. More systematic report at project completion would be helpful.
Participatory Forest Management, when implemented effectively, has delivered livelihood enhancing benefits as well as positive environmental outcomes. But its potential is often hampered by the failure to devolve true authority to communities and by regulatory environments that often discriminate against small producers. Where this is the case, the benefits enjoyed by communities may be too limited to provide sufficient incentives to ensure sustainable forest management.	<p>Expand support for participatory forest management with help to level the playing field for community based forest enterprises by working with clients to improve regulations and procedures and integrate small scale informal forestry activities.</p> <p>This can be supported with analytic work (with clear dissemination strategies), development policy lending, IFC investment and advisory services, and by the incorporation of regulatory issues in project indicators.</p>	<p>WB: Agree</p> <p>IFC: Agree</p>	<p>Participatory forest management can be an efficient tool in sustainable forest management and improving rural livelihoods. It is not a panacea and much depends on the quality of the forest, access to markets and the investment climate. The Bank will continue to support forest operations which incorporate strong participatory elements to them.</p> <p>With respect to regulatory complexity, this is neither a systemic nor a binding constraint for community-based forest enterprises. Rights of forest use and tenure are a far more significant constraint, and ‘overregulation’ is often only a symptom of more fundamental issues having to do with tenure. The evidence from Bank operations shows that more secure rights of use and access improve forest management outcomes, and that when these have been resolved, community-based forest enterprises have tremendous latitude for operating with great efficiency and effectiveness (for example, within the framework of the regulatory mechanisms introduced and managed by communities themselves.) The Bank will continue its analytical work on the policy and business environment for forest sector investments, at all investment scales (large and small, private and community owned). This will be done in</p>

IEG Findings and Conclusions	IEG Recommendations	Acceptance by Management	Management Response
			<p>close collaboration with the IFC.</p> <p>In future relevant projects/programs, IFC will promote the broad concept of participatory forest management with the project sponsors where appropriate and within the frame of the project's authorizing environment.</p>
<p>World Bank support for industrial timber concession reforms in tropical moist forest countries has helped to advance the rule of law, increase transparency and accountability (as compared to the without Bank scenario) and put environmental standards in place.</p> <p>Evidence is lacking however that these reforms in tropical moist countries with weak governance has led to sustainable and inclusive economic development. Attention to rural poverty has been lacking in World Bank</p>	<p>Undertake and disclose a comprehensive review of the economic, environmental and social outcomes associated with World Bank support for industrial timber concession reforms in tropical moist forest countries with weak governance, including an analysis of the outcomes that could be achieved under alternative land-use schemes.</p> <p>Based on the evidence, determine whether and how the World Bank Group can realistically support effective sustainable forest management in tropical moist forest countries.</p>	<p>WB: Disagree IFC: Disagree</p>	<p>There is already a fairly extensive body of literature published by the Bank and by others which is widely available on the social, environmental, and economic impacts of concession reform. These include a comprehensive review of institutional, policy and legal reforms in Cameroon, for example, the three reports to the Board on progress in implementing the Management Action Plan in response to an Inspection Panel complaint in the DRC, a large number of academic articles, and Bank evaluative material. Management is of the view that an additional review would create little added-value and would do little to inform the development of new operations.</p> <p>The conditions and circumstances of 'whether and how' the Bank should be providing support for "sustainable forest management in tropical moist forest countries" are already clearly articulated in OP 4.36. The on-going safeguards policy reform effort will take account of this IEG review in its work.</p> <p>The Bank's support for sustainable forest management in tropical moist forests is consistent with the prevailing</p>

MANAGEMENT ACTION RECORD

IEG Findings and Conclusions	IEG Recommendations	Acceptance by Management	Management Response
supported concession reform projects. World Bank policy advice and projects that have supported the reform of industrial timber concession regimes have usually neglected or underestimated the nontimber values and uses of the forests, with respect to the livelihoods of forest-dependent people, their traditional claims, sociocultural values, and overall sense of security. Evidence is also lacking that concessioned natural forests are being managed sustainably.			international scientific consensus that SFM remains a viable approach for ensuring their long term conservation and sustainable use. This is echoed in the political consensus of bodies such as the UN Forum on Forests. Bank support for SFM measures, bolstered by its recognition of the importance of independent third party certification and support for the development and implementation of certification standards, has been an extremely important signal to both public and private sectors that long term conservation measures can be consistent with sustainable use. Management does not believe that a revision in its highly country-specific approach to institutional and legal reform, would improve development outcomes or effectiveness. Project teams will continue to examine the most effective ways of supporting the development of economically, socially, and environmentally sustainable forestry operations (including concessions) to meet local and export market demands based on country-specific realities.
The monitoring and reporting systems of the World Bank forest sector operations are inadequate to verify whether its operations are supporting forest management in an	Provide guidance and actively encourage staff to develop and utilize sustainable forest management outcome indicators that can adequately track progress across the three pillars – including indicators that can track and mechanisms that can manage attendant tensions and trade-offs in the forest landscape.	WB: Agree	Measuring and reporting on the impacts and structural changes from the WBG's engagement in the forest sector is essential and it needs to be strengthened. Bank Management agrees that this is an important area which requires attention, and is committed to working with specialists and development partners in clarifying how best these types of indicators could be developed and implemented in a cost effective

IEG Findings and Conclusions	IEG Recommendations	Acceptance by Management	Management Response
<p>environmentally and socially sustainable way, in line with the 2002 Strategy and the Bank Group's Operational Policies. Environmental indicators used in forest projects are mainly process or effort measures (such as number of hectares planted, or numbers of hectares under management plans). Most poverty alleviation indicators were less direct indicators of poverty than is desirable both for accurately assessing project outcomes and for comparison across projects. Poverty reduction indicators like numbers of productive investments made are imperfect measures of whether programs are reaching the most vulnerable members of a</p>		<p>IFC: Agree</p>	<p>manner. The use of quasi-experimental approaches will also be examined, and incorporated into planned work on the use of impact evaluation in natural resource management projects. In the coming months, we intend to launch an initiative with this objective in mind, which should complement the Bank's support for work on providing guidance for conservation monitoring and its work on Core Sector Indicators.</p> <p>The monitoring of changes at the project level poses enormous methodological challenges. Investments in improved forest management or in biodiversity conservation simply take a long time to show impact. Natural population variability makes short term biodiversity outcomes problematic to measure and the sustainability of forest management can be measured only over several rotations. Empirically robust methods to assess the impacts of forest investments on poverty outcomes are equally challenging because of the attribution problem. In developing more robust approaches to monitoring, these considerations will be central. More recent IFC downstream forest product sector projects that were not covered by the evaluation already track chain of custody of raw materials, ensuring our clients source from sustainably managed origins.</p> <p>More recent IFC downstream forest product sector projects that were not covered by the evaluation already track chain of</p>

MANAGEMENT ACTION RECORD

IEG Findings and Conclusions	IEG Recommendations	Acceptance by Management	Management Response
<p>community.</p> <p>Several of IFC's downstream Forest Sector investments cannot be evaluated from a sustainable forest management perspective because information regarding chain-of-custody of the wood products sources is lacking.</p>			<p>custody of raw materials, ensuring our clients source from sustainably managed origins.</p>
<p>IFC Forest Product Sector (FPS) investments have helped forest companies produce higher value-added products, increase productivity and production capacity, and foster outgrower markets and job creation for rural poor communities. These investments have been targeted mainly downstream. Investment in downstream processing of forest and wood products are</p>	<p>Target IFC's downstream investments and MIGA's support towards firms that can have a catalytic effect on generating greater demand for and supply of sustainable forest products. Make traceability a priority in IFC Forest Product Sector Investments, and associated MIGA guarantees both up and downstream.</p>	<p>IFC: Agree</p>	<p>IFC will look for opportunities to invest in catalytic downstream projects which favor traceability and a sustainable value chain.</p>

IEG Findings and Conclusions	IEG Recommendations	Acceptance by Management	Management Response
<p>highly relevant for sustainable forest management when targeted to create demand for certified supplies upstream. IFC has stepped up efforts at supporting sustainability along the supply chain, but the record indicates continued challenges in achieving certification and ensuring sustainable forest management.</p>			
<p>As IFC seeks to move its investments upstream – as envisioned in its 2010 Strategy Update - there are several lessons that can be learned from its operations with regard to land and resource rights and claims and about stakeholder engagement. In particular,</p>	<p>Use the upstream experience gained by IFC's advisory and investment operations to mitigate project risks and assist with community and company relations as IFC moves its investments upstream. Adjust skills accordingly.</p>	<p>IFC: Agree</p>	<p>IFC recognizes that a wealth of community/land rights knowledge has already been gained by IFC through its investment programs and recent advances in AS programs. IFC's enhanced focus on linked AS and IS projects will facilitate consultation and participation of communities in forestry investments.</p>

MANAGEMENT ACTION RECORD

IEG Findings and Conclusions	IEG Recommendations	Acceptance by Management	Management Response
linking IFC's Advisory Services with investments can help in mitigating social risks and enhance development results.			
<p>In a few cases World Bank Group cooperation has facilitated effective forest sector-related outcomes. The Bank Group has been most effective as an institution when the World Bank's work to help countries lower barriers to private sector entry in the forest sector has been combined with IFC and MIGA support to catalyze sustainable investments in the forest sector. Action on such complementary services was found in China, Nicaragua, Russia, and Uruguay but nowhere else.</p>	<p>Develop mechanisms and instruments between Bank, IFC and MIGA—such as joint action plans, coordinated business development and integrated product offerings—in strategically important countries to offer a well-sequenced package of forest-related products and services to clients and better use the synergies between the public and private sector arms of the World Bank Group.</p> <p>Depending on country circumstances, opportunities for synergies exist in such areas as: mobilization of private funds for conservation, including by encouraging private investment in sustainable tourism and markets for eco-friendly products; use of IFC advisory services focused on leveling the playing field for community forestry and small and medium enterprises in the sector; potential combination of Bank policy reform and IFC/MIGA support to catalytic investments with demonstration effects in timber concessions; certification and industry standards for biodiversity-friendly business practices where experience shows that</p>	WB: Agree	<p>Management agrees that close collaboration at the country-level is needed between the Bank, IFC and MIGA and could lead to better outcomes. Ideally, Bank investment should focus on policy and institutional reforms which help create the enabling environment for the type of private investments which can be mobilized by the private sector. At the same time, Management is of the view that a coordinated approach would be viable in only limited conditions, where there was both government demand for this type of sequencing, and private sector interest in investment.</p> <p>The demand-driven nature of Bank lending would makes strategic sequencing of interventions somewhat challenging.</p> <p>Consequently this objective can be best promoted by opportunistic interventions, constant exchange of information of planned activities at early stages of project preparation and joint missions rather than rigid action plans.</p> <p>The Bank and IFC, together with MIGA, will launch consultations between the agencies to identify and remove impediments to smooth collaboration and how to</p>

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IEG Findings and Conclusions	IEG Recommendations	Acceptance by Management	Management Response
	voluntary industry action can be effectively supported by government policies; REDD/carbon finance agenda where pilot investments supported by IFC can complement the policy-level work led by the Bank and its forest-related partnerships.	<p>IFC: Agree</p> <p>MIGA: Agree</p>	<p>enhance joint engagement with client countries. This will happen both at the level of management and task teams.</p> <p>IFC will continue to look for synergistic opportunities and collaborate with the Bank and MIGA at the strategic and project levels where it makes sense in certain countries and markets.</p> <p>MIGA will actively collaborate with the Bank and/or IFC when supporting FDI into these projects, and will look for synergistic opportunities within the WBG.</p>

Chairperson's Summary: Committee on Development Effectiveness

The Committee on Development Effectiveness (CODE) met to consider *Managing Forest Resources for Sustainable Development: An Evaluation of World Bank Group Experience* (CODE2012-0054) and *Draft Management Response* (CODE2013-0003).

The Committee welcomed the Independent Evaluation Group's (IEG's) evaluation of the World Bank Group's support for Managing Forest Resources for Sustainable Development.

The Committee expressed strong and unambiguous support for continued World Bank Group (WBG) engagement in the Forests Sector. The Committee agreed that the WBG has a unique and key role to play in supporting effective sustainable forest management in client countries, including supporting timber concession reform. The Committee underscored that WBG support to the sector, on the whole, has had a positive impact on environmental outcomes and on improving forest governance.

CODE welcomed Management's agreement with most of IEG's recommendations. The Committee, however, disagreed with IEG's recommendation regarding timber concession reform in tropical moist forest countries. The Committee was not in favor of undertaking a parallel review to the ongoing safeguard review. Furthermore, CODE had questions on the comprehensiveness of the analysis underpinning the recommendation.

CODE urged Management to continue to assess how the WBG can best add value in the challenging Forests Sector. It welcomed the proposed Forests Action Plan, to follow up on the 2002 Forests Strategy. CODE requested that in this forward looking context strengthened poverty reduction targets should be articulated, short-term proxy indicators for long-term impacts developed and improved monitoring and evaluation frameworks established. In particular, the Committee stressed that future interventions by the WBG should include rigorous assessments of expected economic, environmental, social and poverty impacts to improve implementation when engaging in timber concession reform in challenging environments. CODE also looked forward to the Action Plan addressing how forests support can be integrated into wider smart land use policies.

1. The State of the World's Forests and the World Bank Group Response

Highlights

- ❖ The World Bank Group's 2002 Forest Strategy established three main objectives: protecting vital local and global forest environmental services and values, harnessing the potential of forests to reduce poverty, and integrating forests into sustainable economic development.
- ❖ The strategy included not just tropical moist forests but also other forest types, such as tropical dryland forests and woodlands. In addition, it put a stronger focus on the potential for wealth creation, poverty alleviation, and resilience. The changes in strategy resulted in increased support for both environmental services and livelihoods in Africa—especially in the Sahelian region. The Bank has continued to engage in tropical moist forest countries and in the regions that have experienced the highest rates of net deforestation — but mainly in support of environmental services and conservation aims. The Bank has also contributed to large-scale tree planting efforts in East Asia.
- ❖ International forest companies have been shifting their pulp production capacity from the Northern hemisphere to South America—where the warmer climate can mean up to five times greater timber yields. Paper and board production has been shifting closer to fast-growing consumer markets in Asia, such as China and Indonesia. These global trends explain the outlay of IFC's forest sector investments.
- ❖ IFC updates to the 2002 Forest Strategy in 2008 and 2010 aimed to support sustainable businesses at all points along the forest value chain: from upstream investments in natural forests, plantations, and farm forests to downstream investments for pulp and paper, panel board, furniture, and so on. The bulk of IFC's investments to date have been made downstream although there is an increasing focus on upstream involvement. IFC Advisory Services, on the other hand, have been working upstream on environmental, social, and land-related issues that are critical for achieving strategy aims.
- ❖ There are synergies and trade-offs among the goals of reducing forest poverty, reducing deforestation, and boosting forest-based production. This evaluation, comprising 289 World Bank projects, 56 IFC investments, 44 advisory service operations, and 3 MIGA guarantees examines the achievement of these portfolios against the three pillar aims — including how potential synergies and tensions between the three objectives were considered, measured, and managed in project design and implementation.
- ❖ The Bank Group has redefined its global engagement and partnership strategy in response to the changing dynamics in the forest sector and is engaged in fifteen forest partnerships that are strongly aligned with the strategy's environment and poverty pillars, but less so with the economic development pillar.

Poverty, Environment, Growth, and Forests

About 4 billion hectares, 31 percent of the world's land area, is covered with forest. Beyond its sheer size, the forest estate attracts World Bank Group attention for three reasons. First, forests are home to, and sustenance for, hundreds of millions of people, including some of the world's poorest. Almost 70 million people, many of them indigenous or members of traditional communities, live in forests. Another 735 million rural people live in or near forests and savannas, relying on them for much of their fuel, food, and income—or converting them to croplands and pasture (Chomitz 2007). Further, globally, more than 1.6 billion people, many of them poor, depend directly on forests for food or fuel.

Second, deforestation results in severe local and global environmental damage. Land use changes, including the destruction of forests, are now thought to contribute to between 7 to 14 percent of annual anthropogenic carbon dioxide emissions globally (Harris and others 2012),¹ thereby accelerating climate change. Deforestation is also a major driver of global biodiversity loss and may contribute to the emergence of new zoonotic diseases. At the local level, deforestation and forest degradation can disrupt hydrological processes, and are associated with air pollution that threatens both health and economy.

Third, sustainable commercial exploitation of forest products could contribute to economic growth. The forest sector contributes \$460 billion in gross value added (2006)—equivalent to about 1 percent of global gross domestic product—of which developing countries account for more than 20 percent (IFC 2011).² Although forestry comprises a small portion of GDP in the aggregate, forest products can loom larger in forest-rich countries. In Cameroon, for instance, timber accounts for 25 percent of foreign exchange, second only to petroleum, and some 4.8 percent of GDP, not including informal uses (Karsenty and others 2009). (Calculations of the sector's contribution to global GDP rarely capture the full value of illegal and informal forest production or important subsistence forest uses.) Growing global demand for wood products suggests that economic opportunities will increase.

There are synergies and trade-offs among the goals of reducing forest poverty, reducing deforestation, and boosting forest-based production. Improved forest governance has the potential to advance all three goals. Poor forest governance stems from the fact that forests often have a combination of capturable wealth but poor, isolated, and powerless residents. Powerful interest groups can seize this wealth, depriving poor people of access to forest resources, and sometimes contributing to corruption and poor governance at the national level. Because it is more profitable to “mine” the forest than to manage it sustainably, this contributes

also to environmental damage. Therefore, institutional reform and improved law enforcement and governance have the potential to reverse these interrelated problems.

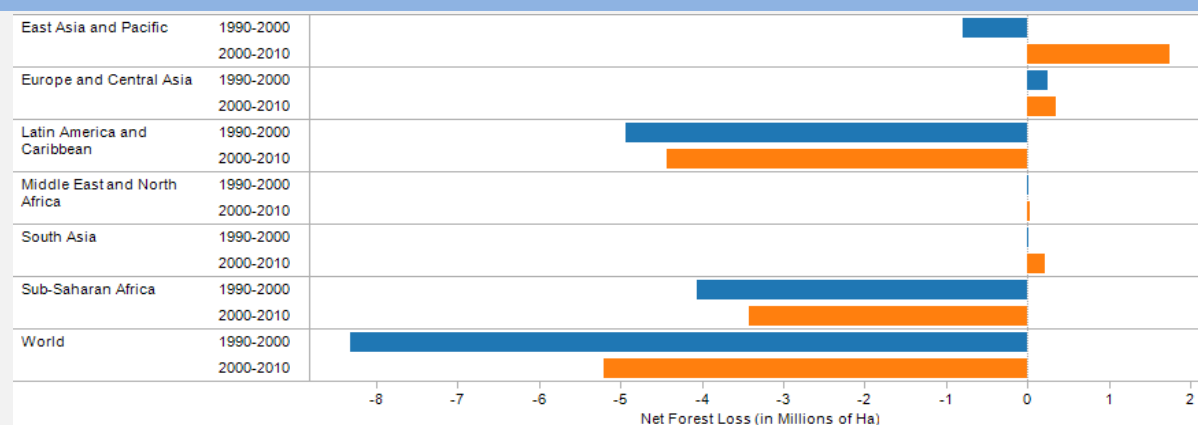
However, there can be genuine trade-offs among the goals. Some forms of sustainable agriculture offer more income and employment per hectare than natural forest management, which relies on decades-long cutting cycles for regrowth. Further, some kinds of plantations and forest product manufacture may offer good economic returns but relatively little direct employment or other benefits to poor people. Potential for synergies also exists, as multiple uses of well-managed forests can provide recreational, environmental, and economic services.

Global Forest Trends

Five important trends have shaped the forest world over the past decade. First, deforestation continues, although at a slightly decreased rate.

The Food and Agriculture Organization (FAO) reports that over the period 2000–10, forest degradation and deforestation reduced natural forest cover worldwide by about 13 million hectares per year, down from 16 million hectares in the previous decade (figure 1.1). The loss is mainly due to the conversion of tropical forests to agricultural land. The loss of tropical forest is highly concentrated in Brazil and Indonesia, which accounted for 73 percent and 13 percent, respectively, of 2006 deforestation and 61 percent and 16.5 percent of 2011 deforestation (Wheeler, Kraft and Hammer 2011). Partially offsetting that loss, afforestation and regrowth added 8 million hectares, but these forests (mostly plantations) are inferior to natural forests in biodiversity, carbon storage, and other environmental values.

Figure 1.1. Net Forest Cover Change, 2000–2010



Source: FAO 2010.

Note: Net loss = gross deforestation – (afforestation + natural regrowth)

Deforestation rates change considerably from year to year in response to changing economic conditions (Wheeler, Kraft and Hammer 2011). The decline over 2006-11, though perhaps in part attributable to policy changes in Brazil, may also reflect the global slowdown due to the financial crisis. Deforestation remains sensitive to commodity prices. Population and economic growth will continue to drive up demand for palm oil, soybeans, beef, and timber, thereby putting long-term pressure on forests.

Second, there have been major changes in the ownership and management of forests. Protected areas (such as national parks) have expanded dramatically and now comprise 27 percent of the tropical forest estate (Nelson and Chomitz 2011). While forests historically have been under the statutory ownership of governments, there has been a trend toward increased decentralization of management and devolution of ownership. The percentage of forestland in developing countries owned by indigenous peoples and communities rose from 21 percent in 2002 to approximately 31 percent in 2012, with the bulk of this transfer occurring in the Latin America and Caribbean (LAC) region (RRI 2012).

Third, the crucial role of forests in the effort to mitigate climate change has in recent years been broadly acknowledged and has become the central issue in the global forest-related dialogue and policy processes. The Bali Action Plan, a 2008 agreement under the auspices of the United Nations (UN) Framework Convention on Climate Change, sought to mobilize positive incentives for countries to reduce their greenhouse gas emissions from deforestation, an initiative called Reducing Emissions from Deforestation and Forest Degradation (REDD+). However, the delays and uncertainties in establishing a post-Kyoto global climate regime have slowed down implementation of REDD+. Public and private payments for forest carbon emission reductions are far below the level envisioned a few years ago.

Despite this prolonged state of uncertainty, efforts to develop the capability to tap prospective REDD+ funds are ongoing in many tropical forest countries. These are supported by bilateral and multilateral donors and financing institutions, including the World Bank Group. In the process, institutions and experts have come to realize that there was initially a gross underestimation of what is required in terms of political will, commitment, institutional effort and capacity development to achieve “REDD+ readiness,” that is, the capacity to produce verifiable carbon emission reductions from reduced deforestation and forest degradation.

Recognition of the importance of underlying issues, such as forest governance, indigenous peoples' rights, extra-sectoral influences, and integrating carbon payments into broader multifunctional benefit streams, have transformed the REDD+ discourse from its initial focus on forest carbon (and its measurement) to today's mainstream discussion on sustainable forest management. This has increased the emphasis on the need for holistic approaches instead of focusing solely on forest carbon.³

Fourth, there is growing attention to curbing illegal logging and other forest crimes. In many tropical countries, illegally procured timber is estimated to account for more than half of the total production. In addition, illegal operators create an uneven playing field through an artificially deflated cost structure, making the operations difficult for those loggers and industries that respect the rule of law and commit to sustainable operations. There is a growing consensus that illegal logging and trade of illegal forest products is symptomatic of broader governance failures in the sector and beyond in many developing and transition countries. Therefore, the issue cannot be addressed by the forest sector in isolation. It is also increasingly recognized that addressing this constraint is a prerequisite for the implementation of any measures aimed at improving forest management and conservation and reducing deforestation and forest degradation, such as REDD+.

Fifth, over the last two decades, international forest companies have shifted their pulp production capacity from the Northern Hemisphere to South America where the climate is yielding up to five times the timber yields. Shifts are also occurring in paper and board production to Asia to be closer to growing consumer markets. In this context, the competitiveness of pulp, paper and board industries is driven by: (i) the cost of manufacturing (new efficient plants versus older plants); (ii) transportation costs (location of pulp mill in relation to plantations and paper and board mills); and (iii) mill gate cost, availability and quality of wood supply.

A specific set of governance-related issues and challenges concerns countries still in transition, for example, in Eastern Europe and Central Asia – many of which have joined the European Union (EU) or are in the process of EU accession. A number of these countries are still in the process of adapting their institutional structures and economies to the demands of a market economy.

Similarly, many emerging market countries, such as Brazil and China, face issues related to rapid economic growth and attendant land-use changes, as well as their social and environmental implications. Controlling the transboundary impacts of the rapid economic development and need for raw materials for both domestic demand and the growing export-oriented industries presents formidable challenges in some

emerging economies, such as China and Vietnam. These have profoundly affected the global trade patterns of timber and wood-based products and made the value chains difficult to track to ensure the legal and sustainable origin of the wood raw material.

The World Bank Group's Approach and Support to Sustainable Forest Management

The World Bank Group's 2002 Forest Strategy recognized the challenges – and opportunities – of sustainable forest management. *Sustaining Forests – A Development Strategy* incorporated many of the findings and recommendations of IEG's *Review of the Implementation of the Bank's 1991 Forest Strategy* (2000). The Bank's 1991 Forest Strategy, implemented between 1991 and 2002, focused mainly on environmental issues, particularly on protection of tropical moist forests. It reflected rising international concern about the rate of tropical deforestation by adopting a “do no harm” approach of not financing commercial logging in primary tropical moist forests. As IEG pointed out, however, the emphasis on safeguarding forests did little to help countries actively manage their natural forests, especially in the tropics, thereby leaving the Bank scant opportunity to help countries harness the potential of forests for their poverty-reduction and economic development potential. Table 1.1 summarizes the differences between the two strategies (IEG 2002).

IFC provided two updates to the 2002 Forest Strategy in 2008 and 2010. Both aimed to support sustainable businesses at all points along the forest value chain: from upstream investments in natural forests, plantations, and farm forests to downstream investments for pulp and paper, panel board, furniture, and so on.

While the 1991 Strategy focused mainly on the conservation of primary tropical moist forests, the 2002 Strategy reoriented the Bank Group's engagement in forests around three “pillars,” or objectives, more aligned with its stated mission of:

- Protecting vital local and global forest environmental services and values;
- Harnessing the potential of forests to reduce poverty; and
- Integrating forests into sustainable economic development.

Table 1.1. Differences between the 1991 and 2002 World Bank Group Forest Strategies

	1991 Forest Strategy	2002 Forest Strategy
Forest focus	Tropical moist forests	All forest types
Priority countries	Forest-rich countries	Forest-rich and forest-poor countries
Thematic focus	Forest protection Resource creation Biodiversity conservation	Harnessing the potential of forests to reduce poverty Integrating forests into sustainable economic development Protecting vital local and global forest environmental services and values
Safeguards	Logging ban in tropical moist forests	Protecting critical natural habitats Independent verification of sustainable forest management
Implementation	Internal cooperation No internal strategy No incentive structure	Internal strategy developed based on selective engagement with partners

Source: World Bank, Progress Report on Implementation of the Revised Forest Strategy and Policy, Environmentally and Socially Sustainable Development Forest Team. August 2004.

This was a strategic shift from the 1991 Strategy's exclusive focus on forest protection and biodiversity conservation to a more balanced approach with the 2002 Strategy – one that treats poverty alleviation and economic development on equal footing with conservation. While it recognized there are trade-offs and tensions between the three strategic objectives, it reflected a belief that with proper safeguards and measures, the Bank Group would be in a position to manage the trade-offs and tensions, thus realizing the perceived potential of forests for growth and poverty reduction.

The strategic shift from an exclusive focus on tropical moist forests to include other forest types, such as tropical dryland forests and woodlands, recognized the significant potential for wealth creation and economic development, poverty alleviation and increased resilience to climate change – as well as the important ecological services that can be provided by these unique forest ecosystems (Takimoto, Nair and Nair 2008; IUCN 1989; Kareiva and Marvier 2003). Dryland forests pose distinctive challenges, including overlapping claims on resources by farmers and pastoralists.

The 2002 Strategy described a menu of interventions to support implementation of the three pillars:

- To protect vital local and global forest environmental services and values, the Bank would continue its support for the creation and expansion of protected areas, and for improved forest management outside of these areas (buffer zones). It would also develop markets and finance for international public goods, such as biodiversity and carbon sequestration, including payments for environmental services.

- To *promote poverty alleviation*, the Bank would support the scaling up of participatory forest management (PFM) so that local people could manage their own resources, freely market forest products, and benefit from security of tenure.
- To achieve progress on the *integration of forests into sustainable economic development*, the Bank Group would help governments improve policy, economic management, and governance in the forest sector, including forest concessions and other allocation policies, as well as address the potential impacts of economy-wide adjustment operations upon forests. The World Bank Group would also support government efforts to bring about ecologically, economically, and socially sound management of production forests. To this end, in addition to the Bank's standard implementation and safeguard procedures, it would encourage independent monitoring and certification of forest operations.

The 2002 Strategy also recognized that forest-based products and services range from global to local and from public to private, often being partly or wholly mutually exclusive and involving considerable externalities, trade-offs, and winners and losers, depending on which development path is chosen for the sector. The various stakeholder groups associated with resource management have varying levels of influence in these decisions, often leading to a situation where those most dependent on the resources—local communities and indigenous people—have the lowest possibility to influence decisions on their use. Thus, any sustainable development path in the sector needs to address the synergies and trade-offs inherent in the 2002 Strategy objectives in a balanced way.

Interventions therefore should be designed to maximize complementarity between forest conservation and sustainable forest-use strategies at the landscape level. Through spatial planning and targeted investments, the World Bank Group would, among other things, support a continuum of: totally protected areas; multiple-use forests, and production forests with certified harvesting.

The World Bank Group Portfolio under the New Forest Strategy

The World Bank approved 289 forest sector-related projects between July 2002 and June 2011 (FY03–FY11) in 75 countries. World Bank forest sector projects can and often do include several forest-related interventions that are designed to be in line with one or more of the Strategy Pillar aims (Table 1.2).

Table 1.2. World Bank Forest Portfolio by Intervention Type and Common Activities (FY03-11)

Intervention Types	No. of Proj	Agro Forest ry	Carbon	Adaptation	ESMF	FLEG TF	Ind Timb Reform	Mainstreaming	PA	PES	PFM	REDD/FIP/FCPF	SLM/IEM	WSM	Other
Agroforestry	6						*		*						
Carbon	21	*							*					*	
CC Adaptation	12	*	*				*		*				**	*	
ESMF	3														
FLEG TF	3														
Industrial Timber Reform	21					*			**		**				
Mainstreaming Env in Policy	11		*						**	*	*	*			
PA	100	**	*				*			*	**		***	***	
PES	11	*	*						**				*	*	
PFM	32	**	**	*			***		**	*			***	*	
REDD/FIP/FCPF	3														
SLM/IEM	26	***	*						**	*	*			*	
WSM	22	***		*				*	*		*		*		
Other	18						*								
Grand Total	289	36	39	15	3	4	34	12	126	18	46	4	53	40	18

Source: IEG.

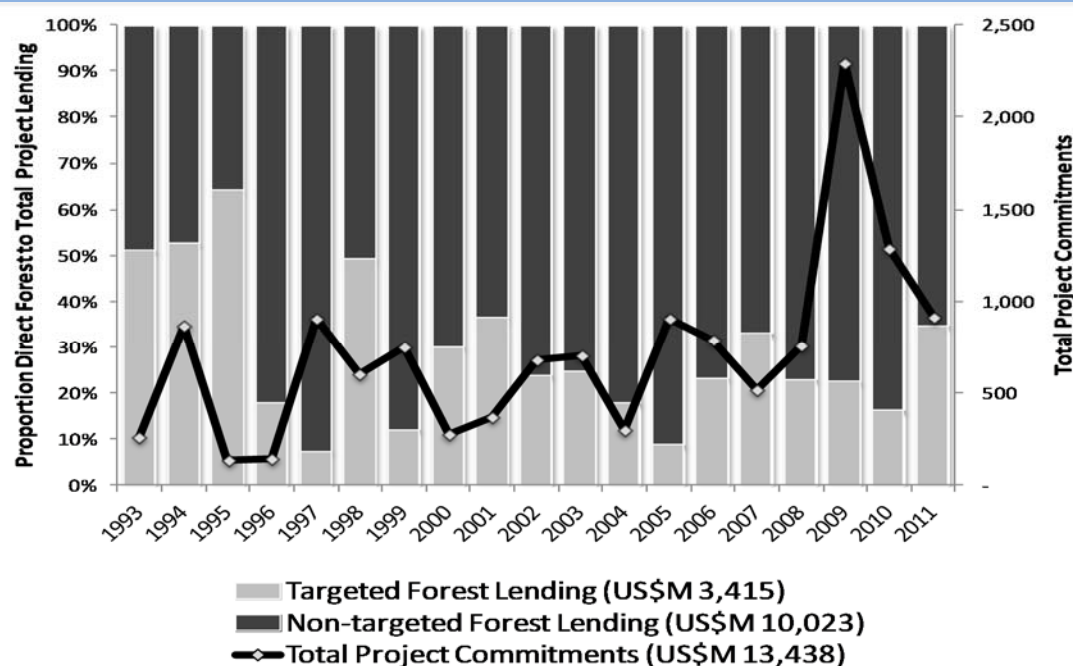
Note: CC=Climate Change; ESMF=environmental and social management framework; FCPF=Forest Carbon Partnership Facility; FIP=Forest Investment Program; FLEG=Forest Law Enforcement and Governance; IEM= Integrated Ecosystem Management; PA=Protected Areas; PFM=Participatory Forest Management; REDD=Reducing Emissions from Deforestation and Forest Degradation; SLM=sustainable land management; WSM= watershed management. Grand Total numbers reflect the sum of each column including the darkened box (where the intervention type meets itself).

Strategy pillar focus varies by intervention. For example, protected area projects tended to emphasize environmental assets and, to a limited extent, poverty alleviation. Participatory forestry projects tended to show more balanced goals, but with significant trade-offs evident in the formulation and weight assigned to specific outcome indicators in relation to poverty and the environment. Projects with a significant emphasis on sustainable land management tended to be designed with the implicit assumption that environmental measures such as increased soil fertility, rangeland improvements, and enhanced diversity of vegetation would improve livelihoods.

The World Bank estimates financing for forests by calculating the total costs of project components that are forest-related. In general, projects tend to have three to five components. According to this method, the total financing for forests was \$1.9 billion—supplied through 178 projects—over the past decade. On average, financing for forests represented 22 percent of total project costs (\$8.5 billion). But IEG identified an additional 111 projects that had forest-related components that had not been coded as such by the World Bank, raising the total number of projects with forest-related components to 289. Using the average reported above, IEG estimates that an additional \$650 million went to forest sector-related activities—raising the level of total financing for forests through project-level activities to \$2.6 billion over the review period.

Using just those projects that the World Bank has recognized as having forest components, IEG finds that, while both the number of forest-related projects and forest-related lending increased after the 2002 strategy (from 115 activities valued at \$1.5 billion to 178 activities valued at \$1.9 billion), forest sector activities occupy a smaller proportion of overall project lending than before the shift (Figure 1.2). A review of the portfolio found that this shift is due to an evolution in the way that projects have integrated trees into larger ecosystem and landscape-level management programs. Exceptions include stand-alone protected area projects financed by the Global Environment Facility (GEF) and projects financed through carbon funds.

Figure 1.2. World Bank Forest Lending as a Proportion of Total Lending in Projects with Forest Components (FY1993–2011)

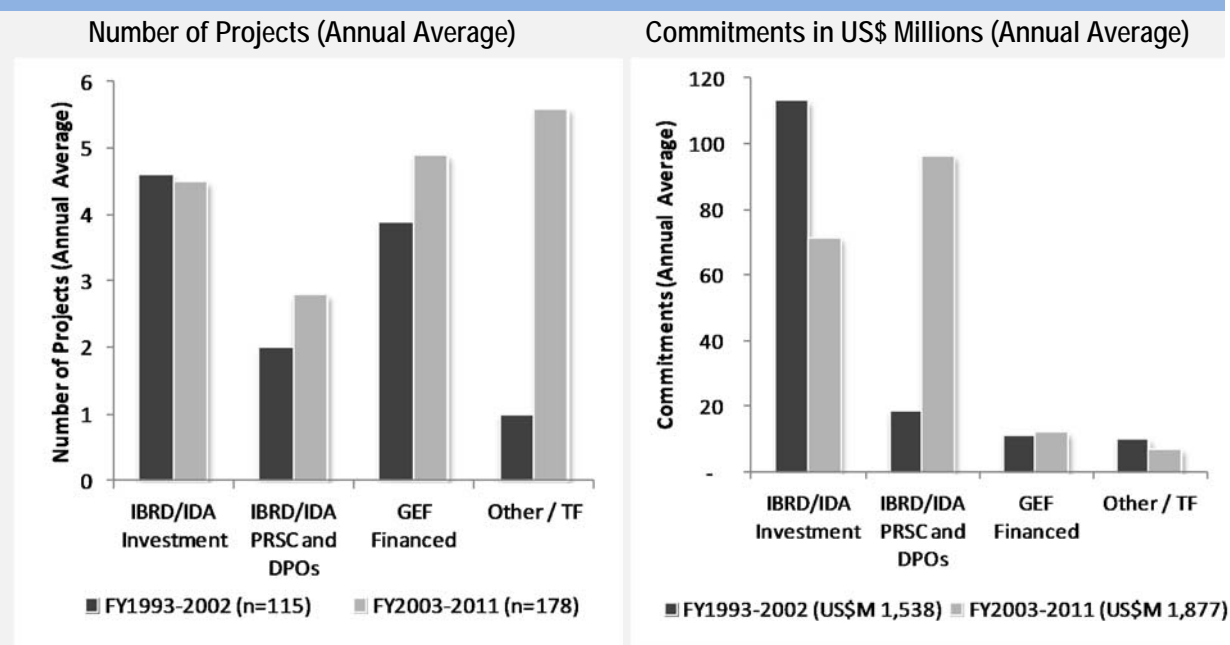


Source: World Bank Data.

This finding is significant since over the post-strategy period, the range of non-IBRD/IDA instruments that the Bank has been using to address forest sector issues has expanded considerably. As the 2002 Strategy had envisaged, the Bank now provides financing to forestry through more GEF-supported projects (blended, free-standing, and medium-sized), carbon funds, and other trust funds (Figure 1.3). The average annual number of forest-related GEF projects implemented by the Bank increased by 62 percent between 1992–2001 and June 2003–June 2012. Likewise, the average volume of GEF funds committed to forest-related activities increased by 85 percent after 2002. In its 5th replenishment cycle (2010–2014), the GEF has also

created a separate \$250 million funding envelope for Sustainable Forest Management and REDD+.

Figure 1.3. Direct Forest Lending Projects by Product Line, FY1993–2011



Source: World Bank Data.

Note: DPO= Development Policy Operation; GEF= Global Environment Facility; IBRD= International Bank for Reconstruction and Development; IDA= International Development Association; PRSC=Poverty Reduction Support Credit; TF= Trust Fund.

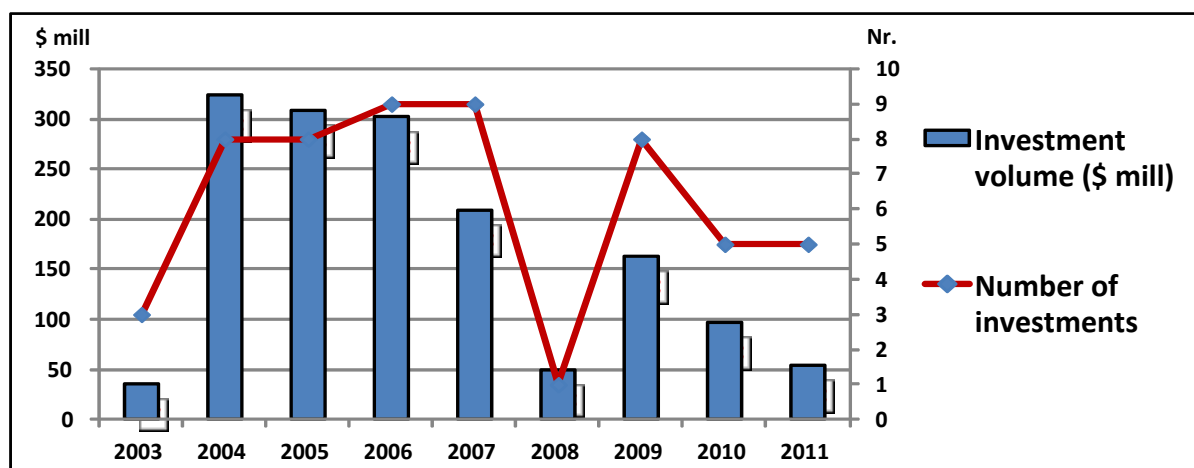
During the same period, IFC approved 56 projects in the Forest Product Sector (FPS) with total investments valued at \$1.5 billion (see Figure 1.4). The global financial crisis affected the industry, and this is reflected in IFC investment trends.

Investments are designed to support sustainable businesses along the entire forest product supply chain, from plantations to production of furniture and panel products to paper products and construction lumber (IFC 2012). The largest share of Forest Product Sector investment was in paper and board production (54 percent of the volume of investments, including paper and board and converting to tissue, printing and writing, and box products), followed by mechanical wood production (34 percent, consisting of panels, engineered and other wood products and furniture), processing (8 percent, consisting of pulp mills), and primary production of wood (4 percent, consisting of natural and plantation forests). IFC's operations included companies that operated production facilities and their own or contracted plantations (for example in China and Uruguay) as well as companies that sourced

wood for their production facilities from third parties, for example, from forest farms in India.

IFC also included advisory services in its approach to the sector. It supported 44 advisory service operations valued at \$30 million. In contrast to the investment operations, these services mainly have been offered upstream.

Figure 1.4. IFC Forest Product Sector Investments 2003–2011



Source: IEG/IFC.

Note: In FY11, IFC made a \$20 million investment in the GEF Africa Sustainability Forestry Fund. This investment was classified as a private equity investment, and was not included in the analysis of IFC's forest portfolio.

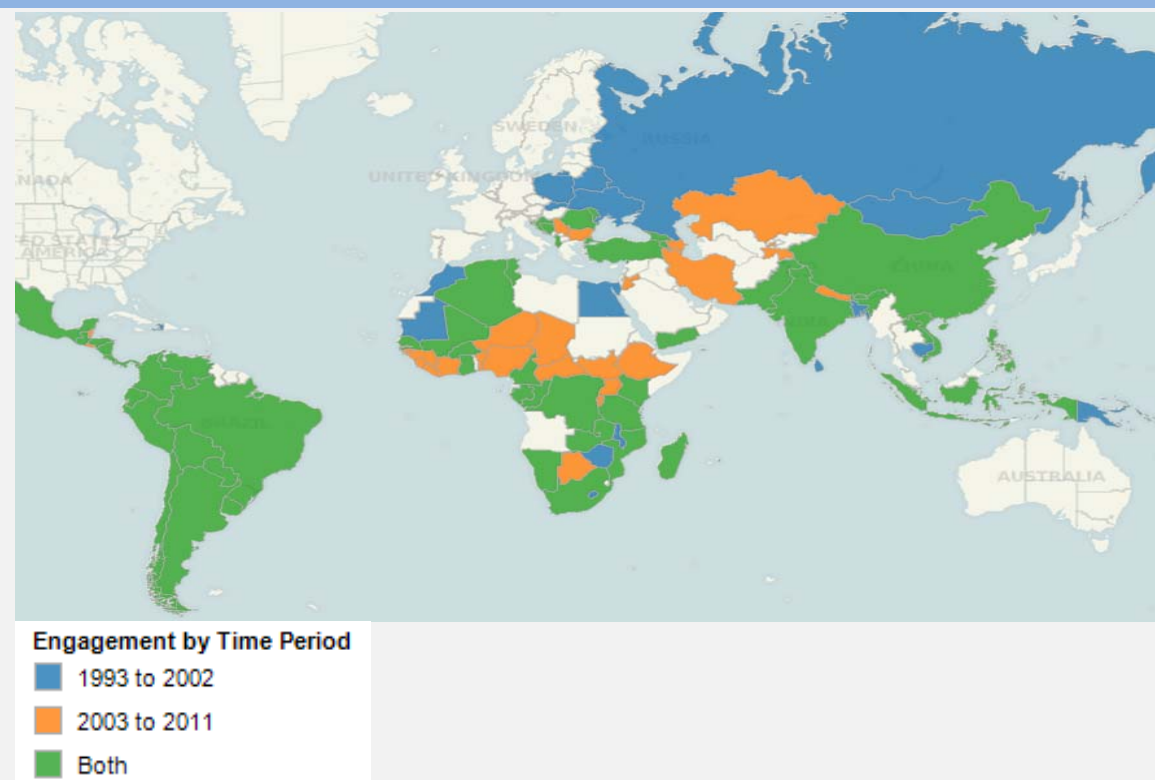
MIGA's mission is to promote foreign direct investment (FDI) into developing countries to help support economic growth, reduce poverty, and improve people's lives. Its operational strategy aims to attract investors and private insurers into difficult operating environments, placing an emphasis on IDA clients, conflict-affected environments, complex deals in infrastructure and extractive industries, and South-South investments. MIGA has supported three forest-related guarantees: (i) a rubber/wood-chipping investment in post-conflict Liberia, (ii) in Maputo -- where it has promoted South-South exchange between South Africa, Swaziland, and Mozambique; (iii) and a greenfield pulp mill investment in Uruguay that was supported by IFC as well.

A SHIFT TOWARD AFRICA AND TOWARD DRY FORESTS

With regard to public sector lending, this evaluation finds that the shift from an exclusive focus on tropical moist forests to include other forest types, and the stronger focus on the potential for wealth creation, poverty alleviation and increased resilience was manifested in a significant shift in emphasis toward Sub-Saharan Africa — particularly the Sahelian region (Figure 1.5). This is significant since dryland

forests and woodland areas extend over approximately 43 percent of the African continent and include some of the poorest countries in the world (Koochafkan and Stewart 2008, IMF 2012). The common resources found in these dryland forests and woodlands have commercial potential (charcoal, gum arabic, and so on), are critical for livelihoods (for example, grazing, hunting, collection of wood fuel, and nontimber forest products collection) and are also highly susceptible to climate change.

Figure 1.5. World Bank Forest Activities Before and After the 2002 Forest Strategy, by Country

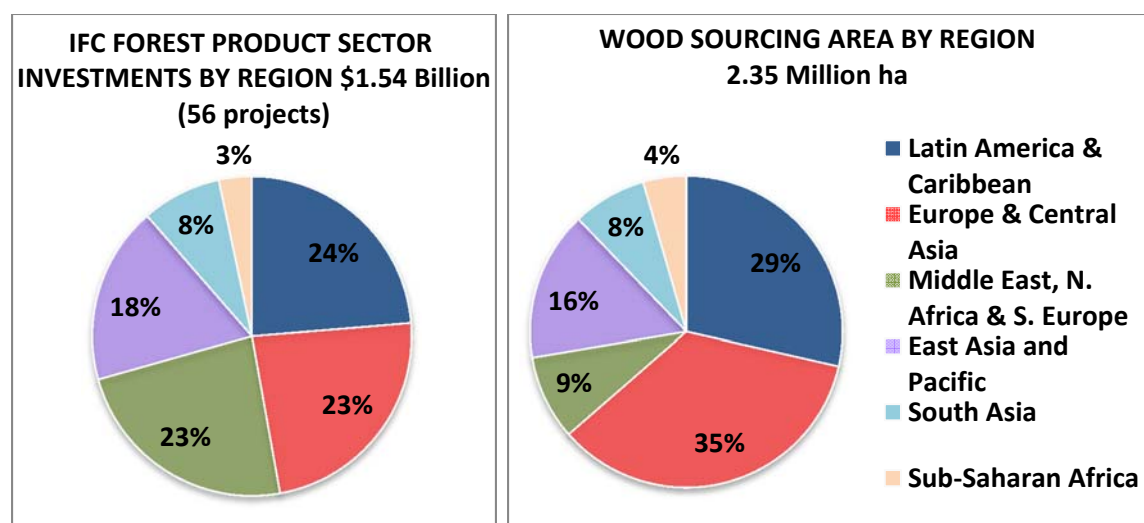


Source: IEG.

The Bank has stayed engaged in Brazil, which accounts for the bulk of tropical forest loss, and to a lesser extent in Indonesia, the country with the second largest deforestation rate. It has been engaged in China, which has expanded its forest plantation areas from 47 million hectares in 1999 to 62 million hectares in 2008. Most of the Bank's work in China has been directed toward tree planting for enhanced environmental management through afforestation, or reforestation designed to promote watershed and land management and resilience to climate change. In India, engagement in the post-strategy period had also mainly supported land and forest conservation.

IFC's investments have shifted alongside global industry trends. As stated earlier, international forest companies have diversified their raw material base and pulp production to the Southern Hemisphere, which has a favorable climate for eucalyptus plantations and wood rotation of 5-15 years – as compared with 40-60 years in the boreal forests of the Northern Hemisphere. Paper and board manufacturing has also shifted to the south to be closer to growing consumer markets such as China and Indonesia, and to take advantage of production costs for pulp that are 30-50 percent lower than in northern boreal forests. Half of IFC's investment volume and wood sourcing in FPS was in the Latin America and the Caribbean, and East and South Asia and Pacific regions. Europe and Central Asia represented about one-quarter of investments (Figure 1.6).

Figure 1.6. IFC's Forest Product Investments by Region 2003–2011



Source: IEG/IFC.

THE WORLD BANK GROUP'S PARTNERSHIP APPROACH

Over the past decade, the World Bank Group has redefined its global engagement and partnership strategy in response to the changing dynamics in the forest sector. It is currently engaged in 15 global policy and operational forest partnerships (see a review of the operational partnerships against the three pillars in Table 1.3). Most of these efforts are strongly aligned with the environmental and poverty pillars of the strategy, but less so with the economic development pillar. These efforts involve regional or global cooperation, recognizing the interconnectedness of markets for both forest products and for products such as beef and soy that displace forests, as well as for the global public good nature of key forest services. They also recognize that effective land-use planning and regularization, consultative processes with indigenous and local communities, respect for indigenous and traditional rights, and

landscape-level planning are prerequisites to mitigate the potential negative impacts of forest-related investments – and to create positive ones.

Table 1.3. Relative Weights of Poverty, Economic Development, and Environment Objectives in Operational Partnerships

Partnership	Poverty Reduction	Economic Development	Environmental Services
Global Environment Facility	+	-	+++
Critical Ecosystems Partnership Fund (CEPF)	+	-	+++
BioCarbon Fund	+	-	+++
Program on Forests (PROFOR)	+++	++	++
Forest Carbon Partnership Facility (FCPF)	++	+	+++
Forest Investment Program (FIP)	++	+	+++
Dedicated Grant Mechanism (DGM)	+++	-	++
Growing Forest Partnerships (GFP)	+++	-	+++
Global Partnership on Forest Landscape Restoration (GPFLR)	+++	+	+++
The Forests Dialogue (TFD)	+++	++	++

Sources: Information on partnership websites and expert interviews.

Note: +++ = major focus; ++ = important, but not principal focus; + = included but not important; - = negligible or not applicable.

The Bank is also partnering to support new instruments in the sector. Such instruments would be designed to enhance forest governance and sustainability, including through voluntary Forest Certification; the Regional Forest Law Enforcement and Governance (FLEG) processes; the EU-led Forest Law Enforcement, Governance and Trade (FLEGT) process aimed at establishing Voluntary Partnership Agreements with key timber-exporting countries; establishing legislation in importing countries to prevent illegally obtained timber and timber products from entering into the markets; and voluntary standards and codes of conduct by industry and financing institutions, and others.

The most recent approach, REDD+, seeks to mobilize substantial economic incentives to countries that conserve forests or strengthen and expand the role of forests as carbon pools. This approach depends on global willingness to fund these incentives, and on the construction of new global and local institutions that translate country-level incentives into behavioral changes.

Evaluation Approach and Methods

A decade after the launch of the 2002 Forest Strategy, this evaluation takes stock of the extent to which the Bank Group has been effective in implementing the strategy, specifically by protecting vital local and global environmental services and values; harnessing the potential of forests to reduce poverty; and integrating forests in sustainable economic development.

In light of the continuing global challenge of transforming forests into a key pillar of sustainable development, and the World Bank Group's mandate, the evaluation was guided by the following overarching question:

In what manner and how effectively has the World Bank Group supported member countries and the private sector in balancing competing demands on their forest resources and managing them for sustainable development? And, what can we learn from these past experiences to help guide forest-related interventions in the future?

The evaluation is based on a review of 289 World Bank projects, 56 IFC investments, 44 advisory service operations, and 3 MIGA guarantees. The evaluation team conducted a portfolio review, and then used all project-related supervision materials relevant to that portfolio. This was supplemented by extensive interviews with stakeholders and site visits. The team also conducted rapid participatory assessments, focus groups, and beneficiary interviews in Brazil, Chile, China, the Democratic Republic of Congo, India, Indonesia, Lao People's Democratic Republic, Liberia, Mexico, Peru, the Russian Federation, South Sudan, Uruguay, and a desk review of small island states. A literature review was conducted to complement and inform the desk and field studies that included IEG's 2002 Forest Evaluation and the World Bank's Mid-Term Review.

The criteria used to select the study countries included: (i) the weight of the combined forest sector portfolio in the World Bank and IFC portfolios; (ii) regional representation and coverage of countries with large intact swaths of remaining natural forests; (iii) opportunities for learning from forest sector interventions implemented in line with the 2002 Forest Strategy, including pilot projects, innovative project designs, or project failure; and (iv) synergies with other ongoing work programs, such as IEG's evaluation of IFC's investment and advisory projects, IEG's country program evaluations, and other relevant thematic evaluations.

The evaluation took into account all forest types. The following forest types are found in the countries visited for field assessments: temperate, tropical moist and dry forests, and boreal. For IFC's Forest Product Sector value chain, the role of

natural forests, production forests and plantation forests were analyzed (see also annex D). The interventions covered in the report are not specific to any one forest type, with the exception of legal and regulatory reforms of industrial timber concession regimes, which were implemented by the World Bank predominantly in tropical moist forests.

The evaluation also employed a communications outreach approach designed to connect with actors, practitioners, and interest groups around the world using social media channels. This approach was intended to make the evaluative process transparent and to engage stakeholders through the sharing of knowledge, experiences, and insights (see appendix C). It was not intended to gather evidence for evaluative purposes.

Structure of the Report

The evaluation is structured as follows: This chapter presents an overview of global forest trends and describes how the World Bank, IFC, and MIGA have responded. Chapter 2 presents the results of the World Bank's support for the implementation of the 2002 Forest Strategy. Chapter 3 presents the results of IFC and MIGA's implementation of the 2002 Forest Strategy, and IFC's updates. Chapter 4 reviews the evolution of the World Bank Group's global forest partnerships and assesses how these partnerships have helped to fulfill its forest strategy goals. It also assesses institutional collaboration. Finally, Chapter 5 draws conclusions and makes recommendations for the sector.

2. World Bank Implementation of the 2002 Forest Strategy

Highlights

- ❖ The evolution of Bank projects in forests reflects an increasingly sophisticated understanding of the 2002 Forest Strategy. Participatory Forest Management projects exhibit the most balanced goals compared with other interventions in the sector. Many protected area projects are achieving their conservation goals, but fall short of adequately achieving identified livelihood aims. The design of Sustainable Land Management projects implicitly assumes that conservation measures will yield livelihoods gains. While many projects recorded the area brought under sustainable land management, impacts on soil and water were lacking and productivity gains were therefore rarely attributable to forest-related activities. Despite references to climate, there was a tendency to neglect the role of climate variability.
- ❖ The World Bank has supported various legal and institutional reforms across different forest types, including in tropical moist forests in Brazil where the World Bank provided a significant level of policy lending to strengthen the enabling environment for sustainable forest management and enforcement that has contributed to reduced deforestation, and in Central and West Africa to help reform their industrial timber concession regimes. However, in Central and West Africa, there is little evidence that support for industrial timber concession reform has led to sustainable and inclusive economic development. Projects that support legal and regulatory reforms of industrial timber concession regimes insufficiently analyze the economics of the desired investments supported by these schemes relative to other forest-related land-use models, from both a growth and a livelihoods perspective. It is also not clear from the evidence in Central and West Africa and parts of Asia that industrial timber concessions are being managed in an environmentally sustainable way.
- ❖ The World Bank has supported various legal and institutional reforms in temperate and boreal forests where there was a need to provide entirely new service delivery functions due to restitution and the establishment of protected area systems. Where there was a strong tradition of private forest ownership (Romania and Albania), there has been progress in achieving all three pillar aims. In countries where this tradition did not exist (Russia and Georgia), progress has been more uneven and applied through an industrial concession model that failed to deliver planned poverty reduction aims.
- ❖ In the dry forests and woodlands of the Sahel, the World Bank support for decentralization reforms has augmented the role of resource users in decision-making—a vital element of resource management that holds potential for increasing synergy among the three pillars. But failure to explicitly address asymmetrical power relationships between decentralized bodies and forestry agents is likely to reduce the ability of local groups to actually exercise decision-making power in

forest management, eroding the potential of achieving the pillar aims.

As noted in the previous chapter, the World Bank approved 289 forest sector-related projects between July 2002 and June 2011 (FY03–FY11) in 75 countries (Table 2.1) valued at US\$2.6 billion. Sixty-six percent of the projects were in Africa (36 percent) and the Latin America and the Caribbean (30 percent) regions, 11 and 12 percent respectively in Eastern and Central Asia and East Asia and the Pacific, and only 6 percent in South Asia, and 3 percent in the Middle East and North Africa region (other lending was regional and global).

Table 2.1. World Bank Forest-Related Projects by Region (FY03–FY11)

Region	Projects	
	Number	In Percentage Terms
AFR	105	36
EAP	35	12
ECA	34	12
LAC	85	29
MNA	8	3
SAR	16	6
Other	6	2
Total	289	100%

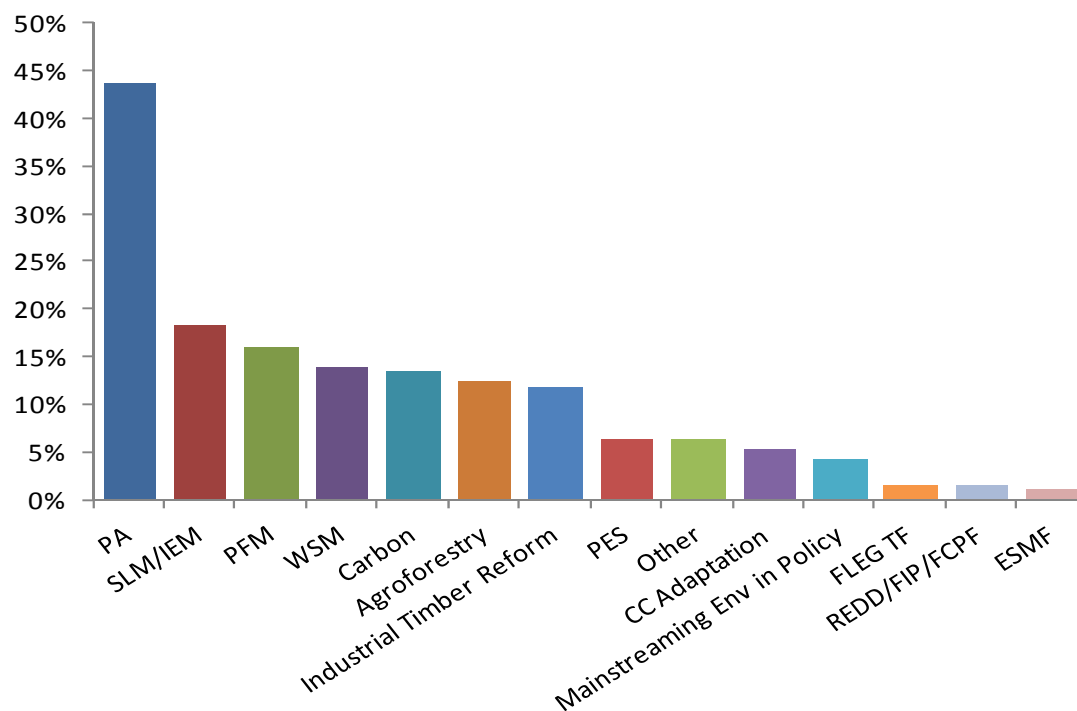
Source: IEG.

Notes: AFR=Africa; EAP= East Asia and the Pacific; ECA= Europe and Central Asia; LAC= Latin America and the Caribbean; MNA= Middle East and North Africa; SAR= South Asia.

For the purpose of understanding how the World Bank identified potential synergies and negotiated attendant trade-offs at the project level, this review identified and evaluated a broad spectrum of interventions, with an emphasis on the most important commonly reoccurring interventions referred to in the 2002 Forest Strategy (see Figure 2.1). These included support for: (i) Protected Areas; (ii) Payments for Environment Services; (iii) Sustainable Land and Watershed Management; (iv) Participatory Forest Management; (v) Key legal and institutional reforms across three different forest types in tropical moist forests – in Brazil to support the enabling environment and enforcement regimes and in Central and West Africa to help reform the industrial timber concession regimes, in temperate and boreal forests where the Bank has provided institutional and policy support for countries in transition; in the dry forests and woodlands of the Sahel where support for decentralized policy reforms is intricately linked to forest rights, equity, access and sustainable management; and for (vi) carbon-financed activities (the Bio-Carbon Fund and the Forest Carbon Partnership Facility).

Cross-cutting issues were also considered throughout the review, including forest governance, climate change, capacity building, and gender.

Figure 2.1. Key Activities in World Bank Forest Projects, FY03–11 (n = 289)



Source: IEG.

Notes: CC = Climate Change; ESMF = Environment and Social Management Frameworks; PA = Protected Area; PES = Payment for Environmental Services; PFM = Participatory Forest Management; REDD/FIP/FCPF = Reduced Emissions from Deforestation and Degradation, the Forest Investment Program, the Forest Carbon Partnership Facility; SLM/IEM = Sustainable Land Management/Integrated Ecosystem Management; TF = Trust Fund; WSM = Watershed Management;

Protected Areas

The aim of creating or expanding a protected area is to support conservation of habitats deemed to harbor critical natural, ecological, and or cultural values. Over the past two decades, the protected area concept has evolved to incorporate a more advanced understanding of human interaction and livelihoods. Most notable is the work of the late Nobel Prize winner Elinor Ostrom, who posited that communities can and will impose substantial costs on themselves to sustainably manage a common resource if: (i) the expected benefits of managing a resource are greater than the cost of investing in the rules to govern those benefits, (ii) loss of short-term economic gains are offset, and (iii) the potential of cheating is eliminated (Ostrom

2009). In Latin America especially, forests have undergone a significant process of recognition and transference of tenure rights to local communities or individuals (Monterroso and Barry 2012). Forty-three percent of the World Bank forest sector projects included support for protected areas, mainly concentrated in Africa and Latin America.

PROTECTED AREAS HAVE CONTRIBUTED TO FOREST CONSERVATION GOALS, BUT EVIDENCE ON BIODIVERSITY CONSERVATION IS LACKING

Protected area projects have achieved their institutional objectives, but evidence related to biodiversity conservation is lacking in half of the portfolio that had objectives related to global biodiversity. Seventy-two percent of the projects in the protected areas portfolio satisfactorily met their capacity building, institutional, and regulatory aims. However, data related to the protection of critical flora and fauna at the site level—including indices of key species, habitat conservation as measured by avoided or reduced rates of deforestation, and similar measures—was lacking.

The GEF launched a Management Effectiveness Tracking Tool to help systematize and collate data on protected areas across its implementing agencies (of which the World Bank is one). To date, however, even though the GEF Secretariat requires tracking reports at inception, midterm, and completion for its projects, compliance with the latter two requirements has been incomplete, and the World Bank itself does not systematically collect and assess this data. The latest overall evaluation of the GEF (GEF Evaluation Office 2010) recognized the limitation of the tool and called for its reinforcement by including indicators for progress toward outcomes and impact, and integrating these systems into the overall results-based management system of the fifth replenishment of the GEF.

Nevertheless, in response to the continued pressure and high rates of deforestation in South America, evidence suggests that the World Bank has been strategic in aligning its policy advice, lending, and grant-making instruments around the threatened Amazon frontier. About 30 percent of the world's remaining tropical moist forests and about half of the world's species are in the Amazon. By directing 20 percent of its forest-related lending (including grants) to Brazil—including \$1.8 billion in development policy lending (to the environment sector, which includes \$299 million for forests), the \$463 million Pilot Program for the Conservation of the Brazilian Rain Forest (PPG-7), and the GEF-financed \$85 million Amazon Region Protected Area Program, the World Bank has helped Brazil put policies in place and strengthen the enabling environment to significantly reduce its rates of deforestation. World Bank-supported programs have helped Brazil put about 24 million hectares of critical forest area under protection, classify 45.4 million hectares as indigenous lands, and put 2.1 million hectares into community-managed

extractive reserves. Thus, World Bank projects have contributed to reducing deforestation rates in Brazil.

The World Bank has also been strategic in implementing a three-phase programmatic loan – implemented over two decades – to protect biodiversity in Madagascar. The Bank’s Environment Program in Madagascar (I, II, III) has contributed to reducing deforestation in Madagascar’s protected areas at a rate one-fourth to one-half that of outside of the protected areas. Forest loss was slowed to 0.6 percent in protected areas compared with more than 1.6 percent outside the protected areas over the project period. Protected areas in eastern Madagascar showed that in protected highland forests (greater than 800 meters elevation), deforestation rates were a third to a half the rate observed in unprotected control areas, while lowland forests fared less well. Within and in select zones surrounding the protected areas, the project reduced slash-and-burn agriculture, reduced soil erosion, and improved soil fertility. The government of Madagascar tripled the size of the protected area system, although resources and capacity were then – and remain – insufficient to manage the new system.

SUPPORT FOR PROTECTED AREAS IN SMALL ISLAND STATES

Several small island states are also hotspots of global biodiversity where high levels of endemism exist due to years of isolation. By one count, there are over 4,000 species of plants and animals endemic to small island states. With GEF finance, the World Bank has made efforts toward biodiversity conservation (conservation trusts and protected areas) in small island states such as Papua New Guinea, home to one of the last remaining tropical moist forests; Grenada, which has one of the world’s threatened lowland dry forests; and throughout the Caribbean through a regional Organization of Eastern Caribbean States protected areas project. While the Papua New Guinea project was cancelled, a GEF evaluation of the Grenada Dry Forest Biodiversity Conservation Project points to the need for sustained government support for biodiversity conservation, particularly given the opportunities posed by alternative development schemes. The evaluation found that the project was effective in gazettement of the Mount Hartman protected area and Perseverance Sanctuary, and in raising public awareness about the dry forest and its value as a habitat for the Grenada Dove.

FORMALIZATION AND DELIMITATION OF FOREST ACCESS AND USE RIGHTS

The World Bank’s support for the consolidation and protection of large swaths of indigenous and extractive reserves in and around the Brazilian Amazon has demonstrated how the definition and assignment of forest land tenure, access, and expanded use rights can bolster communities’ capacity and will to protect the

integrity of natural forests. This is illustrated by the experience with the Indigenous Reserves and Extractive Reserves projects in the PPG-7 Portfolio, and the Amazon Region Protected Areas Project, where the demarcation of indigenous territories and extractive reserves, in conjunction with the assignment of forest use rights to these communities, has strengthened their sense of ownership. These communities have devoted their own resources to the defense of their forest from external intrusions as well as toward the restoration of deforested and degraded areas, with only limited support from the national government.

When devolving forest management authority, attention also needs to be paid to ensuring that there are checks and balances at the local level. In the Bank's protected area portfolio, governance is often viewed as an intra- or inter-ministerial issue with outreach to communities described as "participatory," but with little evident recognition of the large differences in interest and power within local communities. World Bank-supported participatory or community forest management projects display a more sophisticated view of governance issues, but focus largely on state-local relations with measures to reduce government corruption, eliminate perverse regulations, and decentralize management authority presented as solutions.

In the dry woodlands of the Sahel, multiple claims exist for use of the same land, with flexible systems of access often allowing the existence of multiple livelihood strategies in the same area (for example, overlap between cropping systems and pastoralism). Formalization of use rights is likely to lead to the loss of access for secondary use with important impacts on the livelihoods of marginal groups, including pastoralists and women (Benjaminsen 1997; Bassett 2007; Agrawal 2001). In protected areas and buffer zones, stricter delimitation and enforcement of acceptable resource use often has negative impacts on local livelihoods dependent on woodlands for nontimber forest products, agricultural fallows, or grazing; this has significant potential to create conflict between reserve managers and the local population. In some cases, the World Bank's support for sectors outside of the forest sector (such as agriculture and transport) may be putting pressure on the estates that the Bank's forest-related projects are trying to protect (Box 2.1).

Box 2.1. Enhanced Intersectoral Linkages in World Bank Projects are Needed to Support Conservation

The *Benin Protected Area Projects* are threatened by the expansion of croplands. Cotton production, which the World Bank supports through Benin's *Poverty Reduction Support Credit*, is a principal source of pressure on the country's protected area (Brottem 2011). Rather than working at cross-purposes through its economic development and environment programs, the World Bank could use its position to support vigorously conservation

agriculture within established buffer zones, which would address both the local need for cultivable land and biodiversity concerns.

At the same time, important synergistic activities are ignored. For example, livestock husbandry is not addressed in the Benin protected areas, where livestock is also an important livelihood activity and park ranger–herder conflicts are rampant (Toutain and others 2004; Turner 1999). Livestock-oriented measures have been carried out in the past around these protected areas, but the absence of livestock in the current project suggests that herders and livestock production are still marginalized within the protected area management structure. This has potentially negative implications for the long-term prospects of the conservation areas and represents a second area where intersectoral synergy would be beneficial.

The *Public Finance Development Policy Operation* in Senegal is a good example of a project that seriously considered intersectoral linkages. Its focus was on the restructuring of macroeconomic policy through tightening of budget execution and increased transparency. It identified trade-offs with other development priorities, including decentralization and forestry. With respect to the forestry sector, it sought to mitigate increased pressure on forest resources after a subsidy on butane was eliminated. The tonnage of allotted charcoal quotas was to be gradually reduced and ultimately eliminated with the hopes of moving to sustainable production in community-managed forests. The proposed activities to address these impacts were important, but ultimately insufficient to counter the environmental impacts of increased demand for forest products.

Sources: World Bank Project Appraisal Documents, Implementation Completion Reports, Implementation Completion and Results Reports.

THE LINK BETWEEN COMMUNITY PARTICIPATION – ENVIRONMENT – AND POVERTY IN PROTECTED AREA PROJECTS

The level of community participation in the management of a protected area matters for both environmental outcomes and sustainability: protected areas that permit sustainable forest use have been shown to be more effectively conserved than strictly protected ones. This finding was borne out in a recent IEG study that used global satellite data on forest fires as an indicator of deforestation to assess all officially recognized tropical forest protected areas, many of which have been supported by the World Bank. The study compared the fate of forest plots inside protected areas with similar but unprotected areas. The analysis showed that while strictly-protected areas are effective, areas that permitted sustainable forest use were even more effective. Indigenous areas (which are only officially designated in Latin America) were by far the most effective, saving 16 percent of the forest over an eight-year period, compared to control areas (Chomitz and Nelson 2009).

Yet too few of the World Bank protected area projects have achieved this synergistic effect. The protected area and biodiversity conservation projects supported by the

Bank frame threats as largely due to unspecified human demand for resources with solutions generally seen as increased enforcement of existing protected area boundaries, establishment of new reserves, and the development of alternative livelihoods to reduce outside pressure. The siloed nature of many of these project activities is reflected in the way that poverty reduction activities of these projects (for example, grants for micro-projects) are equated with rewards to local people for staying out of reserve areas – a policy construed as a synergy – without addressing the root causes of anthropogenic pressures on conservation reserves areas, nor providing communities with the recognized legal authority and organizational capacity to address them.

Even so, the alternative livelihood schemes embedded in the design of protected area projects did not achieve their intended objectives. Seventy-five percent of the closed protected area projects included an alternative livelihood program for communities that live in and around the targeted site. Yet just 2 out of 37 closed protected areas projects achieved their intended livelihood aims. The lack of meaningful integration of communities into integrated conservation management systems is one reason why sustainability of these systems is lacking (a lack of recurrent finance and other land-use pressures also threatened sustainability). Sustainability of the environmental outcomes in three-quarters of the Bank-supported projects was found to be at risk.

Livelihoods, or poverty, can also be exacerbated by limiting or restricting communities' access to forests through the creation or expansion of a park or a protected area if due consideration is not given to mitigating the potential loss of access to forest-related assets. Seventy-three percent, or 40 of the 55 protected area projects with available data triggered OP 4.12, yet only two of the closed projects to date have reported on whether the potential adverse impacts on livelihoods (forest-related assets, or access to assets and services), have been mitigated. Furthermore, attention to the effects on pastoral livelihoods is often lacking in Africa.

INTEGRATION OF CLIMATE CHANGE CONSIDERATION IN PROTECTED AREA PROJECTS

Climate change can transform ecosystems in many ways, threatening their survival as well as that of many temperature-sensitive species that depend on them. IEG's Climate Change Evaluation (Phase III) – *Adapting to Climate Change: Assessing World Bank Group Experience* (2012) found that of the 24 biodiversity and protected area projects approved between 2009 and 2011, only 8 had considered the sensitivity of the project to climate change. Half of these explicitly supported species migration through biodiversity corridors, while the other half focused on reducing non-climate threats to support their climate resilience. Appraisals for 6 projects describe the future threats from climate change in detail. Three projects supported climate

vulnerability assessments and identified mitigation measures. All 8 projects proposed concrete actions to assist in climate change adaptation, including reforestation, creation of buffer zones, and preparation of management plans. In addition, only three projects made provisions to monitor successes and failures of climate change adaptation for biodiversity conservation. A further three projects included monitoring systems that did not address climate change considerations in their design, while the remaining two projects did not implement monitoring systems.

FINANCING FOR PROTECTED AREAS

World Bank–supported protected area projects that had sustainable environmental outcomes either included support for long-term financing or were highly participatory and effective in helping communities develop viable alternative livelihoods. This finding mirrors one of the overriding recommendations of the fourth GEF Operational Performance Review, which found that

...to reach the full potential contribution that GEF projects can make toward global environmental benefits, projects need to be designed and implemented as much as possible to ensure local ownership, continued government support, and ongoing availability of funding after project closure to support the biodiversity strategy's focus on sustainable biodiversity conservation. (GEF 2010).

Conservation trust funds, ecotourism, and payment for environmental service schemes all have been used to enhance the sustainability of protected area systems. The Amazon Region Protected Areas project in Brazil established an endowment fund with the Brazilian Biodiversity Fund (FUNBIO) to meet the recurrent costs of the protected areas created or strengthened through the project. By the time the project closed in 2008, FUNBIO's protected areas fund had been established and capitalized at \$23.4 million, 160 percent of the original target value. By the end of 2010, FUNBIO's protected areas fund had reached \$29.1 million (FUNBIO 2011).

In Ecuador, the National Parks and Biodiversity II Project supported the establishment of a protected areas trust fund with a total endowment of \$13.5 million, the income from which was sufficient to cover fully the recurrent costs of 11 protected areas, equivalent to about 24 percent of the national system of protected areas. However, other funds have been less successful.

The Uganda Protected Areas Management and Sustainable Use Project introduced a Tourism Development Fund Levy to cover the costs of the Uganda Wildlife Authority. However, this fund has not been effectively operationalized – not to the extent that it could cover the costs of the Uganda Wildlife Authority.

Operationalization of the tourism levy was recommended by a recent rapid assessment of the Uganda tourism sector conducted by the Bank.

Payments for Environmental Services

Payments for environmental services (PES) schemes attempt to create financial incentives to protect the environmental values of all ecosystems, although most often it has been applied to forests (primarily to conservation, but also to restoration). PES schemes reward landholders for conserving or restoring forests, which can provide services such as biodiversity, watershed protection, carbon sequestration, and scenic beauty.⁴ The most fundamental aspect of PES—and one of the ways that it differs from other instruments—is that it is based on compliance. While forests can provide many valuable services, many of these services are externalities, so forests tend to be under-supplied. PES seeks to address this problem by paying those who protect or restore forests; ideally, it does so with funds from service users, but sometimes it does so by using public funds.

PES assumes that those who benefit from environmental services should pay for them, with the funds flowing to the service providers. However, specifying whom to pay, and how much, is a major challenge for these programs. The economic logic of the programs requires rewarding landholders according to the services they provide. In addition, the services themselves may be poorly understood and measured, and cost-effectiveness would require targeting payments toward forest holders most likely to be dissuaded from deforestation, with payment levels tied to the expected benefits of conservation. This may conflict with notions of equity: running PES in the most cost-effective manner may conflict with other objectives, such as poverty alleviation. Ranking systems (in Costa Rica and Mexico) have been put in place to reconcile these varying objectives. But there are also possible trade-offs between the effectiveness of particular payment arrangements and the transaction costs of implementing them.

The World Bank first started supporting PES in 2002 through the Ecomarkets project, which supported Costa Rica's pioneering national PES program, launched in the mid-1990s. Since then, the Bank has continued to support a second phase of PES in Costa Rica and extended its knowledge of how to service and enhance this type of scheme through eight additional projects, mainly in Latin America—Brazil, Chile, Colombia, Mexico, Nicaragua, Panama, and South Africa. At the time this review was conducted, three projects with PES components were closed and evaluated, one each in Costa Rica and Mexico and one regional project covering Colombia, Costa Rica, and Nicaragua. While few in number, these projects represent innovative

efforts by the Bank to help leverage and develop alternative financing for conservation. They also hold lessons for contracting and benefit sharing for carbon-related projects and programs and staff working to help governments value and integrate forests and forest-related services into their national accounting.

Although it is hard to assess reduced deforestation attributable to World Bank-supported PES schemes, the evidence suggests that such schemes have had a positive, though limited, effect on deforestation in some countries and that potential exists for higher impacts with better targeting. In Costa Rica, for instance, two studies found that PES schemes reduced deforestation by 10 percent in areas under PES contracts (Sills and others 2009, Tattenbach and others 2009). One of the studies also concluded that PES resulted in a greater increase in net forest cover, suggesting the importance of spillover effects such as enforcement and raised awareness of the value of conservation, or the demonstration effect provided by PES contracts.

Overall, PES had been broadly applied – it has not specifically targeted deforestation pressure – making it hard to assess whether these environmental outcomes would have occurred in the absence of the payment schemes. A study of the first phase of the World Bank’s support for the Costa Rican PES program – which used remote sensing with geographic information system databases to characterize the distribution of payments, and then used econometric analysis to explore the impacts of those payments on deforestation – found that the deforestation rate was not significantly lower in areas that received payments. Further, the success of other conservation policies better explains the current reduction in deforestation rates (Sanchez-Azofeifa and others forthcoming). The study pointed out that PES contracts did not specifically target deforestation pressure since this was not the original purpose of the program, and that the contracts may have been awarded where there was a lack of deforestation pressure. Because landowners chose whether or not to participate, it is possible that lower-profitability lands could have dominated the program, and a large fraction of the payments could have gone to landowners who would have conserved their forest estate regardless of payments, due to low opportunity costs.

The PES approach in Mexico is designed to ensure full forest conservation in the contract area. The traditional PES contract lasts 5 years; each year, forest cover is checked with satellite systems or an on-site supervisor. If the forest cover is not 100 percent maintained, the contract and payments are cancelled. Yet like Costa Rica, PES in Mexico has not historically targeted forests that were at risk of being lost. Econometric analyses of early experience of the World Bank support found that in the first four rounds of the PES program, 52–72 percent of contracts were in forests with little deforestation risk.

Later phases of the PES programs in Costa Rica and Mexico have enhanced their targeting with support from the World Bank. In Mexico, and then in Costa Rica, the efficiency of the PES program has been improved by establishing differentiated payments by forest type and size of landholding and by implementing a targeting scheme to replace the previous first-come, first-served approach to enrolling applicants.

With the exception of the Integrated Silvopastoral Approaches to Management Project, monitoring frameworks have measured participation rates, but fall short of measuring land use behavior and service generation. Evidence from a well-designed and well-executed monitoring system for the Regional Integrated Silvopastoral Ecosystem Management Project, implemented in Colombia, Costa Rica, and Nicaragua, shows a substantial impact on land use change (almost 50 percent of the land of participating households), and corresponding impacts on services. The project was able to demonstrate and measure benefits such as carbon sequestration (20,000 tons), increased biodiversity, improved water quality, reduction in biochemical oxygen demand and turbidity, and an increase in the presence of species indicative of high water quality, soil retention, soil productivity, reduced inorganic fertilizer through nitrogen-fixing legumes, diversification of systems with risk reduction potential, and scenic beauty enhancement. Although the project was small in scale, involving some 12,000 hectares, it achieved its objective of demonstrating the feasibility of the PES approach to support sustainable adjustment in cattle ranching systems.

However, the monitoring frameworks of the PES-supported programs in Costa Rica, Mexico, and South Africa have not allowed for a systematic evaluation of the extent to which participation in the program changed land-use behavior or produced service generation. Such monitoring is difficult because it is hard to establish an appropriate counterfactual, and service levels are highly variable, making it very hard to identify changes in average service delivery. This difficulty applies to all conservation approaches, not just PES.

AN EVOLVING CONSIDERATION OF POVERTY IN PES PROJECTS

Poverty reduction was considered in four of the five closed PES projects in the portfolio. The Regional Integrated Silvopastoral project reached rural poor farmers in Colombia, Costa Rica, and Nicaragua. In Nicaragua, although payment data were not available, participation data show that 66 percent of the users of the PES system were extremely poor. However, in Colombia and Costa Rica, with higher land values due to competing uses, the poorest do not own ranching land. In Costa Rica, the poor have been excluded from some types of PES contracts (reforestation) because land titles are required for entry into the system. This is a legal issue since

the contract requires maintenance of afforested or reforested areas for 15 or 20 years after entry into the contract. In these countries, however, the PES program's selection criteria, particularly size and support ceilings, favored poorer landowners.

In Mexico, because of the legally established collective ownership system, property rights in rural areas are exceptionally clear. In this way, the main obstacle to integrating poor forest-dependent people into the PES scheme is not the lack of land titles, but the lack of property. Whereas the success of Mexico's community forestry program is based to a large extent on its unique community-based land tenure system, the poorest forest-dependent people in Mexico (*avecindados* and *posesionarios*), are people who live in or around communities and *ejidos* but do not have property rights. There could also be forest-dependent people with no clear land tenure (and therefore who could not benefit from the government projects), but it is not a central characteristic of Mexico's rural areas.

Participatory Forest Management

The main assumption that underlies support for Participatory Forest Management (PFM) is that formalizing local people's forest access rights and management responsibilities will enhance their livelihoods and improve the environmental management and sustainability of the associated forest resources. Livelihood enhancement is sought through a variety of channels: income generation can take place through the sale of forest products (timber, nontimber forest products, ecotourism, licenses for wildlife management, or the provision of environmental services) or wages that can be earned from project-generated employment. Surplus income can then be reinvested by communities into development schemes. Even when rural households do not solely rely on forests for their livelihoods, forests are often used as a source of supplemental income and as a safety net in response to shocks.

PFM arrangements also contribute to decentralization efforts that seek to devolve decision making and some level of resource allocation to the local level. PFM offers opportunities to strengthen social capital and increase community voices around resource allocation and decision making that can extend beyond the forest sector. However, PFM interventions to reforest or improve management of forest lands necessarily need to address issues of governance not only between state and local relations, but also within local communities themselves. The promotion of institutions where authority is accountable, checked, and inclusive (of all social groups) should be clear goals for any forest strategy. Moreover, careful attention

should be paid to the largely negative implications of forest management projects creating parallel systems of governance.

PFM interventions are accompanied by a variety of arrangements depending on the context in which the Bank is working – from more restrictive co-management arrangements carried out on government-owned land in India to more autonomous systems in Mexico. All of these interventions reflect an effort by the World Bank to help communities gain greater control over the management – not just the use – of forest land and its resources along the lines of the 2002 Strategy.

The forest portfolio included 32 projects that supported the introduction of or scaling up of collaborative and community forest management (participatory forestry management) so that local people can manage their own resources, freely market forest products, and benefit from security of tenure. These projects were implemented in only 12 countries across all of the World Bank regions. Participatory forestry projects tended to show balanced goals, but with significant trade-offs evident in the formulation and weight assigned to specific outcome indicators in relation to poverty and the environment.

Most indicators of poverty alleviation were less direct than desirable, both for accurately assessing poverty-related project outcomes and for comparison across projects. Of the 18 projects for which specific poverty or livelihood outcomes were available, none constructed any direct measures of poverty, but all of them provided indicators of increased employment, income or diversification of revenue streams.

Some communities in Mexico have successfully organized themselves into community forestry enterprises and inserted their forestry activities in timber or other forest product value chains (Box 2.2). Community forestry enterprises supported by the World Bank's Second Mexico Community Forestry Project employed an estimated 159,930 people. The project led to a 27 percent increase in jobs available relative to a control group, and broadened communities' income-generation options through diversification into nontimber-based enterprises (for example, bottled spring water, pine resin, cultivation of edible mushrooms, medicinal plants, and ecotourism).

The World Bank's support for PFM in Albania increased participating household incomes by an estimated 30 percent annually, and in Honduras household incomes rose by 62 percent. In India, there was increase in income from wage employment and 72 percent of the wage jobs went to the poorest.

Box 2.2. World Bank Support for Mexico's Community Forestry Program Has Generated Welfare Gains for Communities and Improved Forest Management

Mexico's community forestry management is among the most successful programs of its kind. Indigenous and peasant communities in Mexico have legal, collective ownership of about 70 percent of the forest land, which was granted after the 1910 Revolution. However, the rights of communities to form their own logging businesses were only recognized in the 1986 Forestry Law. Previously, the government retained control over forest land resources and granted logging concessions only to the commercial forest industry. Constitutional reforms in 1992 further clarified community forest rights. However, low levels of technical capacity and lack of experience in sustainable forest management was a barrier to entry into forest-related businesses for many communities.

The World Bank's support to Mexico's program incorporated lessons learned from the unsuccessful Forestry Development Project, which attempted to revitalize the forest sector in the northern forest-rich states of Chihuahua and Durango between 1989 and 1993. Lessons included: (i) a need for a more decentralized approach to project preparation, including participation by state governments; (ii) the advisability of starting out with a pilot operation; and (iii) the need to communicate more effectively with nongovernmental organizations who had criticized the Bank for failing to give a more central role to indigenous communities residing in the project area.

The Bank's experience prompted a 1995 study of the Mexican forest sector, which highlighted the importance of supporting community forest management and laid the analytical groundwork for a series of pilot projects. These pilots, implemented between 1997 and 2008, aimed to improve natural resource management and conservation by community forestry resource owners and to increase the range of income-generating options available to community forestry owners. The Bank's pilot, initially operating in one state and now expanded to 12, has been institutionalized in the National Forestry Commission and is now being implemented nationwide. Studies of the Mexico program note that more than 2,300 forest communities harvested forests under government-approved management plans during the 1990s and 2000s.

As a result of the pilot projects, 1,285,000 hectares were placed under community management plans, and 91,000 hectares obtained Forest Stewardship Council (FSC) certification that the areas are being sustainably harvested. Specific livelihood outcomes include a 27 percent increase in jobs available in project communities—relative to control communities—and a 36 percent increase in net value of forest goods and services produced by communities. Income from forest enterprises was successfully used to leverage counterpart funding from state and municipal governments to build and maintain community infrastructure. The projects also diversified income beyond timber, to commercialization of resin, dried mushrooms, and bottled water. The sustainability of project-supported enterprises is strong. Over two-thirds of the projects supported were still operating when assessed by IEG five years after project closure. Support is still needed, however, to enhance community engagement in supply chain development and developing market niches. Overregulation of community forestry also remains an obstacle.

Sources: IEG 2010. World Bank 1995, 2004, 2008, 2012.

While livelihood benefits have been recorded in this portfolio, the World Bank could strengthen its knowledge base with regard to PFM by including baselines, information about targeting, and more directly measuring poverty outcomes in its forest-related projects.

Overregulation or inappropriate regulation of small-scale forest enterprises has inhibited the potential of PFM to reduce poverty. The World Bank has not paid adequate attention to this policy barrier. The literature on PFM documents a number of regulatory and policy barriers that can constrain the emergence and growth of community forestry enterprises (Kaimowitz 2003, Molnar and others 2005, Colchester 2006, Gregersen and Contreras 2010). Forest management laws and regulations in many countries favor large-scale enterprises and discriminate against poor rural communities. In other cases, small-scale forest enterprises face unfair competition from the weak or selective enforcement of regulations.

Barriers to entering into PFM agreements can be created by procedures that are too onerous and costly for communities to overcome on their own. To level the playing field for low-income local producers, discriminatory tax, fee, royalty, and subsidy systems often need to be reformed. Recognizing that there is a need to maintain and support the enforcement of *scientifically* sound environmental regulation, the literature points to many documented cases where forest regulations are justified on “environmental” grounds that have no scientific basis and that may actually encourage unsustainable management (Ribot 1999, Kaimowitz 2003).

While the 2002 Strategy highlights these constraints, there has been little attention paid to this either in the Bank’s project portfolio or in its analytic and advisory activities (AAA). World Bank PFM projects support the enabling environment for PFM, but only go so far. They support the development of an enabling environment for communities to enter into PFM arrangements (for example, by developing or extending legal rights to communities to manage forests or by providing technical or financial assistance). However, they stop short of easing the regulatory and administrative procedures that place a heavy burden on rural poor communities to take advantage of these opportunities.

IEG’s review of the PFM portfolio found that only 3 of the 32 PFM projects addressed the need for simplification of regulatory procedures or otherwise addressed the factors that create an unequal playing field for community forest enterprises. Even in Mexico, despite the well-established program of community forestry supported by the World Bank, the ability of many communities to legally benefit from their forest resources is still constrained by the lengthy and bureaucratic process to obtain approval of forest management plans. This constraint has only been addressed in

World Bank projects in Mexico approved in the past two years.⁵ Since 2002, the World Bank has produced 21 investment climate assessments that cover a variety of sectors, but just 2 refer to regulatory obstacles in the wood processing sector.

Neglect of the informal sector also represents a missed opportunity to reach more of the forest-dependent rural poor while helping to achieve more environmentally sustainable forest management. In some countries, regulations have criminalized rather than regularized the collection or production and sale of timber and nontimber forest products such as charcoal, fuel wood, building poles and planks, and medicinal plants. Heavy fees and fines along the forest product value chain—or regulations that allow for the sale of these products to be conducted by only a licensed few—tax the forest-dependent poor (Ribot 1995, 1998, 2001; Molnar and Khare 2005).

Box 2.3. The Informal Sector in Liberia: Findings from IEG’s Liberia Country Program Evaluation (2012)

The domestic market for timber in Liberia provides opportunities for employment generation and poverty alleviation for rural communities and forest dwellers. The Chainsaw and Timber Union represents more than 600 dues-paying, chainsaw-owning members that collectively employ thousands of Liberians, many of whom are ex-combatants. Although unionized, the practice of pit sawing is environmentally unsound and poses extreme physical risks due to the lack of proper equipment and training. Largely ignored for the past decade, the informal sector has recently begun to receive attention from the international community. A new Voluntary Partnership Agreement between the European Union and Liberia that sets the standards for forest law enforcement, governance, and trade in timber products to the European Union has included the informal sector in Liberia in the deal. In the future, much assistance will be needed to help regularize the sector and bring it under some version of the chain-of-custody scheme that is already in place in the formal concessions.

Source: IEG Liberia Country Program Evaluation 2012.

The countries with the largest informal forestry sectors tend to be low-income countries with weak governance, such as Cameroon, the Central African Republic, the Democratic Republic of Congo, Liberia, and the Republic of Congo. In these countries, the Bank has worked exclusively in officially managed forest estates through industrial concession regimes, conservation areas, and community forest management. However, the Bank did not pay sufficient attention to the remaining informal, or unmanaged, forest space.

Several recent studies have described the extent of the informal sector in Cameroon, which is now thought to involve about the same level of timber production (2.1 million cubic meters) as the formal sector, but employs roughly three times as many people (45,000 versus 15,000). As the logging is illegal (mostly involving chainsaw milling), it has resulted in an extensive network of illicit financial transactions, making regulation an increasingly difficult political proposition. In this way, the Center for International Forestry Research (CIFOR) estimates that the volume of timber produced by the informal sector in Cameroon has increased by a factor of 10 since 1996, roughly the same period when the World Bank focused substantial leverage and funding on measures to reform and expand the export-oriented industrial sector. The challenges and opportunities of engaging the informal sector in relationship to growing demand in domestic and regional markets was also explored in IEG's Country Program Evaluation of Liberia (Box 2.3).

Another key obstacle to PFM's ability to reduce poverty has been the unwillingness of governments to transfer effective authority to communities. This constraint was highlighted in the 2002 Forest Strategy, as well as in the Bank's efforts to use PFM to achieve poverty outcomes in Cameroon, the Democratic Republic of Congo, India, and Liberia. The most entrenched learning with regard to this constraint comes from the Bank's longstanding relationship in supporting Joint Forest Management (JFM) in India – a model under which the government engages with communities to improve forest management on State land. Under the program, local communities are extended conditional access to specific forest products, but control of the program continues to reside with the government's Forest Service (Box 2.4).

Box 2.4. World Bank Experience with Joint and Participatory Forest Management in India

Between 1990 and 2002, the World Bank implemented seven projects in support of India's Joint Forest Management (JFM), which by many accounts has been successful in fostering forest conservation. However, its top-down, nonparticipatory, one-size fits all approach has been deemed unlikely to succeed in addressing long-term forest sustainability and poverty reduction, especially in the poorest states (World Bank 2005).

The model has been criticized for creating rules that neglect existing prudent uses of natural resources, local knowledge, and cultural, particularly tribal, contexts. Focus groups, community surveys, and case studies conducted by the World Bank of forest dwellers in eight villages in Assam and six villages in Jharkhand and in Madhya Pradesh found that the tribal population often has little involvement in JFM meetings and activities and that villagers are unaware of JFM guidelines, rules and regulations, and development work being implemented in their villages.

Interviews also revealed that JFM formation can exacerbate existing social tensions among tribal people, between tribal people and nontribal people, and between JFM and non-JFM

villages. In mixed villages, tribal people fear that the process of restricting access to “outside” users and regulating forest use among a defined group of people will further marginalize them. Suspicion seemed to prevail with regard to sharing information, sharing benefits, and maintaining minutes, records, and accounts (World Bank 2005).

The Bank adjusted its approach in 2002 with the Andhra Pradesh Community Forestry Management Project (2002–2010) by focusing more on forest user groups. This adjustment was due in part to concerns expressed both inside and outside of the Bank that the government of India, particularly the Indian Forest Department, was not seriously committed to devolving rights and responsibilities to forest communities, that the benefits extended to communities were inadequate, and that the interests of the poor – particularly tribal peoples – may have been harmed.

An IEG assessment (2011) of the Andhra Pradesh project found that the new approach yielded results. Beneficiary incomes rose, and tree cover increased. Wage employment created under the project was well targeted: 72 percent of wage jobs went to the poorest and a subset of project households that received compensation for loss of land access (generally, the poorer households) received an income increment of 40 percent relative to project startup. However, the progressive attempt to extend legal titles to the forest users’ groups was not achieved by project close. During project preparation, the government committed to amend the state forest law to give legal status to the forest users’ groups, and an entitlement policy was revised to allow community retention of 100 percent of the benefits from harvesting specific forest products. Yet IEG found that local Forest Department officials ultimately denied the transit permits needed for harvesting on the grounds that villagers could be trusted to only harvest and transport allowed species (bamboo).

The World Bank also contributed analytical sector work, *Unlocking Opportunities for Forest-Dependent People in India* (2006) that analyzed options for strengthening community-based forest management in India, with the purpose of improving livelihoods and reducing poverty. Institutional reforms proposed by the report include providing longer-term, more secure tenure arrangements, giving communities a larger share of revenue from commercial forest products, and strengthening the legal basis for the program – which in many states is based on a mutable executive order rather than legislation. The work served as a platform for dialogue between the Bank and other donors in India, but its long-term impact was limited as dialogue around the report did not lead to a change in the policy stance of either the national or state government.

Source: IEG 2000, 2011. Chomitz 2006, World Bank 2005, 2006.

These limitations have also manifested themselves in the Bank’s support for decentralized forest management in Lao Peoples Democratic Republic (Box 2.5). The Bank has been engaged in the forest sector in Lao PDR with varying degrees over the past two decades.

Box 2.5. Two Decades of Engagement in Support of Decentralized Forest Management in Lao PDR

The World Bank's support for participatory forest management in Lao PDR dates back to the *Forest Management and Conservation Project (FOMACOP)*, approved in 1994. The project, also supported by Finland, piloted a "village forestry" model that introduced the concept of forest co-management – between villagers and state forest agencies – and the idea of shared timber revenues. While village forestry was carried out on state-owned forest lands, the project placed a high premium on village control over all aspects of forest management. Initial government support waned as villagers became more involved in actual timber harvesting and sales. Contrary to the model supported by the Bank – and initially by the government – villagers were not permitted to sell logs freely to maximize benefits. There was also excessive interference in the selection of logging companies, determination of quotas, pricing of logs and harvesting services. The project closed in 2000 with an Unsatisfactory rating.

The Bank then launched a Forest Sector diagnostic – which was highly critical and which subsequently led to an extensive policy dialogue between the Bank, Finland and the government to maintain support for village participation in production forestry. The *Nam Theun II hydropower project*, launched around the same time, afforded the Bank some leverage in this dialogue. The dialogue resulted in the development of a National Forestry Reform, which included the adoption of Participatory Sustainable Forest Management (PSFM) as a central element of Lao PDR's rural development decentralization strategy.

PSFM stipulates that villagers living in, or adjacent to, designated production forests have the right to be involved in forest planning and management. PSFM differs from the FOMACOP model in so far as the latter permits less village control over forestry planning, management, and benefit sharing and use of timber revenues. A system of Production Forest Areas was mapped and its implementation was enshrined in two legal documents specifying the roles and responsibilities of all stakeholders, with a clear breakdown for revenue sharing from timber sales.

This laid the groundwork for the 2003 *Laos Participatory Sustainable Forest Management Project (SUFORD)*, the main instrument for implementing PSFM. Implemented over two phases between 2003 and 2012, it has helped put in place a policy framework conducive to participatory forest management. Prior, the average share of timber revenues accruing to villages was 2-3 percent of gross revenue. Now, villages receive 12 percent of total timber revenues. But this draft decree has not yet been finalized and timber revenue to date – as well as actual village participation – has been limited. A 2008 social assessment found village participation was limited to information sharing. District officials reportedly made most of the decisions, in particular on the use of Village Development Grants, as paperwork requirements were too arduous. The bulk of labor for harvesting continues to be conducted by government-hired contractors.

The project has improved the timber sales system so that better companies are awarded contracts, but the political economy of the sector – and its associated inefficiencies – has stifled progress, especially at the provincial level, where timber sales take place. A more transparent system has been organized for the area under official production through a chain-of-custody system, and there is some emerging demand from Japan and Europe for certified wood. The project has supported Forest Stewardship Council (FSC) certification (82,000 hectares have been labeled as pure and 300,000 as controlled). However this demand only began to materialize during the final year of the project; and financial support will need to be provided to maintain the chain-of-custody system after project close.

Sources: World Bank Project Appraisal Documents, Implementation Status and Rs; IEG interviews; Hodgdon 2007, 2010.

ENVIRONMENTAL SYNERGIES AND TRADE-OFFS

World Bank projects that use PFM have also reported positive environmental outcomes where those outcomes were monitored. The environmental outcomes associated with PFM include reduced deforestation rates, regeneration of degraded forests, reduced soil erosion and incidence of fires, and protection of biodiversity. In India, satellite evidence shows that the Bank-supported community forestry management scheme in Andhra Pradesh has helped to regenerate degraded forest controlled by forest departments (IEG 2011). Deforestation rates in well-managed, World Bank-supported community forests in Mexico have been equal to or lower than those in protected areas with fewer incidents of forest fires and higher levels of biodiversity (Bray and others 2008; Ellis and Porter-Bolland 2008; Duran and Velásquez 2002).

Also, the sustainability of environmental gains achieved with Bank-supported projects with PFM activities in India and Tanzania have been questioned both by IEG and the literature on the grounds that the benefits extended to communities are too limited to serve as sufficient incentives for sustainable forest management (IEG 2008, Blomley and Iddi 2009).

Sustainable Land and Watershed Management

As stated in the 2002 Forest Strategy, much of the integration of forests into comprehensive development frameworks occurs through linkages between forests and broader rural development, grazing policy, and watershed management interventions. Common goals include maintenance of forests; cropland and grazing land productivity; reversal of degradation; mitigation of landslides, floods, erosion, and sedimentation; and maintenance of dry season water flows. Typical interventions include natural or assisted revegetation, construction of terraces,

irrigation, or other physical structures for managing water flows, changes in cropping systems, and promotion of conservation tillage.

During the review period, the Bank approved 48 forest projects that supported: (i) sustainable land management (SLM); (ii) integrated ecosystem management; and (iii) watershed management.

This review found that, with notable exceptions, the watershed management and sustainable land management projects generally focus on technical interventions – soil conservation, bank stabilization, and reforestation – but lack attention to the rights of people to the land or involvement of beneficiaries in the management of these areas once the earthworks and plantings are achieved. In terms of synergies between the three pillars of the World Bank Forest Strategy, projects with a significant emphasis on sustainable land management tend to be designed with the implicit assumption that conservation measures, such as increased soil fertility, rangeland improvements, and enhanced diversity of vegetation, will improve livelihoods.

REPORTING ON SOIL AND WATER IMPACTS IN SUSTAINABLE LAND MANAGEMENT PROJECTS

Many projects provided information on the area brought under sustainable land management, but often did not provide measures of impacts on soil and water. However, soil outcomes were measured in Chad where 40,800 hectares of land were improved under soil management. The Bhutan SLM project reported on measurements in selected micro-watersheds showing a 30 percent reduction in soil loss when compared to traditional practices. Similarly, under the West Kenya Integrated Ecosystem Management project, about 15 of 60 micro-catchments observed a decreased incidence of soil erosion following the construction of soil and water conservation structures. Most other measures used were organizational in nature; for example, six integrated ecosystem schemes were developed in Niger, 650,000 hectares were identified for community management in Senegal, and seven forests were brought in as functional management units in Benin.

LIVELIHOODS AND LAND MANAGEMENT

Given the links between poverty and land degradation, SLM projects would be expected to have strong impacts on poverty, yet poverty- and livelihoods-related data were lacking in most sustainable land and water management projects reviewed. Notable exceptions include: the Rwanda Land Husbandry, Water Harvesting, and Hillside Irrigation Project, which has reported that three years after approval, 74 percent of farmers in the project area were using improved farm methods (versus a target of 90 percent by 2014), leading to a 201 percent increase in the productivity of non-irrigated hillsides. Similarly, the Burundi Agricultural

Rehabilitation and SLM project reports productivity increases of 5 and 36 percent for the main agricultural and livestock products in the project area, resulting in a 26 percent increase in beneficiary net profit – although it remains unclear the extent to which these results can be attributed to the SLM activities and how much to other agricultural production components. Other projects measured social good and service provision, as in Mali's Community Development Project under which 515 social investment projects benefited 383,000 inhabitants. Also, 71 percent of villages were reported to have adequate access to basic social services.

THE ROLE OF CLIMATE VARIABILITY IN SUSTAINABLE LAND MANAGEMENT PROJECTS IN THE DRY FORESTLANDS AND WOODLANDS OF THE SAHEL

A major focus of forest-related projects in the dry forestlands and woodlands of the Sahel is the composition, productivity, and cover of woody vegetation in project target areas. Previous research has shown that these variables are influenced strongly by both climate and human management. Despite references to climate change, there is a tendency to ignore the role of climate variability in contributing to what are seen as degraded areas, as well as shaping the success or failure of revegetation projects.

Sustainable land management projects, particularly in the Sahel region, commonly use the term “desertification,” a problematic term in its common usage because of its conflation of devegetation tied to climatic variability with land degradation caused by human land use (Reynolds and others 2002; Mainguet 1994; Mortimore 1989).⁶ This kind of thinking often leads to a view that vegetative cover or tree establishment is under human control. Therefore, project interventions in revegetation success (or failure) tend to be seen wrongly as solely the result of human management. A more balanced perspective reveals that the recent success of various “greening” projects (for example, Reij and others 2009; Kaboré and Reij 2004; World Resources Institute 2008) has as much to do with climatic conditions as the management and techniques of restoration projects (Brender 2012) – management and techniques that were seen as failures during the 1970s and 1980s.

Key Legal and Institutional Reforms in Support of the Management of Natural Forests

THE NATURE AND GOALS OF LEGAL AND POLICY REFORMS

Although forests differ dramatically across the world, forest reforms in World Bank Group client countries share two broad, interlinked goals. The first goal is to make the ownership and management of forests more equitable and efficient. In both developing and transition countries, the state has typically had legal control of

forests – although individuals and communities may have long-standing ownership claims. However, governments often manage forests poorly, allowing encroachers to seize land and timber, or restricting forest-dwellers' access to resources. Reforms seek to transfer ownership and management rights to communities and individuals and to securely enforce those rights. They also seek to allocate fairly and transparently revenues from the sale of public forest resources.

The second goal is to ensure sustainable forest use and reduce environmental damage. Forest owners, public or private, often find it more profitable to harvest all saleable timber, or to convert the land to agriculture, than to maintain a forest. Yet the decision to “mine” the forest imposes public costs, including greenhouse gas emissions and biodiversity loss. Regulatory reform seeks to restrict deforestation and to prescribe logging practices in order to reduce environmental damage.

PROJECTS SUPPORTING FOREST POLICY FORMULATION OR REFORM

Development policy loans (DPLs) were one of the main instruments for policy reform. IEG identified 37 DPLs with some constituent components involving forest sector reforms in 19 countries. Two were principally concerned with the forest sector (in Cameroon and Gabon, both approved in 2006). The remainder included forests as one of several policy concerns. Total commitments in these projects were \$4 billion, and \$605 million to the forest sector. This is double the number of forest-related development policy operations during FY1992–2001, and double the number of countries involved.

This section includes a review of the various types of support for key legal and institutional reforms across four different forest types, including: (i) tropical moist forests in Brazil where the World Bank provided a significant level of policy lending to strengthen the enabling environment for sustainable forest management and enforcement; and in Central and West Africa where a series of industrial timber concession reforms have been implemented for over a decade; (ii) in temperate and boreal forests where the Bank has provided institutional and policy support for countries in transition; and extensive support for plantation development that has broadened to include policy reforms in China; and (iii) in the dry forests and woodlands of the Sahel where World Bank support for decentralized policy reforms is intricately linked to forest rights, equity, access and sustainable forest management (Table 2.2).

Table 2.2. Policy Issues and Responses in Four Types of Forests

Issues	Tropical Moist	Temperate Forests in Transition Countries	Boreal Forests of China (Coniferous, Deciduous and Broad-leaved)	Dry Forests and Woodlands
Threats to Forests	Ranching, oil palm	Forest fires	-Incentives for engineered forests -Clear cutting old growth forests -Insufficient replanting -Low survival rates	Soy (Brazil); smallholder agriculture; climate change
Logging Pressures	Illegal logging of high-value hardwoods	"Mining" of restituted forests	Poor or narrowly defined land use planning	Charcoal and fuel wood exploitation
Ownership/ Management Issues	Unclear or disputed ownership; restricted access to land and forest products by local residents; nontransparent allocation of concessions; noncompliance with logging regulation.	Restitution of forests nationalized post- World War II (Eastern Europe).	<i>Collectives</i> have rights to 58 percent of total forest area, much of it in plantations and state-owned forests. Enterprises account for the remaining 42 percent, most of which is natural forest.	Lack of tree tenure; overlapping use rights of farmers and pastoralists.
Policy Responses	Concession reform, including independent observers; establishment of protected areas; decentralization of forest management; transfer of ownership; participatory forest management; forest certification	Restitution policies; regulation of and capacity building for private sector ownership; forest fire control policies.	Forest reforms have given individuals and village leaders more control over forest resources and their management (with tree planting requirements); rapid land tenure policy reforms aimed at preventing indiscriminate felling.	Decentralization; establishment of village management committees

Source: IEG.

POLICY REFORMS IN TROPICAL MOIST FORESTS IN BRAZIL: SUPPORTING AN ENABLING ENVIRONMENT TO REDUCE DEFORESTATION IN THE AMAZON

Deforestation in the Brazilian Amazon fell by about 11 percent to 6,238 sq km between August 2010 and July 2011, reaching the lowest ever recorded for the third consecutive year. This constitutes only about one-third of the 21,000 sq km that were deforested in 1988, the year monitoring began (INPE 2011). Importantly, this decline has occurred at the same time that Brazil has experienced impressive rates of economic growth, suggesting a decoupling of economic growth from deforestation.

The gains are partially credited to improved monitoring and enhanced enforcement – led by the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) in cooperation with the Federal Police, the National Security Force, and the Army – and high-level intersectoral cooperation. Although attendant contributing factors are debated, they include macroeconomic trends (the strength of the Brazilian currency), new incentives for utilizing already deforested lands, and increased awareness of the values of ecosystem services.

The World Bank has contributed to these reduced rates of deforestation, *inter alia*, through its development policy lending, by supporting the Brazilian Ministry of Environment's efforts to sponsor forest-related legislation, including the drafting of the Public Forest Management Law, the establishment of the Inter-Ministerial Working Group for the Prevention and Control of Deforestation in the Amazon, and the recognition of legally binding priority areas for conservation and sustainable use – including indigenous and community reserves (see Table 2.3 and section on Protected Areas). Meanwhile, IFC has been piloting efforts at the forest frontier to support sustainable production practices in the Amazon's agricultural landscapes (see chapter 3.)

Table 2.3. Actions and Results of the World Bank's First Programmatic Reform Loan for Environmental Sustainability in Brazil (2004), and the First Programmatic Development Policy Loan for Sustainable Environmental Management (2009)

Actions	Results
Identification of priority areas for conservation, sustainable use, and benefits of the biodiversity of the entire country legally defined.	About 24 million hectares of protected areas and 45.4 million hectares of indigenous lands have been created.
Coordination Committee of the National Forest Program (CONAFLO) created.	CONAFLO has provided a cabinet-level forum for the discussion of forest-related intersectoral coordination issues.
Draft of Public Forest Management Law submitted to the President's Office.	The Public Forest Management Law has provided the legal framework for the issuance of forest concessions (of 154 thousand ha by end-2011).
Interministerial Working Group for the creation of the Plan for the Prevention and Control of the Amazon (PPDCAm) created and Action Plan launched.	PPDCAm can be credited with a substantial role in reducing deforestation in the Amazon.
Formal agreement to establish the National Sustainable Amazon Program (PAS) signed by the President and regional governors; draft PAS prepared.	PAS was launched on May 2008, and is coordinated by the Secretariat of Strategic Affairs, contributing to multisectoral synergies among federal and state agencies. Also, the Macro-Economic Zoning for the Amazon region was developed and formally approved.
Issuance of Resolution 3545 of 2008 that requires the cessation of bank lending to agricultural producers who do not present the necessary environmental permits.	The National Monetary Council issued Resolution 3545 in 2008 that has been recognized as one factor that has helped address the main drivers of deforestation—the expansion of cattle ranching and agriculture.
National Climate Change Action Plan drafted by the Inter-ministerial Committee for Climate Change and submitted for public consultation.	The Action plan became a law and includes bold targets to decrease deforestation rates in the Amazon and Cerrado by 2020.
Brazilian Development Bank (BNDES) prepared and adopted its new Environmental and Social Policy (ESP), and a supplementary resolution on the Structure and Use of Environmental and Social Guidelines (ESG) that makes them mandatory for lending to the sectors they cover; prepared and adopted three sectoral guidelines: soya, forests, and cattle ranching.	To date, the ESP and ESG have been adopted, seven sectoral guidelines have been issued for forests, renewable energy (including hydro), soya, cattle raising, sugarcane and ethanol, charcoal production, solid waste management; an additional five are under preparation. Lines of credit for forest management or plantations have been adjusted to the type of business and to be more attractive to the client. Several concerns have been raised within the non-governmental organization (NGO) community about the insufficient use of Bank leverage to ensure the implementation, not just the issuance, of these guidelines.

Note: The increasing likelihood that the under +2 degrees global warming path is unattainable implies that alongside mitigation, considerable emphasis needs to be placed on adaptation within the sector, for example, through appropriate seed and species selection and silvicultural measures to secure future forest vitality.

Sources: Project Appraisal Documents, Implementation Completion Reports, Implementation Completion and Results Reports.

POLICY REFORMS IN TROPICAL MOIST FORESTS IN AFRICA: WORLD BANK SUPPORT FOR INDUSTRIAL TIMBER CONCESSION REGIMES

Nineteen of the 37 forest-related DPLs approved since 2002 were to (mostly forest-rich) African countries, where the instrument accounted for most of the Bank support to the sector. Export-oriented timber concessions are the dominant forest industry model in many parts of the world, especially in Central and West Africa (and Asia), where the World Bank has supported several concession policy reforms over the past decade. In these countries, the World Bank has been instrumental in helping to advance the rule of law in a sector plagued by patronage, corruption, and extensive rent-seeking.

Across all of the Bank's concession reform projects, it has helped to: (i) put in place, identify, and cancel existing illegal or overlapping concessions; (ii) design public auction systems for concession rights; (iii) introduce legal and regulatory reforms and formulate land or area rental fee and tax policies; and (iv) configure revenue sharing schemes to distribute benefits to communities—including social contracts that obligate concessionaires to enter into a memorandum of understanding with communities (Box 2.6).

The World Bank has also supported third-party monitoring and compliance verification systems, including Independent Forest Monitoring in Cambodia, Cameroon, and more recently in the Democratic Republic of Congo. The Bank also piloted a chain of custody system called *Liberfor* in Liberia that was designed to ensure the traceability of all exported logs.⁷ Experience is showing that the use of third-party monitoring is enhancing information flow, which in turn provides for greater social accountability and demand for increased transparency with regard to contracting, revenues, and rents.

Yet evidence is lacking that the World Bank's support for industrial timber concession reform has led to sustainable and inclusive economic development. As stated in a recent analytical work, "over the past sixty years, there is little evidence that industrial timber production has lifted rural populations out of poverty or contributed in other meaningful and sustainable ways to local and national development" (World Bank 2007).

Box 2.6. World Bank Support for Industrial Timber Concession Policy and Planning Reforms

In **Cameroon**, the World Bank helped to put in place a forest zoning plan that includes some 14 million hectares of forest land allocated for commercial use, protection, and community management. The zoning process allowed the government to determine which of its forests would be maintained under varying management regimes, and which would be converted

to alternative uses. The Bank's support has helped to create a more organized, transparent system of forest management that is far more effective than it was before.

In **Gabon**, the World Bank helped modernize the forest sector through a Natural Resource Management DPL seeking to improve governance, eliminate a state monopoly on the export of timber, build capacity to improve the authorities' ability to monitor forests, and improve the conditions for attracting private capital into sustainable forest management. The percentage of land under sustainable forest management increased from 30 to 87 percent.

In the **Democratic Republic of Congo**, speculative interests moved quickly after the conflict ended to reallocate timber extraction rights. The World Bank helped the transitional government address the heavy legacy of forest mismanagement by supporting two waves of cancellation of illegal and questionable forest logging contracts that led to a reduction of the area where forest exploitation is permitted from 43 million hectares in 2002 to 9.7 million hectares in 2009. The Bank also supported a moratorium on awarding of new concessions and recommended that this moratorium stay in place until satisfactory standards of governance and management were achieved in existing concessions.

In response to rampant illegal logging in **Cambodia** in the 1980s and 1990s, the World Bank helped reform the country's concession regime by supporting a Forestry Administration effort to exercise control over concessionaire preparation of forest management plans. It also helped to strengthen the Forestry Administration's capacity to oversee concession operations to ensure compliance with operational guidelines. In addition, the Bank helped the government tackle forest crime by strengthening the capacity of the Forestry Administration and Ministry of the Environment to monitor illegal logging and to launch effective prevention activities.

The World Bank engaged in **Liberia's** forest sector in 2004, as a member of the multidonor Liberian Forest Initiative, then led by the United States Forest Department and U.S. State Department, and administratively managed by the Food and Agriculture Organization. The focus of the Bank's early assistance in the sector (2004–2006) was to provide support to the transitional government in meeting the requirements necessary to lift the timber sanctions that were put in place in 2003. Sanctions were lifted in June 2006 once regulatory and legal reforms that improved transparency and accountability in the sector were put into place. This was partly due to the policy and technical assistance provided by the World Bank.

In the **Central African Republic**, the World Bank helped support a new forestry law that included a new revenue sharing mechanism that requires disclosure of revenue sharing between the government and the logging communities, and of the amount of local taxes paid by logging operations to logging communities.

Sources: World Bank 2007; and IEG.

Independent forest monitoring has been limited by government and industry perceptions that it has been too tied to international and donor conditionality. A review by the Overseas Development Institute found that while independent monitoring has contributed to increased knowledge and awareness of corruption in the sector, its major weakness has been its failure to enhance the contribution of

forests to economic development in a meaningful way. World Bank support for independent forest monitoring in Cambodia and Cameroon perhaps best demonstrates this finding, where the measure was associated with World Bank and International Monetary Fund dialogue concerning macroeconomic performance and the need to address governance in the forest sector. In both countries there was strong pressure to put some form of verification system in place as a short-term expedient. However, once this role was accepted it became an arena in which competing interests exerted their claims for policy influence (ODI 2004).

The result was that partners like the World Bank gained policy leverage, and momentum grew for forest sector reform. However, the reforms and their potential to enhance the economic promise of forests faded after conditions were lifted. While innovative and responsive to the historic links between timber and conflict in the country, Liberia's chain-of-custody system is costly and requires the rate of extraction to pay for itself. Complementary government investments in public infrastructure—in roads and ports—will be needed to develop the system at a scale that allows the sector to operate in a profitable and sustainable way.

The level of revenue that could be derived from industrial concession regimes has been overestimated both in the Democratic Republic of Congo and Liberia. These estimates conducted by the Bank in the DRC and by the International Monetary Fund and other partners in Liberia have affected the ability to deliver on planned poverty alleviation schemes and sustainable forest management goals. As Liberia emerged from conflict, the Bank and other partners prioritized reintroduction of the country's commercial forest concessions as a way to generate revenues for economic recovery. The 2008 Liberia Poverty Reduction Strategy projected that commercial forest production would provide \$107.6 million in revenues for the 2007–11 period on a timber volume of 3.3 million cubic meters. As of 2011, however, revenues were less than 10 percent of the projection. The inaccuracy in the revenue projections led to a flawed bidding process that awarded concessions to companies without the knowledge, experience, or financial resources to perform on their contracts.

In the Democratic Republic of Congo, while the economic potential of the concessions was initially greatly overstated, revenue projections have since been brought into alignment with the weak fiscal recovery. World Bank support has been redesigned to help the government gradually increase its fiscal recovery rates. However, estimates from the literature suggest that industrial forest concessions in the Congo Basin can make only a modest contribution to overall employment (Ruiz Perez and others 2005).

Experience has shown that the use of development policy and emergency recovery lending has inhibited the Bank's ability to apply rigorous risk assessment and related mitigation measures in its concession portfolio. Engagement in the reform of industrial timber concession regimes is a complex undertaking. Any concession policy that the World Bank supports will have an asset transformation effect—an effect that transforms the value of forests assets and the access that forest-dependent people will have to them. However, development policy operations do not require the same level of risk assessment or mitigation systems as investment operations do under the Bank's safeguard system. The inappropriateness of this choice of instrument—due to the absence of appropriate safeguards that apply under investment lending—was pointed out by the Inspection Panel in the Cambodia and the Democratic Republic of Congo cases, where support for industrial timber concession reform proceeded without adequate attention to customary land and resource access rights of affected forest communities.

Poverty-Related Outcomes: Placing Value on the Non-Timber Values of Forests

World Bank Projects that support legal and regulatory reforms of industrial timber concession regimes insufficiently analyze the economics of the desired investments supported by these schemes relative to other forest-related land-use models, from both a growth and livelihoods perspective. World Bank policy advice and project-level aims that have supported the reform of industrial timber concession regimes have neglected or underestimated the nontimber values and uses of the forests with respect to the livelihoods of forest-dependent people, their sociocultural values, and their sense of security. Except in the Democratic Republic of Congo, the Bank has not systematically analyzed the economic and sociocultural trade-offs associated with this model before implementing its projects, including: the employment potential of small-scale forest enterprises (versus large-scale logging); the potential loss of forest-related incomes (through the loss of nontimber forest products); disruption of food and fuel security; or effects on sociocultural or religious practices and norms (Box 2.7).

The results of a World Bank study on the effects of the forest sector reforms on local communities in Liberia (in Butter Hill, Cape Mount County; Kpayaqueleh, Lofa County; and Dulay, Nimba County) were released in 2010 as part of a Strategic Environment Assessment attached to the Bank's Forest Sector Reform work.⁸ The Rapid Social Assessment of Liberia's forest sector found that food insecurity around the concessions was extremely high, with 94 percent of the people interviewed expressing difficulty in accessing foodstuffs; agricultural productivity was much lower than the national average; and only 0.7 percent of the communities living around the concessions are employed in commercial forestry.

Box 2.7. Forests in Post-Conflict Democratic Republic of Congo: Analysis of a Priority Agenda

In the Democratic Republic of Congo, the World Bank supported a well-received and often cited piece of economic sector work, *Forests in Post-Conflict DRC: Analysis of a Priority Agenda* (2007), which demonstrated that domestic uses of the forest for fuel wood, bush meat, other forest foods, and medicines ranked higher than timber in annual economic value. The total market value of both fuel wood production and bush meat was estimated to be over \$2 billion, while the economic value of watershed protection was considered to be on the order of \$100 million to \$1 billion. By comparison, the total market value of both formal and informal timber was estimated at only \$160 million.

Even if timber production were to increase in the future, the report argues, it was likely to remain modest compared to the value of other forest goods and services. Concluding that there was “an opportunity for developing new forest uses and financing systems beyond the usual models of timber production, parks, agriculture and small-scale harvesting by communities and local enterprises,” the report argued for a turn toward multipurpose land use planning in place of the industrial timber concessions that dominated in the past.

Sources: World Bank 2007, and IEG.

Social Contract Schemes provide a license to operate, but do not substitute for Targeted Poverty Alleviation Schemes for the forest-dependent poor. All of the legal and regulatory reforms that IEG reviewed include some requirement for concessionaires to engage in a social contract with affected community members. The social contract system used in the Congo Basin countries and through the forest reform process in Liberia has established, for the first time, a framework by which communities can begin to express concerns about their land and resource rights and livelihood needs.

However, the legal texts concerning social contracts and the regulations that govern their implementation are vague—they typically do not include standards, quality specifications, or timelines—and implementation is not monitored as part of the forest concession system. Neither are they enforceable. Without a forum to express grievances or lodge complaints, communities often resort to confronting companies directly if they perceive that the contract terms have been violated.

The rules governing social agreements place all responsibility on the private sector entity without identifying the complementary services that national or local governments would need to provide. For example, most social agreements include clauses that request the construction of schools and clinics by logging companies. While the quality of the infrastructure has sometimes been an issue, the more pressing problem is the vagueness of the contracts regarding who will support the teachers and clinicians and provide the textbooks and medicine.

At the same time, communities are often ill informed about their legal rights concerning the social contracts, leading to unrealistic expectations about what timber companies can and should provide. Prior informed consultation clauses have been abrogated and communities have not been provided with legal or technical assistance to assist them with a negotiation process that is always rushed and is sometimes forced.

Evidence is Lacking that Industrial Timber Concessions are Being Managed in an Environmentally Sustainable Way

A common indicator associated with environmental management in World Bank projects that support industrial timber concession reform is the “adoption of a management plan” or “an increased number of hectares of forest under management plans.” IEG has found that this indicator is insufficient to determine whether a concession is being managed in a manner that adequately satisfies agreed environmental rules and guidelines.

Industrial timber forest concessions are designed to grant extractive rights to a vetted concessionaire, who will be held responsible by governments for complying with regulations that are put in place to ensure the sustainable management of the concession (such as maximum allowable cut, the minimum diameter to be cut, and allowable damage when constructing roads). However, experience in Cambodia and in Central and West Africa has shown that governments have either been unable or unwilling to effectively oversee the sustainable management of industrial timber concessions. The lessons emerging from 15 years of engagement in Cameroon and Gabon – where a combination of weak laws and regulations and inadequate oversight and enforcement has resulted in operations that are causing substantial environmental and social harm – point to the need to examine whether forests, particularly tropical moist forests, can be managed sustainably in a concession regime in a weak governance environment.

In Cameroon, for example, the World Bank has included the high proportion of approved management plans (66 percent as of 2009) as one of its major achievements, but a body of independent analysis has shown that approved management plans are not meeting the intended sustainability or social objectives. (Box 2.8). These lessons are important for the current generation of concession reform projects, such as the Forest and Nature Conservation project in the Democratic Republic of Congo, whose only indicator of sustainability is the “number of hectares of forest land that will be placed under sustainable management plans.” The project does not include qualitative indicators linked to

legal criteria that can supply data on sustainable logging practices in the concessions awarded.

Box 2.8. Independent Reviews of Environment and Poverty Impacts of Concessions in Cameroon

Legality/Enforcement: A 2006 study^a supported by the German Organization for Technical Cooperation (GTZ) reviewed 20 approved management plans for compliance with 40 legal and extralegal criteria covering socioeconomic, biodiversity, and sustainability considerations. The study found that none met all legal requirements, less than half met 60 percent or more of the legal criteria, and just two met more than 70 percent. Those criteria frequently unmet by the plans involved regeneration of key harvested species, measures to identify and manage biodiversity, and measures to assess and address socioeconomic impacts.

Sustainable Forest Management: A 2008 study^b by the Center for International Forestry Research (CIFOR) and the Australian National University examined 38 of the 49 management plans approved as of 2007. They concluded that, due to a regulatory loophole and lax interpretation of the spirit of the 1994 forest law, “the government has not yet succeeded in implementing effective minimum sustainability safeguards and that, in 2006, 68 percent of the timber production was still carried out as though no improved management rules were in place. The existence of a number of approved management plans cannot be used a proxy for proof of improved forest management.”

The legal loophole pertains to language in regulations established in 2001 that allow companies too much flexibility in selecting which species it will manage sustainably – so species that are not being harvested are included in management plans while more valuable commercial species are excluded from the logging quotas. The study found that a significant proportion of the most harvested species were being harvested as if no management plan was in place, including endangered or vulnerable species such as assamela (classified as endangered by the International Union for the Conservation of Nature’s Red List of Threatened Species), and sapelli and moabi (both classified as vulnerable on the International Union for Conservation of Nature [IUCN] Red List). This lack of reporting of key commercial, and in some cases endangered tree species, risks leaving the concessions overexploited and invaluable for future commercial investment.

A 2011 study^c by CIRAD (a French agricultural research institute), CIFOR, and the Australian National University looking at FSC-certified concessions in Cameroon found that forest certification has the potential to address certain environmental problems, such as weak normative frameworks or inadequately implemented good regulations that result in the unsustainable use of forests (...). However, both the combined lack of a transparent and uniform national standard to be followed by all certifying bodies and the wanting quality of management plans has reduced the corrective potential of certification by weakening the negotiating power of certifying bodies.

Poverty: A 2009 study^d by the World Resources Institute and CIFOR concluded that between 1999 and 2005: “the Annual Forestry Fee does not appear to have led to a significant improvement in the conditions of life at the village or household level in the forested zone.” The study found that a significant portion of tax revenues from the

concession that were supposed to reach the communities was unaccounted for. The government reduced its budget for poverty reduction over the study period, suggesting that the forest fees may in some cases simply be compensating for these losses. Communities perceived themselves as being poorer than they had been a decade before. Overall, rural poverty in Cameroon has increased from 52 percent in 2001 to 55 percent in 2010.

Sources:

- a. Vandenhaute and Doucet 2006.
- b. Cerutti and others 2008.
- c. Cerutti and others 2011.
- d. Oyono and others 2009.

Emerging Lessons from Forest Concessions in Latin America

Whereas evidence points to an inability to ensure sustainable forest management results via projects that have supported industrial timber concession reforms in fragile and conflict-affected environments in Africa – as well as in countries with weak administrative and law enforcement – there are some promising emerging findings from concessions in the Latin America region. Although the Bank’s assistance has been indirect – in the form of support for general rural development, public policy and land administration – concessions in Guatemala and Bolivia (supported by the Inter-American Development Bank) seem to be yielding some benefits that warrant closer study.

In 1990, the Maya Biosphere Reserve was created in Peten, in the northern third of Guatemala. The reserve covers 2.1 million hectares with three zones: a core protected zone, a multiple use zone, and a buffer zone. The area now has two industrial forest concessions (BAREN and GIBOR), in addition to 12 community concessions, and 4 cooperatives. All concessions, whether granted to communities, cooperatives, or industrial companies, are subject to mandatory certification. Such concessions have reduced the incidence of forest fires, upgraded social infrastructure, and provided alternative livelihoods while ensuring sustainable management of forest resources (Stoian and Rodas 2006).

In Bolivia, the Forestry Law of 1996 considerably improved forest management. Central to the success of the reform seems to have been the incorporation of incentives for long-term sustainable management coupled with a renewed emphasis on forest law enforcement in addition to transparency (for example, through a simple fee structure, reducing opportunities for corruption), and regular controls (Contreras-Hermosilla and Vargas Ríos 2002). Management plans are mandatory and concessions are subject to regular audits by the authorities. Concessions that instead opt for certification are exempted from regular audits.

SUPPORTING SUSTAINABLE FOREST MANAGEMENT OF TEMPERATE AND BOREAL FORESTS: SUPPORT TO COUNTRIES IN TRANSITION

The political and economic reform process in many European and Central Asian transition economies created incentives for changing the way forest institutions conserve and manage forests (World Bank 2005). The demand for institutional reform arose from regional expectations, from national commitments on biodiversity and climate change, and from local demand for increased access to forest services and products, parallel to the land restitution process after transition.

In the transition process, democratization and reform often resulted in the state's loss of productive forest assets, mostly through restitution, but also by the decision to establish protected area networks which limited extractive use...and as an outcome of restitution, [there was a] need to provide entirely new service delivery functions to meet the demands of new private forest owners for forest management skills and to take on protected area management tasks (World Bank 2005).

The World Bank has supported forest sector reforms and institutional strengthening in 14 of its transition country clients, with total forest commitments across these countries valued at \$170 million. (See Table 2.4 for a broad assessment of the types of support that have taken place across ten of the transition countries).

Table 2.4. Summary of Weight Given to Different Dimensions of the Governance Reform Process

Country	Policy and laws	Forest sector organizations		Economic efficiency and incentives	Capacity building	Participation and rights
		Government	Non-government			
Albania	+	++	+++	-	++	+++
Armenia	+++	++	+	+	-	+
Azerbaijan	+	-	-	+	+	+
Bosnia and Herzegovina	++	+++	-	+++	++	+
Georgia	++	++	-	++	-	+
Kazakhstan	+	-	-	+	++	+
Moldova	+	++	-	+	++	+
Romania	++	++	+++	+	++	++
Russia	+	++	-	+++	++	-
Turkey*	+	++	++	+	++	++

Source: World Bank Appraisal, Supervision and Completion Reports, IEG's Implementation Completion Report Reviews.
Notes: +++ = major focus; ++ = important, but not principal focus; + = included but not important; - = negligible or not addressed. * While not a transition country, support for forest management in Turkey is assessed here.

This review found that in countries where there was a strong tradition of private forest ownership (such as Romania and Albania) prior to the post-World War II land nationalization schemes, there has been considerable progress in returning forest land to previous owners, setting up organizational structures for forest management and utilization, advancing sustainable forest management through certification, robust value chain development, and integration to European markets. In Romania, for example, project restructuring in response to changes in the operating context afforded the Bank the opportunity to redirect restitution support to smaller forest owners while simultaneously dropping a component that supplied information to the forest industry, since these activities were rapidly being supplied by an emerging private sector and knowledge gained through integration into the European markets. The World Bank also helped to build capacity, law enforcement, and governance by supporting the development of a Forest Information Management and chain of custody timber tracking systems.

In countries where this tradition did not exist, such as Russia and Georgia, progress has been more uneven, and the industrial concession model used for giving out long-term leases in forest areas has been plagued by controversy. In these countries, the poverty reduction objectives of World Bank projects have mainly been based on an (assumed) “trickle down” effect of the industrial concession model, or through direct employment opportunities as in Kazakhstan.

In Russia, the limitations of the World Bank’s support for decentralized forest policy and sector reform were exposed with the adoption of the new Forest Code – a reform process that the Bank supported through its Sustainable Forestry Pilot Project – but that bore little resemblance to the project’s recommendations. The 2007 Forest Code has been criticized because it vested forest management functions on the lessees (which they frequently fail to implement), abolished the forest guard service (re-established in 2012), decentralized the forest fire fighting responsibility to the regions (which often lack the capacity and resources for firefighting), and did not ensure timely and high quality forest inventory and planning. More substantive progress was made in areas such as pest management, forest fire management, training, and development of forest certification than in the major areas targeted for reform.

In Georgia, most policy, legal, and institutional development objectives supported by the Bank were not achieved (gains were made on the technical side, mainly through the development of a forest inventory). Outcomes across the three Forest Strategy Pillars were negligible – partly due to the lack of progress with institutional development and putting in place a functional system for SFM). In November 2003, the “Rose Revolution” shifted government policies and priorities, and created a

situation in which the project aims were different from those of the government. Despite intensive dialogue, these differences were not successfully reconciled by the time the project closed. In fact, the remaining project credit was cancelled in 2007 due to the passage of a new forest law that did not meet minimum requirements for Bank engagement (transferring forest management responsibilities to the private sector by the auctioning of forest leases without compliance with the principles of sustainable forest management).

Compared to the pre-strategy period, the Bank has expanded its country coverage, adding new clients especially in Central Asia. Where efforts are focused on dislodging vested interests and building support and capacity within key constituencies for sustainable forest management, the key is to stay engaged. In Armenia, the Bank has worked through four phases (Poverty Reduction Support Credits I, II, III, IV) to bring illegal logging to the attention of key decisionmakers and raise public awareness of the issues.

Almost all forests sector-related projects in the region have had complementary GEF financing. Some innovative approaches have been applied toward forest-related issues in a holistic and cross-sectoral manner. Examples include the “microcatchment approach” in Turkey and Albania, and the degraded drylands rehabilitation approaches in Azerbaijan and Kazakhstan (Table 2.5).

Table 2.5. Integration of Landscape-Level Management and Planning in the ECA Forest Portfolio

Albania	Management plans covered both forests and pastures and were based on landscape-based approaches.
Armenia	The PRSC had broad scope over several sectors (industry and trade, central government administration, health, tax policy and administration), but no specific broader land management objectives.
Azerbaijan	Environmental policies and institutions, rural non-farm income generation (small and medium enterprise [SME] support), and biodiversity management were included in the project's scope.
Bosnia and Herzegovina	Land management and administration are included in the project scope, but there are no indications that this actually extended beyond forest management.
Georgia	There is no indication that the project put significant emphasis on these broader issues.
Kazakhstan	The project has put considerable effort in rehabilitation of degraded forest and rangelands under very challenging environmental conditions (dry Aral seabed).
Moldova	Overall, Bank interventions focused on addressing soil erosion and the resultant degradation in agricultural land through reforestation, and a limited expansion of community forestry.
Romania	There is no indication that the project put significant emphasis on these broader issues.
Russia	The project seems to have focused on the forest sector with relatively little, if any, attention to broader land-use or other cross-sectoral issues. This may be due to the importance of the forest sector as such in the Russian economy. Forest fire management and suppression has obviously large cross-sectoral influences in such areas as public safety, health, and infrastructure planning and development.
Turkey	The Anatolia Watershed Management Project was implemented in the context (exact linkage not clear from the material provided) of a broad environmental sector reform DPL, aiming—in part—to harmonize Turkey's environmental legislation, policies and institutional capacities to allow Turkey to comply with the EU Acquis, supported by a broad partnership of countries and institutions.*

Sources: World Bank Project Appraisal Documents, Implementation Completion Reports, Implementation Completion and Results Reports ; IEG.

Note: The only concrete linkage found in the DPL Program Matrix refers to "Improving management of water resources and water quality" under the third pillar "sustainable Environmental Management"—but there may be other indirect linkages. The project itself looked at land management comprehensively, including forest lands, rangelands and agricultural lands, and off-farm income generation activities in the "Microcatchment Plans."

ENHANCING THE MANAGEMENT OF DRY FORESTS AND WOODLANDS BY ENGAGING IN NATIONAL DECENTRALIZATION PROCESSES IN THE SAHEL

The focus on engaging local resource users in decision-making is a vital element of resource management that holds potential for increasing synergy among the three pillars. Increased local participation in environmental management is viewed as a means to eliminate inefficiency and corruption in administration of the forestry sector while enhancing equity in the distribution of economic benefits.

Acknowledging the impact on forest resources by commercial extraction from outside agents, decentralization and co-management of projects attempt to mitigate negative environmental outcomes by transferring control to the local level. Standard participatory processes can increase the engagement of local populations and offer greater incorporation of their perspectives. However, project success can be

diminished as a result of inattention to accountability within communities, the creation of parallel institutional structures, and the ways in which participation operates in practice.

Widespread decentralization reforms have been in progress in the Sahel region for over a decade. Forest project engagement with national decentralization efforts varies. For example, in Chad, Niger, and Burkina Faso, national statutes are integrated into the World Bank project frameworks while elsewhere projects created village-level committees responsible for decision-making over resources (Senegal, Benin). In the latter cases, the “village” approach was chosen under the assumption that it would better incorporate people into decision-making than locally-elected councils, which are prone to the influence of party politics. However, individuals chosen as committee members tended to be the elites in local social hierarchies, effectively reproducing existing power structures within new systems of forest management.⁹

Local accountability is the mechanism through which the local population is included in both decisions and benefits, but no clear mechanisms for the accountability of committees to their constituents were elaborated in project documents. Non-representative committees created at the sub-rural district level often serve administrative and advisory roles, failing both to empower local populations and to respond to local demands (Agrawal and Ribot 1999).

The creation of a parallel institutional structure also undercuts the authority of locally elected bodies due to their exclusion from decisionmaking on use of resources and revenue.¹⁰ Actors deprived of legitimacy in local elections may be able to manipulate project committees as an alternate source of power to channel patronage and punish political opponents. Institutional pluralism is often considered a prelude to productive management and participatory development; however, the creation of new centers of authority at the local level can undermine democratization, inhibit effective enforcement, and create the possibility for overexploitation (Bandiasky 2007; Faye 2006; Benjamin 2008; Turner and others 2012).

Across the World Bank forest-related projects in the Sahel, the failure to explicitly address asymmetrical power relationships between decentralized bodies and forestry agents is likely to reduce the ability of local groups to actually exercise decision-making power in forest management. Forestry and other sector officials have a vested interest in maintaining control over decisions about resource use (Poteete and Ribot 2011). In contrast to serving a limited oversight role, requiring Forest Service approval of local management decisions can recentralize decision-making.

Defining minimum ecological standards focuses attention on the measures needed to sustain forest resources while reducing opportunities for recentralization under pressure from forestry technicians controlling the allocation of access rights on a piecemeal basis. Although communities may participate in the development of forest management plans, the most critical decision of whether or not extraction will occur in community forests remains with the Forest Service in most cases. Further, continued community perceptions of having a limited role has led to ineffective enforcement of environmental regulations and illegal extraction (Sustainable and Participatory Energy (PROGEDE) sites in Senegal (Larson and Ribot 2007; Ribot 1999; Faye 2006; Wurster 2010; Djigo 2010).

Difficulties such as these indicate the need for a more substantive conception of participation that goes beyond inclusion in participatory rural appraisal processes. Robust decentralization would give local collectives some privilege concerning their claims to the use and value of forests. The distribution of tax revenue from forest products between the central and local governments is one indicator of the progress toward more substantive local participation. Beyond the responsibility of managing forest resources, allocation of a significant share of forest revenues to local bodies is necessary to provide flexibility for them to pursue their own priorities (Ribot 1999; Larson and Ribot 2007; Poteete and Ribot 2011).

BEYOND PLANTATIONS: SUPPORTING SUSTAINABLE NATURAL FOREST MANAGEMENT REFORMS IN CHINA'S CONIFEROUS AND DECIDUOUS BROADLEAVED FORESTS

Most of China's forests are located in the northeast, the south, and the southwest. In the northeast, most species are conifers and the growth rate is slow owing to the long, harsh winters. In the south and southwest, there are broad-leaf species, mean temperature is higher, and growth is faster.

Although China remains a forest-poor nation – forest area per capita is less than one-quarter the global average – since the late 1970s it has experienced a net gain in forest cover each year. Most of the rise in forest cover has come from an increase in plantations, shelterbelts, and commercial orchards so that while tree plantations have increased, natural and old growth forest areas have declined (Lele 2002).

The projects supported by the World Bank have included large investments in plantation establishment. However, over the past fifteen years, the Bank's China forest program has diversified to include support for innovative forest and nature reserve management systems, village level participation and attention to rural poverty, and environmental services; this was in line with the thrust of the 2002 Forest Strategy. The Bank also conducted policy-oriented sector work. In the past, the Government of China had been reluctant to engage the Bank or other partners

on matters of policy reform; so the analytical and advisory activities marked an important departure from the previous trend of Bank intervention in China. However, these steps in support of natural forest management reforms, while highly relevant, have been tentative and have had relatively less success in the short term (box 2.9).

Box 2.9. A Broadened Forest Sector Relationship with China

China is still, in global terms, a forest-poor nation. The country's rapid economic growth has led to a widening deficit between the domestic demand and supply of timber, paper and other forest products. However, since the late 1970s, China has shifted from net annual losses to net annual gains in forest cover, thanks in particular to the large areas of plantations established. China now strives to balance forest production and forest conservation objectives, and this is reflected in the nature of its partnership with the World Bank.

Having focused initially on helping to finance commercial tree plantations, the Bank has diversified its country assistance strategy over the past decade to embrace the public good-environmental service role of forests, and has taken steps toward a dialogue with the government on tenure reform and the restructuring of inefficient state-owned forest enterprises – policy areas that the government has generally preferred to tackle unilaterally, without consulting development partners. These steps have been tentative and most apparent in the Bank's analytical and advisory work. Lending has continued to strongly and successfully support plantation establishment and expansion, while support for wider natural forest management reforms have been highly relevant, but have been relatively less successful.

The **Sustainable Forestry Development Project** (FY02–10; US\$129 million) was consistent with the government's increasing commitment to conservation and with changes in the Bank's country strategy that emphasized the need not to expand forest interventions beyond plantation establishment. It aimed to “ensure that viable, participatory, and locally managed systems for conservation, management, and sustainable use of forest resources and associated biodiversity were developed and adopted in project sites to promote sustainable development and management of forest resources and protect the natural environment.”

However the financing was reflective of the continued priority that is placed on the plantation sector: a project that blended IBRD/GEF/European Union funds, all of the IBRD funds (or three-quarters of the project's total costs) were absorbed by the plantation component. Hence, targets for plantation establishment were exceeded (they were well sited and well tended, with avoidance of monoculture) and yielded a 20 percent economic rate of return. And if present trends continue, the project will exceed its silvicultural goals.

However, the project only modestly enhanced forest resources management. It was not clear how much the incomes of participating households rose during implementation. And the natural forest management pilots made little contribution to forestry incomes and

employment. With respect to protection of the natural environment, progress was substantial: management of the protected areas was substantially improved.

The Bank's *Analytical and Advisory Services* have targeted wider goals. Based on lessons learned from two technical assistance activities in support of collective forest tenure reform and the estimation of a forest industry supply curve for state-owned forest enterprises in the northeast in China, the World Bank commissioned and produced *China: Forest Policy: Deepening the Transition, Broadening the Relationship* (2010) – a sector report that recommended Bank engagement be organized around three themes: (i) moving away from financing the establishment of commercial plantations; (ii) consolidating the reform of collective forestland tenure; and (iii) restructuring the state forest sector to increase productivity. The work responded to a demand from within the Bank – not from the government – to re-examine its support for forest interventions. It was highly relevant in terms of China's forest needs and involved work with Chinese counterparts, although no government champions were identified to take the recommendations forward. There is a lack of evidence to assess the level of engagement with the parties driving forest sector reform in China.

Sources:

- a. Vandenhoute and Doucet 2006.
- b. Cerutti and others 2008.
- c. Cerutti and others 2011.
- d. Oyono and others 2009.

3. IFC and MIGA's Implementation of the 2002 Forest Strategy

Highlights

- ❖ IFC updated the 2002 Forest Strategy in 2008 and again in 2010, articulating a more comprehensive vision of how IFC would address sustainable forest management along the entire value chain. The updates described IFC's role in developing farm forestry programs, building upstream supply chains, providing livelihood for poor farmers, protecting the environment, and reducing reliance on virgin pulp by fiber recycling and dependence on imports from illegal or unsustainable logging operations.
- ❖ IFC approved 56 projects in the Forest Product Sector during FY03–11 with total investments valued at \$1.5 billion. Investments are designed to support sustainable businesses from plantations upstream to production of furniture, panel and engineered wood products and pulp, paper and board products downstream. The investments have helped companies produce higher value-added products, increase their productivity and production capacity, and foster outgrower markets and job creation for rural poor communities.
- ❖ Compared with industry structure, IFC's investment portfolio is overweight in downstream and underweight in upstream industry segments, with the largest gap in primary production in natural forests and plantations. Although only six (11 percent) investments were direct investments in natural or plantation forests, a total of 26 (46 percent) of IFC's projects included vertically-integrated companies supplying wood from upstream forestry operations. There have been stepped-up efforts by IFC at supporting sustainability along the supply chain, but the record indicates continued challenges in achieving certification and ensuring sustainable forest management. Of the 32 projects that are producing or using wood from natural or plantation forests, 15 have achieved certification as planned, while 7 did not put certification or other verifiable supply chain mechanisms in place; of the remainder, 9 had plans for certification and one did not have information to determine status.
- ❖ Twenty-four projects operated downstream – using market pulp, wastepaper, paper, board, straw or bagasse as feedstock. From the point of view of sustainable forest management, it is important to ensure that in downstream investments the supply chain of wood –based fiber is sustainable. Of the seven investments that used pulp or fluff, only two investments were made in a company with a certified supply chain.
- ❖ Downstream investments are also relevant from the point of view of sustainable forest management if they support alternative, sustainable sources of fiber supply. Ten of IFC's Forest Product Sector investments include support to firms that source fiber from waste and recycled paper (Colombia, Egypt, Kyrgyz Republic, Mexico, Nigeria, and Turkey), and that use agricultural byproducts, like wheat straw, for packaging (Pakistan).

- ❖ IFC's support to farm forestry focuses on smallholder outgrower schemes that offer direct poverty reduction opportunities. Experience from these interventions shows that there is a need to better diagnose and address: (i) the trade-offs farmers face with respect to the use of their land and food security; (ii) the need for clients to deliver targeted and consistent technical assistance to all user groups with varying literacy levels; and (iii) the need to ensure that farmers fully understand the implications of engaging in financial transactions.
- ❖ IFC is pursuing an integrated approach between its advisory services and investment operations. There are useful lessons to be drawn from a decade-long engagement in Latin America.
- ❖ MIGA guaranteed an investment in a pulp and paper mill in Uruguay (in which IFC has also invested) that contributed to a 1 percent increase in Uruguay's annual GDP, and a 9 percent increase in its exports since the mill startup in 2007. It has also influenced environmental and social performance in the rubber sector in Liberia just years after conflict there ceased.

The role envisaged in the 2002 Strategy for IFC and MIGA was to promote catalytic private investments in sustainable timber harvesting and management. The Strategy emphasized the role of small-scale forest product enterprises to help the rural poor successfully engage in processing and trading of wood. It also noted the need for independent monitoring and certification of forest operations to ensure that investments in production forests, or indirect support through financial intermediaries or forest industries, contribute to improved forest management and more sustainable outcomes, including the protection of biodiversity and ecologically and culturally sensitive areas.

The 2002 Strategy also recognized the complementarity of forest conservation and sustainable forest use strategies at the landscape level. Many countries are addressing these strategies by adopting forest land use zoning that allows for a continuum of totally protected areas; multiple-use forests, including harvesting; and production forests with certified harvesting.

Owing to the lack of specific guidance in the 2002 Strategy on how private sector support could make a difference, IFC produced an updated Strategy, the *Forest Sector Dynamics and Strategy* paper, in 2008. The update articulated a vision that IFC would become the preferred long-term partner in the Forest Product Sector (FPS) in emerging markets by responding to: (i) shifts in industry demand and supply; (ii) increased demand for Environmental and Social Standards and; (iii) the foreseeable shortage of sustainably harvested wood. The update also addressed the role of forests in the carbon cycle and made the case that sustainable forest management and farm forestry have the potential to create more jobs compared with unsustainable clear-cutting and low usage of waste.

In 2010, IFC further updated its strategy to articulate a more comprehensive vision as to how it would address sustainable forest management along the full spectrum of the forest value chain—from upstream investments in plantations and support for sustainable harvesting of natural forests to support for downstream processing.¹¹ This paper, “Sustainable Forestry” (2010), emphasized IFC’s role in developing farm forestry programs, building upstream supply chains, providing poor farmers with livelihoods, protecting the environment, and reducing reliance on virgin pulp by fiber recycling and dependence on imports from illegal or unsustainable logging operations. In effect, it made a case for moving upstream.

Developed in consultation with and participation of the Bank’s Agriculture and Rural Development network, IFC’s 2010 Forest Strategy Update provides a private sector response to the three pillars of the 2002 Forest Strategy:

- **Harnessing the potential of forests to reduce poverty:** Plantation investments are expected to generate significant employment and incomes in rural areas.
- **Integrating forests in sustainable economic development:** IFC involvement is expected to demonstrate the commercial viability of sustainable forestry projects and catalyze private funding.
- **Protecting vital local and global environmental service values:** IFC’s investment in forests is expected to raise Environment and Social Standards and establish world-class industry benchmarks.

IFC approved 56 projects in the Forest Product Sector (FPS) from FY02–11, with total investments valued at \$1.5 billion. In line with the updated IFC strategy, these investments are designed to support sustainable businesses along the forest product value chain, from plantations to production of furniture and panel products to paper products and construction products (IFC 2012). The portfolio has been dominated by downstream investments. Compared to industry structure, the largest gap is in services in primary production, or upstream plantation development and management of natural forests (Table 3.1).

Table 3.1. IFC's Forest Products Sector Portfolio (2002–2011) versus the Global Industry (2011)

Value chain segment	Percentage of global forest products sector revenues along the value chain (2011)	Percentage of IFC forest products sector investments along the value chain (by number of projects, FY03–FY11)	Percentage of IFC forest products sector investments along the value chain (by volume, FY03–FY11)	Percentage of IFC forest products sector area along the value chain (by millions of hectares, FY03–FY11)
Primary production (upstream plantation development and management of natural forests)	20	11	4	2
Mechanical wood production	24	32	34	51
Processing	14	5	8	25
Paper and board production	42	52	54	22
Total	\$844 billion	56	\$1.5 billion	2.349 millions of hectares

Sources: IEG, IFC, Food and Agriculture Organization (adapted by Indufor).

Notes: For the Global Forest Products Sector, data is shown for revenues (since investment data isn't available). The broad distribution of revenues and investments across the value chain is likely to be similar.

Contributions of IFC Investment Operations to Sustainable Economic Development

UPSTREAM AND INTEGRATED FOREST PRODUCT SECTOR INVESTMENTS

Of the 56 Forest Product Sector projects, 32 had more direct links to forests upstream. The main purpose of these investments has been to provide financing to expand or create new capacity for downstream processing industries that purchase wood from their own or third-party plantation and production forests. These 32 projects included 26 investments in often vertically-integrated companies in mechanical and wood processing and wood processing industries, pulp and paper board production that uses wood sourced from plantations, concessions, or open markets, as well as 6 investments in primary production (plantations and natural forests). It is important to note that the vertically-integrated companies that sourced wood from their own concessions or third-party plantations accounted for 98 percent of the total area of the portfolio, with significant influence on sustainable forest management.

IFC uses an Economic Sustainability (ES) rating – that incorporates the Economic Rate of Return (ERR) or the Economic Return on Invested Capital (EROIC) of its

investments. The indicator seeks to measure quantifiable net economic benefits to society, as well as to try to capture significant non-quantifiable benefits. Sixteen of these 32 Forest Sector Projects that are operationally mature (that is, approved between FY02 and FY06), were self-evaluated and independently validated by IEG. Of these 16 projects, 11 have achieved Satisfactory or better ES ratings (69 percent success rate), indicating that their contribution to economic development has been positive. This success rate is in line with IFC's average.

Public sector support—in the form of public policies and tax incentives—is needed to enable a favorable business climate for inclusive forest sector growth. Yet there were very few examples in the portfolio of investments that have benefitted from World Bank Group cooperation.

In this context, Uruguay stands out as a good example of this type of cooperation. The World Bank (through IBRD) supported key policy reforms in Uruguay in the 1990s. Later, building on increased forest plantation area, a single large-scale pulp mill investment that received guarantees from MIGA and finance from IFC contributed to a 1 percent increase in Uruguay's GDP and a 9 percent increase in its exports since the mill startup in 2007 (box 3.1). Yet these investments will undoubtedly be more challenging if and when IFC supports similar investments in less-developed countries, and even more so as it moves into the natural forest space.

Box 3.1. World Bank Group Cooperation in Uruguay Forest Sector Results in Significant Economic Development

Background. Forest land area in Uruguay is quite small, only 1.74 million hectares, or about 10 percent of land area. Natural forests constitute 4 percent of the land area, and are mostly protected. The 1968 and 1987 forest laws promoted tax deductions, plantations for forestry integration with other agricultural activities, maximizing land production, development of a new industrial sector, generation of employment in rural areas, and generation and creation of a sustainable energy source. The plantation area rapidly increased, on average 4.4 percent annually in the 1990s and 2.1 percent in the 2000s. A total of 64 percent of the forest area is designated for production with mainly eucalyptus (70 percent) and pine (28 percent) planted in regions that have very favorable precipitation and topography with lowlands and undulating hills.

Over the course of the last two decades, Uruguay has developed its forest sector from a marginal business into a major pillar of its economy. As a result of good public policies, tax incentives and other types of support to private investments to foster sustainable forest management and forest sector growth, jobs in forestry activities tripled from 4,000 to 12,000 (between 2004 and 2008). Forest plantations have more than doubled the jobs per hectare compared with previous land use for cattle ranching.

The Role of the World Bank Group. The World Bank Group played an important role in supporting the development of the forest sector in Uruguay. The World Bank (through IBRD) supported key policy reforms in the 1990s. Later, building on increased forest plantation area, IFC and MIGA provided an investment and a guarantee in a single large-scale pulp mill investment. This key investment contributed to a one percent increase in Uruguay's GDP, and 9 percent increase in its exports since the mill startup in 2007.

Both IFC's and MIGA's Environmental Due Diligence identified Sustainable Forest Management and FSC certification and pollution control as key environmental and social aspects in the project. The mill was built near the town of Fray Bentos on the shore of the Uruguay River opposite Argentina. Public concerns in Argentina over air and water pollution created a multi-year social and political dispute, including a blockade of an adjacent bridge between the two countries. An IEG site visit in 2011 to the mill and the town of Gualaguaychú in Argentina (about 40 km from the mill) and a forest farm client near Paysandu, revealed that environmental performance was at a high standard with regard to the control of air emissions and effluents and that the plantations were being soundly managed. The plantations were established on degraded pasture land and have positive impacts on carbon sequestration and on prevention of land erosion. As the pulp mill generates 32 MW, excess biomass-derived power is sold to the grid. It replaces fossil fuels, resulting in about 40,000 tons of certified carbon dioxide emission reductions annually.

Thus, the World Bank Group, through its policy advice, investments and guarantee, contributed to the development of the forestry sector in general, and to Uruguay's economic development in particular. It also supported attendant job creation, prevention of land erosion, production of biomass-derived power, and a reduction in carbon emissions.

Source: IEG.

IFC's Private Sector Development (PSD) indicator measures the extent to which client companies are behaving as corporate role models and whether IFC support is helping to extend benefits beyond the gains enjoyed by the project company. An analysis of the PSD rating of 32 mature projects found that 26 were rated satisfactory or excellent (81 percent), suggesting that they catalyzed investments and job creation opportunities beyond the project company. For example, in China, IEG found that IFC's investment in a wood processing company had a significant demonstration effect, attracting other private sector investments, including foreign investments into one of China's poorest regions. These investments helped companies to produce higher value-added products, increase their productivity and production capacity, thereby fostering outgrower markets and job creation for rural poor communities.

In China, the government supports forest industries through its national Five-Year Plans, tax reduction for wood product exports, and with subsidized long-term loans to its banks. Government reforms are now permitting private investments in its

collective and state forest areas. This favorable business environment has allowed IFC to support seven investments valued at \$248 billion in mechanical and chemical wood-processing and in support of the development of plantations. The forest industry in China has grown by 10 percent over the past 30 years with total exports in 2010 valued at \$35 billion, or 8 percent of global exports. As previously noted, the growth of plantations in China and their contribution to economic development has also been accompanied by clear cutting and insufficient replanting of natural forests, resulting in a loss of forest diversity that supports critical environmental services.

In India, land legislation put in place to promote equity has stymied growth in the sector by not allowing more productive use of available fallow and other degraded lands. In one IFC-supported project, a company was unable to meet its fiber sourcing requirements through its Farm Forestry program. It bought a plantation in Malaysia, eliminating potential for livelihood enhancement for Indian farmers.

The Uruguay example demonstrates the potential effects that investments in vertically-integrated companies with upstream operations in the sector can have on growth and job creation. However, although Uruguay and China have made rapid progress, none of the countries examined in this evaluation had elevated forest sector development to a strong cluster level with private and public sector cooperation that would include forest industries and research and development in universities and research institutions. IFC has a stated goal of moving its support for the forest sector upstream: that is, to do more stand-alone and integrated plantations and natural forest investments. As IFC moves forward with this aim in mind, there are lessons it can learn from its past upstream investments and with regard to integrated producers.

Understanding Land Tenure and Land Use Regimes is Critical for Successful Forest-Related Investments

One lesson that has arisen out of the upstream portfolio is that companies – with IFC assistance – need to understand fully the status of the formal and informal land tenure regimes and associated potential for disputes or conflict that may arise. This includes understanding the presence and concerns of indigenous and forest-dependent communities and the perceived rights that apply.

IFC's investment in a leading pulp producer in Brazil was complicated by competing indigenous land claims that had been unresolved by the government of Brazil at the time of the investment (Box 3.2). The case demonstrates the limitations of integrating forests into economic development where land tenure security is an issue.

Box 3.2. Land and Forest Access Claims in Natural Forests and on Degraded Lands Need to Be Identified and Understood as IFC Moves Upstream

Aracruz (later bought by the company Votorantim, and then renamed Fibria), in which IFC invested in 2004 (and was pre-paid and exited the investment in 2006), is a global leader in pulp, with production capacity exceeding six million tons of pulp and paper produced in seven mills in five Brazilian states.

Aracruz was involved in a long-running dispute with indigenous peoples' groups in the state of Espírito Santo over 18,000 hectares of land, which the company claims it acquired legally in 1967 – but which the Tupiniquim and Guaraní peoples claimed belonged to them. In 1983, the company and FUNAI (the National Indian Foundation) agreed to set aside 2,000 hectares for a reservation. In 1994, FUNAI endorsed their claim, but the Brazilian Ministry of Justice only required the company to relinquish an additional 5,000 hectares. The dispute came to a head in 2005, when members of the indigenous community and activists from the landless movement (Movimento Sem Terra) occupied part of the disputed land, only to be forced out in violent clashes in 2006. Mainly as a result of these developments, the company lost FSC certification in 2006, after IFC's exit.

In 2007, the new Minister of Justice, Tarso Genro, decided in favor of the indigenous peoples, decreeing the entire 18,000 hectares as indigenous land. The decision was formalized by an agreement between the indigenous peoples and the company whereby the company agreed not to contest the ministry's decision before the courts in exchange for the right to remove the eucalyptus already planted on the land, as well as a promise by the indigenous groups not to make further land claims.

At the time of appraisal, the Aracruz investment was deemed by IFC in compliance with Bank Group environment and social policies as well as environmental, health, and safety guidelines; it also included social programs and programs to support indigenous communities. That support was framed by an overall agreement between Aracruz and FUNAI, and included contributions to indigenous social projects, employment and income generation, scholarships, studies to recover local rivers and other areas, cultural projects, and tree farming programs.

Sources: Wilson 2009 and IEG 2012.

In China, land tenure issues, or the failure to effectively mitigate risks involved with land acquisition, also hampered economic development outcomes. IFC's client relied on a broker to prepare contracts with intermediaries who inflated the land price, and eventually the farmers received only a fraction of the rightful land rent. In this case, the reliance on a government agency to speed up the contracting process resulted in insufficient consultation with the farmers and the issuance of illegal contracts. Eventually, the decision to rely on the agency – a decision that was aimed at accelerating the land acquisition process and transferring the contracting liability from IFC's client to the state, resulted in a freezing of the contracting process, a

delay in the anticipated pulp and board mill investment, and reputational damage to the company.

REACHING THE POOR THROUGH OUTGROWER SCHEMES: IFC'S SUPPORT TO FARM FORESTRY IN INDIA

IFC also has a stated goal of maximizing reach to farmers, smallholders, and small and medium enterprises. IFC supported with investment and advisory services India's four leading pulp and paper producers (accounting for 40 percent of the country's production volume). These interventions were linked to farm forestry. They aimed to bring about productivity improvements in plantation operations at the farm-level and to improve the livelihoods of small farmers who planted and harvested pulpwood for the four mills. IFC's support to farm forestry in India was to some extent conditioned by legislation that constrains the Indian mills to only source wood from small-scale farm forests. The support is in line with IFC's strategy for the sector, and opportunities exist for expanding the approach beyond India.

As stated in the 2002 Forest Strategy, tree growing — or farm forestry — is an option for smallholders who have sufficient annual income from other sources, that is, the land that is used for tree growing is not needed for food crop production or for meeting other more basic needs. It is likely to be an attractive option for smallholders only when a market has been secured and adequate technical advice and inputs are made available to make tree crops a more stable source of income than alternative uses of the land. However, as recognized by the 2002 Strategy, farm forestry is unlikely to be feasible for many smaller or extremely poor farming families if market and technical barriers are not adequately addressed — including the probable need for farmers to have title to their land to be eligible for a small loan.

The overarching objective of IFC's support to farm forestry in India, which included four investment operations for \$120 million in IFC financing, was income generation and poverty alleviation through better farm-forestry schemes in poor and remote communities. The small-scale forest farm plantation model has provided additional income for farmers, but a lack of poverty targeting makes the impact on poverty hard to assess. Poverty reduction is also difficult to assess in investments that have contributed to the expansion of wood processing industries since many of the benefits that are associated with an expanded supply of wood, including job creation, occur downstream. The farm forestry investments in India have supplied additional revenue to 40,000 farming families that sold wood to IFC's clients.

Poverty alleviation in farm forestry requires targeting, so that the less educated and least experienced can also benefit — and not be unfairly burdened — by tree planting programs. A recent IEG *Review of IFC's Poverty Focus and Results* that used studies carried out by the Social and Rural Research Institute (New Delhi) in 2010 found

that the package of support given to farmers supported by IFC clients in India initially lacked an understanding of farmers' basic needs; the trade-offs they face; and the technical, political, and financial barriers associated with engaging this group in farm forestry operations.¹² While some farmers' livelihoods improved in comparison to those of farmers in the control villages – these farmers planted saplings on wasteland, which had some source of water/irrigation benefited from the program – three out of five participant farmers said that the program had not met their expectations, and the mismatch was greater for women than for men.

Farmers were not given adequate technical assistance and training. Farmers who had prior knowledge and training in the technical aspects of farm-forestry – and those who took proper care of the tree plantations – benefited from the program. However, the study found that knowledge of requirements and methods of farm-forestry was unevenly distributed across farmers due to infrequent follow-up visits. More than half of the farmers received no formal training. To ensure proper upkeep of young saplings, particularly in the first two years of growth, regular knowledge-sharing sessions are imperative.

Training in financial literacy was also lacking – so much so that some of the participating farmers went into debt for lack of understanding and awareness about banking and the lending arrangements associated with the program. The study found miscommunication between the farmers and the company regarding the loans that were taken by the participating beneficiaries. Interviews revealed that half of the farmers (who reported that they had taken loans) did not know the interest rate due on the loan; the remaining half incorrectly reported the attendant interest rate. Of even greater concern was that while 50 percent of the participant farmers reported having taken loans to invest in farm forestry, the proportion was actually much higher, as many of the farmers were not aware that they had taken a loan. It was also reported that some of the unsuccessful farmers have had to pay off their debt with personal savings. The program also did not adequately assess the livelihood needs of farmers who were not prepared to forgo the use of their land during the long gestation period required under the plantation model.

Partly for these reasons, results have been mixed. One company expanded its program with IFC's involvement to cover nearly 72,500 hectares and 35,000 farmers. It has increased the number of seedlings distributed from 35 million to 95 million a year, which is significantly above projections. To meet the increased demand for seedlings, the company also increased the number of nurseries from 12 to 31, as well as the number of employees for these nurseries. Another company also expanded both the number of farmers with which it works and its total plantation area considerably, but nonetheless missed its targets for sourcing raw materials from

farm forestry. Whereas the proportion of raw materials from farm forestry was supposed to increase from 7 percent in 2003 to 30 percent in 2008, it had instead only reached 8 percent in that time and was expected to reach its target only in 2012.

While it is too early to evaluate, the design of a recent investment in an integrated pulp and paper mill, also in India, demonstrates an innovative approach for engaging smallholders in rural poverty schemes. An IEG mission reviewed the project's financing scheme, which engages 350 households in the planting of eucalyptus, subabul, acacia, and casuarina on land areas averaging 5.3 hectares. Whereas other companies supported by IFC in the past have tended to sell saplings at subsidized prices, guaranteed only a minimum price for timber, and asked the farmers to supply all of the input and harvesting costs, this company has developed a scheme that provides farmers with saplings, machinery, land cultivation, and agrochemicals, and additionally pays farmers for planting, weeding, and harvesting. The contract guarantees an annual lease and a fixed per-ton price to purchase wood after harvesting. IEG visits to three plantation sites found that farmers were satisfied with the agreements they had reached with the company (although an evaluation of the development results of this intervention will be needed after the investment has matured).

DOWNSTREAM FOREST PRODUCT SECTOR INVESTMENTS

The remaining 24 projects operated downstream – using market pulp, wastepaper, paper, board, straw or bagasse as feedstock. From the point of view of sustainable forest management, the development outcomes of investments in downstream processing could be enhanced with greater attention to creating demand for certified supplies.

Firms that source pulp and fluff as raw materials should be expected to provide information on the sustainability (and legality, where applicable) of the fiber supply. An IFC investment in a hygienic products industry in the MENA region is a good practice example of how downstream firms can put in place sustainable supply chain management (Box 3.3). The company sources all of its material from renewable forests as certified by local authorities and through third party verification at supplier locations. However only one of the six IFC-supported companies that sourced pulp and fluff as raw materials requested chain of custody information for the raw materials used in its product lines.

Box 3.3. Sustainable Supply Chain Management in an Hygienic Products Industry in MENA

IFC investments in a family-owned trading house in the MENA region have supported integrated sustainable production, distribution, and marketing of hygienic paper products including facial tissue, baby diapers, table napkins, toilet rolls, paper towels, and so on. The company employs about 3,300 people at nine mills and has demonstrated a commitment to operate in accordance with the principles of FSC and Program for the Endorsement of Forest Certification (PEFC). It has a corporate level Supply Chain department responsible for purchasing raw materials, including pulp and fluff, for all of its business operations. The company's supply chain department has established a list of approved suppliers who meet certification requirements. An essential component of these certifications are the Chain of Custody (CoC) certificates, which provide a verifiable guarantee to customers that the products are originating from suppliers that promote sustainable forest management.

Source: IEG.

Downstream investments can also support sustainable forest management – if they are supporting alternative, sustainable sources of fiber supply. This was the case for ten of IFC's Forest Product Sector investments that supported firms that sourced fiber from waste and recycled paper in Colombia, Egypt, Kyrgyz Republic, Mexico, Nigeria, and Turkey. In Mexico, for example, recycled paper, rather than wood pulp, is the principal feedstock in paper mills accounting for about 75 percent of raw materials.¹³ They also include support for environmentally friendly firms that source agricultural byproducts, such as wheat straw, for packaging in Pakistan.

MEASURING ENVIRONMENTAL OUTCOMES OF IFC-SUPPORTED INVESTMENT OPERATIONS

IFC's investments in Forest Product Sector industries have aimed at: (i) enhancing sustainable forest management; (ii) mitigating pollution and greenhouse gas emissions; (iii) generating renewable bioenergy, for example, with biomass projects in Brazil, Vietnam and Indonesia, and; (iv) improving occupational health and safety in downstream operations across all regions.

The World Bank Group's Operational Policy 4.36, replaced by IFC with Performance Standard 6 in 2006, is used to measure the compliance of projects with a set of sustainable forest management criteria. Seventeen forest sector projects have been evaluated against OP 4.36. IEG found that 76 percent (13 out of 17) of these projects complied with sustainable forest management investment criteria as stipulated by the policy – so that there was no significant land conversion or degradation of critical forests, that industry-scale commercial harvesting was materially certified (or planned to be certified), and the criteria for small-scale community harvesting were met. Forest management practices at a pulp mill were strong; more than 90 percent

of the wood is FSC certified. Ten projects were appraised and supervised against IFC's Performance Standard 6 (PS6) – "Biodiversity Conservation and Sustainable Natural Resource Management," and here the success rate was 80 percent (8 out of 10). The environmental performance was below average in China, where half of the projects did not meet either OP 4.36 or PS6 requirements. However, data were insufficient to measure the performance of six IFC investment projects against either OP 4.36 and or Performance Standard 6, including two projects in China.

Certification is a requirement of the operational policy, where applicable in forest-related investments. There have been stepped-up efforts by IFC at supporting sustainability along the supply chain, but the record indicates continued challenges in achieving certification and ensuring sustainable forest management especially at smallholder plantations. Of the 32 projects that are producing or using wood from natural or plantation forests and are therefore subject to certification requirements, 15 have achieved certification as planned, while 7 did not put certification or other verifiable supply chain mechanisms in place¹⁴; of the remainder, 9 had plans for certification and one did not have information to determine status. For example, shortcomings with respect to certification were identified in investments in a furniture company, a medium-density fiber board (MDF) panel manufacturer, and a plantation operation.

Site visits allowed for a deeper examination of clients' experiences with putting in place certification schemes. IFC and MIGA's Uruguay client relies on a large-scale industrial plantation and was the first company in Uruguay to achieve FSC certification. At the Uruguayan mill, 92 percent of the timber is FSC certified. In 2006, group certification was applied for third-party suppliers, and the company has voluntarily declared 4,900 hectares as protected area within its own land holdings.

Chile has created its own forest certification system, CertforChile, based on the Programme for the Endorsement of Forest Certification (PEFC), a program deemed more in line with Chilean conditions and validated against international protocols. As of 2009, about 1.32 million hectares (63 percent) of national plantation area was CertforChile certified, but less than 30 percent was FSC certified. In 2006, IFC invested in about 8,000 hectares of eucalyptus and pine plantations through a fund that managed forestry companies and acquired young plantations on degraded land in central Chile. IEG found that the fund managed reasonably well the environmental and social risks in its plantation operations.

In India, FSC certification is nascent. At the client mills in India that rely on small-scale agroforestry, certification penetration is low. The first IFC client in India to achieve certification did so in December 2011.

The Environmental and Social Effects indicator in IEG project evaluations includes – in addition to environmental and social aspects in upstream plantations and production forests – information on Industrial Pollution and Occupational Health and Safety aspects in downstream industrial facilities. The Environmental and Social Effects ratings for the Forest Product Sector were found to be performing below average compared to other sectors.

The environmental performance of several projects was low at the time of appraisal because of outdated production and pollution control technology. Also, the client companies often did not have the resources during the project to upgrade the facilities. But more important for the purpose of this evaluation, IEG found that since the aim of several of the forest product sector projects was to decrease industrial pollution in wood-related manufacturing industries, other indicators related to the supply chain and sustainable forest management were not sufficiently incorporated in design – despite the fact that this information is needed to measure progress against the World Bank and IFC's updated Forest Strategies. In the case of the latter, establishing a sound chain-of-custody in downstream industries is integral to IFC's ability to influence sustainable forest management upstream and along the continuum of the forest product value chain.

IFC's Forest-Related Advisory Services

IFC supported 44 forest-related Advisory Services activities with total funding equal to \$30 million. The Advisory Service projects were concentrated in the East Asia and Pacific and Latin America and Caribbean regions. Thirty-two percent of total support was directed toward one global program – the Biodiversity and Agricultural Commodities Program (BACP) – which concentrated its early efforts on palm oil and soy (it will also cover cacao) in the two regions, especially in Brazil and Indonesia. The program is expanding to Gabon, Ghana, Liberia, and Malaysia. IEG determined that, based on the magnitude, geographic and strategic relevance of this operation, it warranted an in-depth desk and field-level review. The results of the review of the BACP follow.

SUPPORT FOR PRIVATE INDUSTRY INITIATIVES TO INTRODUCE BIODIVERSITY-FRIENDLY AND SUSTAINABLE PRODUCTION PRACTICES IN AGRICULTURAL LANDSCAPES AND BEYOND

In line with its strategy, IFC launched the BACP in 2007 to support the transformation of the market for those commodities driving tropical deforestation in an effort to make them more compatible with forest and biodiversity conservation. The program's approach is to: (i) promote the adoption of biodiversity-friendly production practices within institutional and regulatory environments; (ii) improve

production practices of targeted commodities to increase preservation of global biodiversity; (iii) increase demand for products with positive biodiversity impacts; and (iv) promote the development of financial products and services to facilitate and encourage the adoption of biodiversity-friendly practices.

Initial emphasis has been placed on countries with high commodity production volumes and significant global biodiversity, including: Brazil, Cameroon, Côte d'Ivoire, Ghana, Indonesia, Liberia, Malaysia, and Papua New Guinea. The program supports two industry roundtables, the Roundtable for Sustainable Palm Oil, mainly focused on Indonesia, and the Roundtable for Responsible Soy, focused on Brazil.

BACP's activities have increased understanding of the impact of palm oil and soy on biodiversity. Indonesia is the world's largest producer of palm oil, with an oil palm plantation area of 8 million hectares, up from around 3 million hectares in 2000. The rapid expansion of oil palm plantations, and those for pulpwood, has been responsible for a large portion of Indonesia's deforestation over the past two decades. Aside from the clearing of forests, the rapid expansion also took a heavy toll on traditional peoples and local communities, whose land was taken over by plantations.

In 2004, concerns about the environmental and social impacts of palm oil expansion led to the formation of the Roundtable on Sustainable Palm Oil by leading companies from all segments of the palm oil supply chain, working in cooperation with major environmental NGOs. Among the activities supported by BACP grants have been: landscape-level assessments and spatial-planning tools that identify degraded forest land suitable for rehabilitation and planting by smallholders; identifying and demarcating areas of high conservation value; mapping critical ecological corridors; and promoting integrated pest management (Table 3.2 lists the activities and results for the palm oil roundtable).

Table 3.2. BACP Activities in Support of Sustainable Palm Oil

Activity	Objective	Output/Outcome
Landscape-based assessments	Identify high conservation value (HCV) and degraded forests. Work with local government planning agencies. Assist roundtable members to adopt landscape-based planning.	Draft spatial plans for 290,000 hectares, in two districts, with a recommendation to designate 65 percent as HCV areas. Illegal to convert these HCV forests for productive use (subject to approval). Conservation of 27,000 hectares of HCV in concession areas.
Rehabilitation of degraded forests	Demonstrate the feasibility of cultivating oil palm on degraded forest lands by smallholder farmers. Provide a solid basis for relocating existing but undeveloped palm oil concessions threatening the last remaining high biodiversity coastal swamp rainforest.	Demonstrated that the roundtable's better management practices enabled superior rates of return to oil palm growers on degraded forest lands and over-forested or unforested peat lands. Identified an additional 200,000 hectares of degraded forest lands in Aceh suitable for development. Identified the underlying driver of plantation development on peat soils instead of degraded lands as a lower probability of conflicting land tenure claims by local communities.
Roundtable biodiversity-related principles	Ensure roundtable practices comply with local and international laws and regulations. Demonstrate that roundtable principles conserve endangered species and protect HCV forest areas..	Prepared a practical toolkit and a handbook for identifying and monitoring biodiversity in oil palm landscapes.
Preserving biodiversity	Develop a technical guide for the identification and utilization of degraded forest lands for sustainable oil palm expansion.	Prepared a Site Selection Guide for Identifying High Potential Areas for Sustainable Palm Oil (field tested in 22 sites).

Sources: IEG, IFC.

IFC's support for sustainable soy grew out of its involvement with a leading soy producer, which quickly expanded into a sector-wide approach. Brazil is the world's second largest and most rapidly growing exporter of soybeans. The expansion of soybean cultivation has been associated with the extensive deforestation of Brazilian tropical forests, resulting in the near disappearance of the Atlantic forests in southern Brazil during the 1970s and 1980s, and the extensive deforestation of the central savannas (*cerrado*) in the 1990s (see, for example, Barona and others 2010).

During the first half of that last decade, the increase of soy cultivation in the *cerrado* pushed cattle ranching farther north, making soy a major factor driving deforestation in the Amazon. In response to widespread concerns about the impact of soy cultivation on deforestation in Brazil, IFC undertook an Advisory Services project with a key client to develop and implement an environmental and social

management system for its own operations as well as for its supply chain of pre-financed farms. An important element of this assistance was the development of a stakeholder dialogue with NGOs, academics, and the soy industry to clarify the scope and scale of impacts and provide guidance on good practices.

Soon after, the client became a founder and leading force behind the establishment of the Roundtable for Responsible Soy – a multi-stakeholder initiative to develop global solutions to ensure that soy production is environmentally sound and socially equitable. During the second half of the decade (2006-10), deforestation in the Amazon declined precipitously while agricultural production continued to increase. This has been partly credited to the implementation of policies intended to reduce deforestation, suggesting that increased agricultural production and reduced deforestation can occur simultaneously if land is available and policies promote agricultural intensification while controlling deforestation (Macedo and others 2012).

The Roundtable for Responsible Soy adopted a program of voluntary production standards (2009) aimed at reducing the negative impacts of soy production on the environment and people. These standards include prohibitions on the conversion of high conservation value (HCV) areas – such as forests and savannahs – reducing greenhouse gas emissions, and eliminating the most hazardous pesticides. From 2010, four BACP activities have assisted the roundtable to support the expansion of a registry of socially- and environmentally-responsible farmers, to evaluate the impacts of soybean production on Amazonian biodiversity, to map HCV areas in the Mato Grosso state, and to develop a toolkit for the self-assessment of smallholder farmers to enable them to link up to preferential markets. (Table 3.3 lists the activities and results for the soy roundtable.)

IFC also attempted to support sustainable beef production in Brazil, but that effort has not been successful due to challenges associated with the fragmented nature of the supply chains. As with palm oil and soy, IFC's involvement began with an advisory service project to implement a sustainable cattle procurement model with a leading meatpacker, under which its supply chain of cattle ranchers would be required to regularize their land tenure, secure environmental permits, and introduce good agricultural practices focused on pasture management and land intensifications, plus sanitation, nutrition, and animal health. IFC's client, however, soon lost interest as it was unable to obtain the required certifications from most ranchers, who had alternative meatpackers they could supply.

A subsequent advisory service project to support a sector-wide approach with a Sustainable Beef Working Group has not as yet had any results, mainly due to the

lack of integration of the beef supply chains, with many competing players at each level. At present, the main driver for sustainable cattle ranching in Brazil has been law enforcement targeted at beef traders, rather than voluntary industry action.

Table 3.3. BACP Activities in Support of Sustainable Soy

Activity	Objectives	Outputs/Outcomes
Expand reach and scope of Alianza da Terra's Registry of Social-Environmental Responsibility (RSR).	Improve the social and environmental management of rural properties through data tools (RSR database). Identify areas where good practices, in line with roundtable Production Standards. Identify where corrective actions, in line with a signed Socio-Environmental Compliance Plan (SCP), are needed.	161 properties, with 694,000 hectares, with a signed SCP. Three properties with 92,000 hectares achieved certification.
Evaluating the impacts of soybean production on Amazonian biodiversity.	Improve the scientific basis for assessing biodiversity impacts of soybean production. Identify better management practices to reduce biodiversity impacts.	Produced a guidebook for the identification of wildlife (and their traces) in rural areas. Studied the impacts of pesticide use in soybean plantations on freshwater biodiversity.
Mapping high-conservation value (HCV) areas in the Mato Grosso state.	Conduct a large-scale mapping of HCV areas in the cerrado savannah of Mato Grosso. Identify areas where potential soy cultivation expansion may be threatening HCVs. Formulate HCV monitoring plan.	Mapping completed. Applying map as a planning tool (under way).
Inclusion of biodiversity-friendly smallholder roundtable-certified soy in preferred markets.	Develop a toolkit for the self-assessment of smallholder family farmers for compliance with the roundtable's Production Standards. Develop a method to link smallholder certified soy production to preferred markets.	Produced the self-assessment toolkit.

Sources: IEG, IFC.

LINKING IFC'S FOREST-RELATED ADVISORY SERVICES WITH INVESTMENT OPERATIONS

IFC's Forest Strategy Update made a case for more closely aligning its Advisory Services with its investments in the sector. One out of every four of IFC advisory services projects were linked to investment operations. Of these, efforts to link advisory services to investment operations in Latin America are particularly noteworthy as they yield lessons about the opportunities and challenges of approaches that were tested but failed (Nicaragua), and that are being advanced again in a more holistic way (Bolivia).

In Nicaragua, IFC's forest-related Advisory Services have aimed to: (i) stimulate the production of sustainably managed forests; (ii) stimulate the demand for sustainable wood; and (iii) work with indigenous communities and improve livelihoods.

Building on the World Bank's land titling support in the "Región Autónoma del Atlántico Norte" (RAAN), IFC's Advisory Services has worked since 2006 with indigenous communities including: Layasiksa, SIPBAA Forest Group, Las Crucetas, and more recently, Awas Tingi. Regarding the latter community, IFC designed a project to help communities recuperate from Hurricane Felix which had devastated much of the RAAN forests in 2007. With this initiative, jointly funded by the community, IFC and an IFC investee client focused on assisting the community to sustainably manage its forests, strengthen internal governance in community businesses, improve efficiencies, and reduce dangers via Reduced Impact Logging, and produce certified tropical hardwoods that would be sold to Nicaraguan Industrial and Indigenous Precious Woods (MAPINICSA), a sawmill firm integrated with Simplemente Madera, an IFC investment client.

This effort to build a sustainable and inclusive business model in the sector was highly relevant, but ultimately not feasible due to: national level politics that prevented exports of certain wood products; unclear land tenure that caused a major financial loss to the company; and an insufficient working relationship with the RAAN government. Since that time, both the advisory and investment work have terminated. Lessons from this operation have been helpful in designing other Advisory Services projects in the region. Senior IFC staff have been hired to live and work at the project site – bringing to bear technical knowledge on reduced impact logging, and keen social awareness on community dynamics. In 2008, Advisory Services partnered with the World Wildlife Fund (WWF) in Bolivia to develop a business diagnostic tool, procedures for group certification, contract and bidding formats, a marketing mechanism for certified wood, legal structures for indigenous Community Forestry Management Enterprises, and direct linkages between communities and company. These activities paved the way for the first IFC investment in a tropical forestry operation in 20 years.

Advisory and Investment teams are working together in Bolivia with a shared client: Sustainable Business Advisory focuses on strengthening indigenous enterprises to bring a sustainable supply of certified wood, and the investment operation is utilizing an innovative rate scheme (whereby the rate is lowered when the company's rate of certification is raised). Too soon to evaluate, the operation should be studied as a case that had drawn lessons from the past and is truly representative of the integrated model envisioned by IFC.

IFC's Advisory Services have produced several lessons for IFC working in the forest sector, including the importance of: (i) customizing projects to the local context when replicating successful pilot projects both within a country and in other countries (for example, Vietnam and Lao PDR); (ii) identifying a lead firm when

CHAPTER 3

IFC AND MIGA'S IMPLEMENTATION OF THE 2002 FOREST STRATEGY

working with models that rely heavily on foreign demand (from the U.S. and EU) with little domestic demand (see Box 3.4); (iii) reducing the time and costs of certification, for example IFC has worked to develop group certification to reduce individual enterprise costs and increase the likelihood of certification on a broader scale; and (iv) sequencing interventions and attending to policy and market linkage components, as well as adequate cross-fertilization between business lines (for example, Access to Finance and Investment Climate).

Box 3.4. IFC's Sustainable Wood Advisory Service Program in Indonesia

IFC's Sustainable Wood Advisory Service program in Indonesia, launched in 2004, constitutes 18 percent of the total value of forest-related Advisory Services supported during the review period. The support in Indonesia began with a market study of the demand and supply of certified sawn timber and the design of a sustainable business model to incentivize the flow of sustainably harvested timber into the Indonesian furniture trade chain. More recent work has also emphasized the role of plantations (fast-growing species) in reducing pressure on natural forests, in the sustainable furniture supply chain, and community involvement in plantation concessions (for timber and non-timber).

The objectives of the program were to increase the competitiveness of Indonesian furniture manufacturers based on the assumption that there was significant demand in export markets for certified furniture. The program helped to support six small and medium enterprises (SME) furniture producers in Java to implement a Chain of Custody (CoC) system, four of which achieved full Verified Legal Origin certification. However, by 2011 when IEG conducted its field visit, only one of the participating furniture makers was still producing certified furniture.

The Sustainable Wood program in Indonesia, lacked participation of one or more lead firms to provide an anchor in the value chain. For the plantation company, the demand from SME furniture makers was too small in comparison to that from the pulp and paper market, to merit special attention and handling, such as for their drying requirements. For the global furniture buyers, the Indonesian SMEs were only one of many sources, to which, in the face of global competition, they could only offer very low prices for furniture made from an alternative to the traditional tropical timbers, with no premium for certification.

The complexity and lack of clarity of the licensing and permitting requirements for timber plantations, transport, processing and trading in Indonesia, as well as teething problems with the certification program, increased the buyers' perception of risk. These were time consuming and difficult for a small program to overcome.

It should also be noted that the IFC made no attempt to link up and coordinate its forest policy dialogue with that conducted by the World Bank's forest team, which was at the time supporting the Ministry of Forestry's in-house experts working group in the preparation of a Road Map for the Revitalization of Indonesia's Forest Industry. A lesson here is that greater collaboration between the IFC and World Bank teams working on similar issues could lead to improved results.

Sources: IEG, IFC, World Bank.

The Multilateral Investment Guarantee Agency's Support for the 2002 Forest Strategy

MIGA's mission is to promote foreign direct investment (FDI) into developing countries to help support economic growth, reduce poverty, and improve people's lives. Its operational strategy aims to attract investors and private insurers into

difficult operating environments, placing emphasis on IDA clients, conflict-affected environments, complex deals in infrastructure and extractive industries (especially those involving project finance and environmental and social considerations), and South-South investments (from one developing country to another).

While MIGA has only supported three projects that have directly influenced sustainable forest management, its forest sector operations have taken place in difficult operating environments – such as in post-conflict Liberia, as well as promoting South-South investments – such as between South Africa, Swaziland, and Mozambique.

Alongside IFC, MIGA also provided insurance for equity investments in a greenfield pulp mill in Uruguay – an investment that represents the largest foreign investment in Uruguay's history. – It is generating value equivalent to 1 percent of Uruguay's entire annual GDP, and 9 percent of the country's exports for each year of full-capacity production. (Since this guarantee was linked with an IFC investment operation, it is discussed in the previous IFC section).

In Liberia, MIGA provided a guarantee to Vattenfall AB valued at \$142.2 million to support an investment in Buchanan Renewables Fuel Inc. The guarantee, issued on December 28, 2010, has supported the collection and processing of non-productive rubber trees in Liberia. Although this ceased to be a MIGA project as of July 2012, the guarantee supported an investment that helped to stimulate growth in the sector and facilitate local job creation.

An estimated 60-75 percent of rubber trees in Liberia had been slaughter-tapped or been left to ruin during the 15-year civil war. The backlog reportedly amounts to nearly 60 million tons of biomass that can be harvested and exported. The non-productive rubber trees are collected, processed, and exported in the form of wood chips to power plants in Europe as a substitute for coal to meet 2020 emission targets. As of December 2011, Buchanan Renewables Fuel Inc. had exported 220,000 tons of woodchips derived from the processing of some 275,000 rubber trees. This was up from 95,000 tons in its first year of operations (2010).

While originally aiming to expand operations to 2 million tons, Buchanan Renewable's revised goal is to produce 1.4 million tons by 2014. This expansion of operations is needed to support a proposed 35 megawatt biomass-fueled power plant in Monrovia that has been proposed by Buchanan Renewables Fuel, but that is not considered part of the MIGA-supported project. As of December 2011, the company was also employing 750 local staff at a minimum wage of \$130 per month. There is some focus on capacity building and training: the company employs some

40 expatriates who are engaged in training local staff in driver training, mechanics, CAT mechanics, and machine operation (wood chippers). The company has generated secondary effects through the purchase of local goods and services.

The environmental and social conditions put in place through the MIGA guarantee were comprehensive, but due to the cessation of the project it is unclear whether the sponsor will continue to invest in operations that are in full compliance. These conditions included: (i) that the operation never encroach on natural forests; (ii) that replanting be done on a 1:1 basis; (iii) that due diligence be practiced and negotiations held in good faith with the affected communities regarding land-use and employment; and (iv) that occupational health and safety standards be put in place.

Beyond these conditions, the project paid special attention to the plight of charcoalers whose supply may have been affected by the removal of the rubber trees. As part of its environmental and social conditions, MIGA stipulated that enough wood should be left for the charcoalers. With funds from the Japanese, it supported a study and held a participatory workshop on the issue of charcoal prices and the availability of supply.

While the initial proposal for this study suggested the collection of a range of data including charcoal demand and supply, price, types and quantities of biomass feedstock used in charcoal production and factors causing deforestation, primary data was not collected to conduct the analysis and hence limited the study's ability to assess impacts. The study's main conclusion is that there is no discernable causal link between Buchanan Renewable's activities and the significantly increased consumer charcoal price (from 70 LID per roadside bag in 2007 to 150 LID in 2012).

In Mozambique, MIGA provided political risk insurance for a wood chipping operation in Maputo. The project gets raw material (logs) from suppliers in South Africa and Swaziland and processes them in Maputo for export. As part of its conditionality, MIGA asked its client to ensure that the forest resources supported by the project are Forest Stewardship Council (FSC) certified to ensure that the supply chain is from a sustainable source (as per Performance Standard 6). A year and a half into operations, no monitoring results were available to report on the compliance of this operation.

The 2002 Forest Strategy assigned a place for MIGA in implementing the strategy by seeking opportunities to insure private sector investments that improve forest management and sustainable outcomes. A recent memorandum of agreement

CHAPTER 3
IFC AND MIGA'S IMPLEMENTATION OF THE 2002 FOREST STRATEGY

signed between IFC and MIGA is seen as a concrete step toward working jointly on several initiatives, including the forestry sector.

4. World Bank Group Global Partnerships and Institutional Collaboration

Highlights

- ❖ Partnerships are the key to establishing a strong consensus-based agenda for forest conservation and development linked to broader development agendas. Over the past decade, the Bank Group has engaged, and in some cases, catalyzed, global, national and local forestry partnerships largely consistent with its 2002 Forest Strategy.
- ❖ The Bank has also used partnerships to address legal issues, and develop learning and knowledge activities. In addition, partnerships have been valuable in launching pilot approaches to forestry issues.
- ❖ Regarding Bank Group institutional collaboration, more could be done to exploit the relationships and take advantage of synergies between IFC, MIGA and the Bank.

Engagement with Partners in the Forest Sector

The Bank's 2002 Forest Strategy recognized that the Bank, working alone, does not have the human and financial resources to address the pressures and harness the opportunities in the sector in a way which is optimal from the point of view of the objectives of the Forest Strategy – and is easily targeted to criticism by dissenting or negatively-affected stakeholders at different levels. Partnerships, building on the Bank strengths of analytic capacity and ability to convene multiple stakeholders, are necessary to establish strong consensus-based agendas for forest conservation and development linked to broader development agendas. Partnerships can leverage sufficient resources and coordinated efforts in implementation, and manage the tensions and trade-offs related to Bank engagement in the sector.¹⁵

Over the past decade, the Bank Group has engaged, and in some cases catalyzed, global, national, and even local partnerships related to forests. The Bank is currently engaged in 14 forest or forest-related partnerships (Box 4.1). The partnerships combined command a significant amount of resources when compared with World Bank Group commitments in the sector.

The Bank is one of the 10 executing agencies of the Global Environment Facility. The GEF has committed an average of \$78 million a year to forest-related activities in

Bank-implemented projects between 2005 and 2008.¹ In 2010, it established a Strategy on Sustainable Forest Management SFM/REDD+, which created a separate \$250 million funding envelope for SFM/REDD+ in the fifth replenishment of GEF.

The other partnerships currently have a combined funding commitment of \$1.44 billion. This represents a significant source of financing, especially when compared to the IDA and IBRD commitments of \$2.6 billion to the sector since 2002. Although these figures are not directly comparable, they give an indication of the importance of the funding leveraged by the partnerships compared to the other funding sources.

EVOLUTION OF PARTNERSHIPS IN THE CHANGING GLOBAL CONTEXT

The World Bank has faced criticism in the past for the way in which it convened and engaged in forest partnerships. There has been concern among some groups that the Bank had put in place “privileged partnerships” with select international conservation NGOs, such as Conservation International and the World Wildlife Fund. There was also concern about the proliferation of Bank-administered trust funds supporting forest sector programs, each with separate governance structures, demonstrating few linkages (Blomley 2012).

In response to these concerns, the Bank launched a global consultation to solicit ideas to enhance its engagement strategy in the forest sector. There was widespread support for increasing the participation of marginalized forest-user groups and to engage more prominently at the country and local level. This would ensure that the drivers of forest degradation and loss are better understood by the Bank—so those affected most by forest management decisions could have a stronger voice in developing them (Blomley 2012).

Box 4.1. Forest-Related Global Partnerships Involving the World Bank Group

Global Policy Partnerships

United Nations Forum on Forests (UNFF), established in 2001, is a subsidiary body of the UN Economic and Social Council. It promotes the management, conservation, and sustainable development of all types of forests and works to strengthen long-term political commitment to this end.

Collaborative Partnership on Forests (CPF) is a voluntary arrangement among 14 international organizations and secretariats with substantial programs on forests aiming to: increase collaboration among CPF members; assist countries to achieve their forest-related goals and support implementation of sustainable forest management; and support the international dialogue on forests, UNFF, and its member countries.

Collaboration with the United Nations Framework Convention on Climate Change (UNFCCC) process. The Bank has been an active collaborator with the UNFCCC process,

especially in the Forest Days organized during the Conference of the Parties' meetings through: hosting and participating in specific events, through the work of Forest Carbon Partnership Facility (FCPF) and Forest Investment Program (FIP) to pilot activities and build capacities related REDD+, and analytic work by PROFOR and partners.

Global Programmatic Partnerships

The Global Environment Facility (GEF), established 1991, is a global partnership among 178 countries, institutions, NGOs, and the private sector to help developing countries meet their obligations under international environmental conventions. It provides grants for projects pertaining to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.

BioCarbon Fund (BioCF), established in 2004, is a global partnership program located in the World Bank's Carbon Finance Unit to deliver cost-effective carbon emission reductions, while promoting biodiversity conservation and poverty alleviation. It mobilizes public and private investment funds to finance projects that sequester or conserve carbon in forest and agro-ecosystems.

Forest Carbon Partnership Facility (FCPF), established in 2007, aims to help countries achieve emissions reductions from deforestation or forest degradation, and to pilot a performance-based system for REDD emission reductions. The Forest Investment Program (FIP) is a targeted program of the Strategic Climate Fund, one of two funds within the framework of the Climate Investment Funds (CIF). It works in collaboration with other multilateral development banks to support developing countries' efforts to reduce deforestation and forest degradation (REDD), and promotes sustainable forest management leading to emission reduction and the protection of carbon reservoirs.

Dedicated Grant Mechanism for Indigenous People and Local Communities (DGM) is an initiative of the FIP, with a funding allocation of \$50 million, focusing on incorporating forest communities, indigenous peoples, and other locally involved communities into the national REDD+ processes in FIP countries.

Program on Forests (PROFOR) is a global partnership program started by the World Bank and eight bilateral donors in 1997 to support in-depth analysis, and create and disseminate knowledge about sustainable forest management (SFM). Relocated from United Nations Development Programme (UNDP) to the Bank in 2002, it finances analytical work in four thematic areas: forests' contributions to livelihoods of the rural poor, forest governance, innovative financing for SFM, and mitigating adverse cross-sectoral impacts on forests.

Forest Law Enforcement and Governance Program (FLEG), established in 2001, is a multi-donor trust fund located in and managed by the World Bank's Forestry Anchor to combat illegal activities and improve the quality of governance in the forest sector. It supports research, organizes regional ministerial conferences, and supports the formulation of national action plans to implement reforms. The FLEG program continues its activities now as part of PROFOR.

World Wildlife Fund (WWF)/World Bank Alliance for Forest Conservation and Sustainable Use, established in 1998 and discontinued in 2007, was a bilateral partnership between WWF and the World Bank that worked with governments, the private sector, and civil society to achieve established targets in relation to the expansion and management of

forest protected areas, and the sustainable management of production forests.

Critical Ecosystem Partnership Fund (CEPF), established in 2000, is a global partnership program among the GEF, World Bank, Conservation International, France, Japan, and the McArthur Foundation, providing grants to civil society organizations and the private sector to support conservation and management of globally significant biodiversity hotspots in developing and transition countries.

Growing Forest Partnerships (GFP), established in 2008, is a global network-type partnership program that builds and supports local, national and international networks. GFP seeks to improve the connections between forests and other sectors. It aims to ensure that global discussions about forests include real, current challenges that forest-dependent people and local forest managers are facing, bringing the voices of local communities and indigenous peoples forward to influence decision-making.

Global Partnership for Forest Landscape Restoration (GPFLR) is a proactive network that unites governments, organizations, communities, and individuals. Chaired by the Director General, Forestry Commission of Great Britain, the coordinator is located at the International Union for Conservation of Nature (IUCN) in Canada, and the network is led by the Wageningen Centre for Development Innovation in the Netherlands. Partners include some 20 international organizations, research bodies and NGOs. The goal is to catalyze and reinforce a network of diverse examples of restoration of forests and degraded lands that deliver benefits to local communities and to nature, and fulfill international commitments on forests.

Source: IEG.

The Bank's involvement in forest-related partnerships has evolved in response to these concerns. The exclusive WWF-World Bank Alliance partnership, with its rather narrow focus on forest certification and conservation, has evolved into broader multiagency partnerships with a land-use and landscape-based focus, namely the Growing Forest Partnerships (GFP). The GFP is, in turn, in the process of being integrated into the next phase of the FAO-operated National Forest Program (NFP) Facility, renamed the Farm Forest Facility; and, the Global Partnership for Forest Land Restoration (GPFLR), which is evolving from an informal network toward a more structured partnership.

The most recent and successful examples of how the Bank partnership structures have evolved in the changing global context are the forest and climate change-related partnerships, especially the Forest Carbon Partnership Facility (FCPF) and the Forest Investment Program (FIP), and the Dedicated Mechanism for Indigenous People and Local Communities (DGM), where the Bank has perceived high immediate – and even higher long-term – opportunities to act as trustee for donors interested in funding pilots related to REDD+.

The prominent role of the Bank would hardly have been possible without its engagement and visible profile in the intergovernmental negotiations on climate change and forests, and the close collaboration with other international organizations, government negotiators, think-tanks, and civil society advocacy groups to gain the necessary trust and profile. At the same time, this high-level engagement has exposed the Bank to potential reputational risks related to the future of the REDD+ regime.

The Bank has also acted as an “incubator” of partnership structures, especially at the public-private interface, such as the Forest Trends and The Forests Dialogue (TFD), which have evolved into independent self-financing initiatives. Both still collaborate with the Bank on specific themes, and specific activities are supported by the Bank. These two initiatives operate at the private sector–civil society interface, with significant involvement of private companies.

There are also other partnerships dealing partly with forest-related activities, such as the Global Environment Facility, BioCE, and the Critical Ecosystems Partnership Fund (CEPF). The GEF-financed projects have been the largest single source of partnership financing for forest-related activities, and are perceived to have the most direct linkages to Bank country operations as Bank regional staff help prepare, appraise, and supervise GEF projects, making use of the reimbursable funds that the GEF Secretariat provides to the Bank to cover staff costs.

GEF grants have been associated or blended with IDA/IBRD capacity building to support the biodiversity and protected areas components of sector-wide programs in 60 countries including Argentina, Brazil, Cameroon, Chile, Gabon, Georgia, Kazakhstan, Mexico, and many others. Due to their significance for the Bank forest-related lending and especially for the protected areas and biodiversity corridors portfolio, GEF contributions are discussed separately in the context of country operations.

Underlying these partnerships is an effort to join forces with like-minded organizations in piloting new approaches and related lesson learning, as well as strengthening and empowering local actors to advocate policy change at the country level. Aligned with the recommendation of the 2007 Review of Implementation of the Forest Strategy, the Bank has endeavored to broaden the partnership base to avoid “privileged” partnerships with individual NGOs. However, the idea of forming an inclusive “global” partnership has so far proven too ambitious, and may be impractical from an operational point of view.

ASSESSMENT OF PARTNERSHIP OBJECTIVES AGAINST THE THREE PILLARS OF THE 2002 STRATEGY

Overall, the objectives and activities of the partnership programs are consistent along a number of dimensions, specifically: (i) with different degrees of intensity; (ii) with the objectives of the 2002 Forest Strategy and; (iii) with the majority giving weight especially to the objective of reducing poverty and protecting the forests' local and global environmental services, that is, the local and global public goods' functions of the forests.

There has been increasing focus on indigenous peoples' and rural community participation, rights and capacity (for example, by DGM which is specifically set up for this purpose), as well as on land allocation, tenure and rights' issues. Focus has also extended to underlying governance issues and cross-sectoral linkages critical to the achievement of the Forest Strategy objectives. Table 4.1 summarizes the weight given to the three pillars of the 2002 Forest Strategy by the objectives of the currently operational partnerships.

Table 4.1. Summary of Operational Partnerships' Weight to the Three Pillars

Partnership	Poverty reduction	Economic growth	Environmental services
GEF	+	-	+++
CEPF	+	-	+++
BioCF	+	-	+++
PROFOR	+++	++	++
FCPF	++	+	+++
FIP	++	+	+++
DGM	+++	-	++
GFP	+++	-	+++
GFPLR	+++	+	+++
TFD	+++	++	++

Sources: Information on partnership websites and expert interviews.

Note: +++ = major focus; ++ = important, but not principal focus; + = included but not important; - = negligible or not addressed. BioCF= Biocarbon Fund; CEPF=Critical Ecosystems Partnership Fund; DGM= Dedicated Grant Mechanism; FCPF= Forest Carbon Partnership Facility; FIP= Forest Investment Program; GEF= Global Environment Facility; GFP= Growing Forest Partnerships; GFPLR= Global Partnership for Forest Landscape Restoration; PROFOR= Program on Forests; TFD= The Forests Dialogue.

Forest Law Enforcement and Governance Program (FLEG)

The World Bank had a central coordinating role in the Forest Law Enforcement and Governance Program (FLEG), which was founded in 2001 in response to increased awareness of the undesirable effects of illegal forest actions. The program's strategy was to increase knowledge of the causes of inaction, generate enough political commitment to deal with this sensitive problem through explicit pledges to action by high-level government officials at regional ministerial conferences, and

encourage implementation of agreed reforms. It has helped to raise the level of global awareness as well as the mobilization of public opinion and political commitment to improve levels of governance by taking specific action to curb illegal logging and trade in wood of suspect origin.

The main impact of the FLEG program has been through the Regional Ministerial Processes in East Asia, Africa, Europe and Central Asia, and Central America. These political processes – involving producers and consumers, government officials, and civil society and private sector representatives – resulted in high-level political declarations and action plans against illegal logging and trade in illegal timber, and have provided a political platform for action at the country level. There have been numerous follow-up initiatives – with and without Bank involvement – in areas such as formulating national action plans, training customs officials, using anti-money-laundering tools to track forest-related crime, and supporting independent forest monitoring by civil society, among others.

Follow-up to FLEG declarations has been mobilized by the Bank through technical assistance to and policy dialogue with regional organizations, such as the Association of Southeast Asian Nations (ASEAN), on illegal logging and trade of illegal timber, and through the European Neighborhood Policy Instrument (ENPI) FLEG program financed by the EU and implemented by the Bank in collaboration with IUCN and WWF. The FLEG program has collaborated with Bank country operations to help design and put in place measures to combat governance failures in the forest sector, and has cooperated closely also with the Bank's Legal Department and broader governance work. Since its integration into PROFOR, the work on FLEG has focused largely on developing governance indicators and related knowledge products, and in testing these in a sample of client countries.

A 2011 evaluation of selected activities supported by PROFOR found that the program had continued to produce high-quality knowledge around forest governance. The program has been closely linked to and coordinated with the EU FLEG initiative, and the EU has also been the main provider of funds for the FLEG trust fund at the Bank.

The recommendations of the PROFOR-supported report *Justice in the Forest: Rural Livelihoods and Forest Law Enforcement* were taken up by the EU in its negotiations on Voluntary Partnership Agreements – the primary mechanism for restricting the import into Europe of illegally harvested wood – with timber-exporting countries. According to the evaluation, the report was “one of the very first studies to comprehensively examine laws and regulations with the objective of exploring how

they affected people's use of the forest;" and was "a landmark success in terms of its influence on the EU's Voluntary Partnership Agreement process."

The Program on Forests (PROFOR)

PROFOR has produced a substantial volume of analytical material on themes of high relevance to the international forest-related negotiations and processes, such as the UNFCCC and UNFF. With support from PROFOR, the Bank has also been able to play to its comparative advantage of disseminating the findings to high-level audiences at critical times to influence the outcomes of international and national dialogues and debates (Box 4.2).

PROFOR holds annual consultations with regional staff to identify priority activities and has small grants available on an ad hoc basis, but the products must be relevant for wider audiences. Twenty-six percent of PROFOR funds are spent on themes identified by the Anchor, and 74 percent by Regions. All products are disseminated to the Bank Regional staff, and some (for example, the forest poverty toolkit and the forest governance toolkit) have been field-tested by them.

The Bank has also been effectively using the knowledge provided by the partnerships, especially PROFOR, to engage with and influence the international negotiation processes on forests. This is the case especially regarding the dialogue and debate on REDD+ in the UNFCCC negotiations, but substantial inputs were also provided earlier to UNFF in the context of the discussions on forest financing.

Box 4.2. Using PROFOR Learning to Influence World Bank and International Processes

Through PROFOR's "Landscapes of Opportunity" knowledge activity, the Bank (with partners) brought global mapping and analytical arguments to the table at a number of international meetings leading to the Durban Conference of Parties 17 in November 2011. The activity was partnership driven: knowledge was shared and generated by the World Resources Institute (WRI), IUCN and South Dakota State University on behalf of the Forest Landscape Restoration Global Partnership, with support from PROFOR.

The main finding was an exciting one: About 2 billion hectares of degraded and lost forest lands are suitable for restoration. Of those, about 1.5 billion hectares would be best-suited for mosaic restoration, in which forests and trees are combined with other land uses, including agroforestry, smallholder agriculture, and settlements. These are also the landscapes with a high potential impact on poverty reduction.

This message resonated particularly strongly with the Bank because of its own successful experience on the Loess Plateau in China, one of the largest integrated landscape restoration projects in the world, where terracing, natural tree regeneration, tree planting and managed

grazing have resulted in increased yields, incomes and food security, as well as improved resilience, carbon sequestration and erosion control.

Today this shift in management attitudes toward forests and agriculture is very palpable in the Bank and has contributed to steering discussions on climate change toward more cross-sectoral, and landscape-based approaches (minding the + in REDD+, supporting climate-smart agriculture, and so on).

This was reflected in the Bank input in the Durban Forest Day 5 – where the day’s key feature was discussion around REDD+ that went beyond moist tropical forests – to the agriculture lands, dry land forests and grasslands and savannahs. In the speech given by the World Bank’s Social Development Network Vice President at the mid-day plenary, for example, it was said that: “The fates of forests and agriculture are bound together...Forests cannot be sustained if people are hungry or the governance of natural resources is inadequate.” This was widely quoted in blogs and media stories, and echoed in what other participants said in their presentations and speeches. There is a growing consensus among agencies, researchers, donors and policy makers that forest issues cannot be dealt with in isolation, and that tackling deforestation is best done within an integrated landscape approach that builds on the huge opportunities for “triple wins” (income and food security, adaptation and mitigation).

This approach was reflected in the text of the UNFCCC document itself which recognized the need to explore emissions and sequestration from land-use changes –including through “a more inclusive activity-based approach or a land-based approach.” The text also urged the Subsidiary Body for Scientific and Technological Advice to consider “issues related to agriculture”.

PROFOR’s role in this evolution is a good example of how knowledge activities plant and nurture ideas over time and contribute to a larger agenda.

Source: IEG.

PROFOR has funded important studies related to the role of forests in livelihoods, and produced an impressive “Forest Sourcebook” providing guidance on a vast array of issues related to sustainable forest development. While its financial contributions have often been small, PROFOR involvement has catalyzed support from other actors. Many quality studies have been produced with PROFOR support, and the program has in many respects been ahead of the curve. Indeed, several PROFOR knowledge products have become conventional wisdom in the sector.

A 2011 independent evaluation of PROFOR activities related to livelihoods found that “the results and impacts had been achieved with relatively modest resources” and that a “high degree of leverage had been achieved in influencing policies, deepening knowledge and understanding, developing new tools and methods, and strengthening networks” in the PROFOR projects reviewed.

The BioCarbon Fund

The BioCarbon Fund, launched in 2004, provides carbon finance for projects that sequester or conserve greenhouse gases in forests and agro- and other ecosystems. About 80 percent of the fund's resources are oriented to afforestation and reforestation (A/R) projects creditable under the Clean Development Mechanism (CDM). In its first phase, the fund invested heavily in plantations and community reforestation (representing 34 and 31 percent of the technical distribution of the portfolio, respectively), in addition to other activities, such as environmental restoration, assisted regeneration, and agroforestry. The fund also pays for credits generated from reduced deforestation and from soil carbon, which are not recognized under Kyoto. The fund developed the first-ever soil carbon methodology to be approved and registered with the Verified Carbon Standard. It was conceived as, and has the potential to be, a prototype for REDD and other proposed post-Kyoto systems.

The BioCarbon Fund helped catalyze the forest carbon market by helping build the capacity and infrastructure needed for the A/R market, by leveraging finance from both the public and the private sector, and by contributing to the development of 3 of the 12 approved A/R methodologies. Auditors have also been accredited using BioCarbon Fund projects. Nonetheless, the A/R CDM sector remains underdeveloped due to limited demand for forest carbon credits and insufficient capacity among project developers to apply greenhouse gas accounting rules effectively (World Bank 2011).

As of May 2012, the BioCarbon Fund had signed emissions reduction purchase agreements (ERPAs) (carbon offset purchase agreements, ERPAs) with 23 projects, originally for a total of \$30 million. Fifteen of those projects were registered with the UNFCCC under the Kyoto Protocol, generating carbon credits under the CDM. The fund has reached out to underserved clients, allocating 31 percent of its portfolio to Africa, a region that as of May 2010 represented only 2 percent of the total global CDM pipeline and portfolio, and 24 percent of projects in the Bank's pipeline and portfolio (World Bank 2010). At the project level, the Fund has struggled with many of the same implementation issues encountered in the World Bank's forest operations.

Instances of under-delivery of emissions reductions have also been common in the fund's projects and ERPAs have been amended downward for a number of projects by up to 60 percent from the original contracted emission reductions. There are several reasons for this. For example, in a number of projects, suitable CDM-eligible land was grossly overestimated, resulting in significant scaling back of the project

area in each case. A third of the fund's projects were at risk at some point due to insufficient technical or managerial capacity on the part of project developers. In some projects that planted native species or that were implemented on severely degraded lands, tree growth has been slower than expected.

Inadequate up-front financing has been a constraint for many projects, especially given the high transaction costs of A/R projects relative to projects in other CDM sectors. This problem is compounded by the temporary crediting approach, which allows A/R projects to be included in the CDM, but which means that they must be replaced with permanent credits upon expiration. The price of forest carbon credits is thus a function of the future price of permanent carbon credits. This puts forest carbon credits at a disadvantage relative to permanent credits.

Despite these challenges, in October 2012, temporary Certified Emission Reductions (tCERs) were issued for the BioCarbon Fund-supported Humbo project in Ethiopia. This was the first issuance of such credits from Africa and the second worldwide (after Brazil's Plantar project, also in the BioCarbon Fund). The project delivered more credits than originally anticipated.

It is positive development that a country in Africa has become second only to countries in Latin America and the Caribbean in the delivery of these credits, followed by a very recent entrant in the market in Europe and Central Asia (see example below). In addition to the credits, an area has been transformed from a degraded landscape to a lush forested one, bringing a number of benefits such as reduced erosion, increased biodiversity, and improvements in income for the communities involved in the project.

The project has adapted techniques demonstrated in West Africa to promote natural regeneration of woodlands and has restored more than 2,700 hectares of degraded land. The regeneration project has reportedly resulted in increased production of honey, fruit, and fodder and has provided alternative livelihoods for a number of project beneficiaries. In October 2012, it was also announced that the first carbon credits generated by the Moldova Soil Conservation Project had been issued. The issuance of 851,911 tCERs was the largest issuance of carbon credits from a reforestation project in Europe and Central Asia.

The Forest Carbon Partnership Facility

Scientific findings have shown that avoiding deforestation could play a key role in reducing future greenhouse gas concentrations. According to the Fourth Assessment Report (2007) of the Intergovernmental Panel on Climate Change, deforestation and forest degradation are the second leading cause of global

warming, accounting for about 17 percent of global greenhouse gas emissions, and over a third of emissions from developing countries.¹⁶ Recent scientific evidence suggests that emissions from deforestation may be somewhat less than those estimates — or somewhere between 6 and 17 percent of global greenhouse gas emissions.¹⁷ However, these estimates are still subject to considerable uncertainty.

The Forest Carbon Partnership Facility, a follow-on to the BioCarbon Fund, is designed to pilot approaches that might be used in a future REDD regime. The FCPF, launched in 2007 and approved by the World Bank's Board in 2008, has a mandate to assist developing countries in their efforts to prepare for REDD. An IEG Global Program review of the facility found that it has been very effective in providing a platform for debating and defining the modalities of REDD readiness. It has opened a dialogue between donor and recipient countries, as well as between national governments and civil society stakeholders, forest-dependent communities and indigenous peoples' groups. Its learning-by-doing approach has led to significant innovation in defining REDD and its associated modalities for implementation.

However, the FCPF has been constrained by uncertainty in the external environment. The facility was established at a time of enthusiasm and expectation that a regulatory instrument to compensate reductions in emissions from deforestation and forest degradation in the form of carbon payments would be developed under the UNFCCC. Yet, despite continuing negotiations and major funding pledges, no regulatory instrument for REDD financing exists. Pledges have not been converted into commitments at anywhere near the scale envisaged.

In the absence of an agreed instrument and a system of positive incentives and financing flows for REDD, the FCPF has nonetheless rekindled interest in addressing challenges that have plagued the forest sector for years. Because of the requirements associated with REDD+ (the plus being the addition of conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks), the FCPF has facilitated a level of consultation and dialogue at the country level that has not traditionally taken place in many sustainable forest management projects. Hence, the initiative has raised expectations among national and local stakeholders that will be met only if meaningful financial flows follow.

Growing Forest Partnerships (GFP)

The **Growing Forest Partnerships (GFP)** was established in 2008 to improve the connections between forests and other sectors, and to build supporting networks at local, national and international levels. The program arose out of a global

consultation launched in response to criticism of the Bank's administration of external partnerships in the forest sector. A major concern arising from consultations was to find ways to better include marginalized voices in decision-making processes around forests.

GFP has operated in five countries – Ghana, Guatemala, Liberia, Mozambique and Nepal – where it has organized participatory consultation processes to identify the issues that matter to forest-dependent peoples and other local stakeholders. The aim is to bring those issues to the attention of decision-makers and influence policy at both the national and global levels.

A recent evaluation of the program (Blomley 2012) found that, while highly relevant, the program's effectiveness at the country level varied greatly between countries, especially in the extent to which the results of the participatory consultation processes were able to influence policy and catalyze legal reforms. Its main success at the country level was in “engaging new—and in many cases marginalized—voices within forest dialogue processes.” At the global level, the program succeeded in, among other things, identifying and defining a new concept – Investing in Locally Controlled Forests – which is increasingly being adopted by the Bank and the FAO. However, efficiency was undermined by a heavy administrative and financial burden under the Development Grant Facility and complex systems at the country level – in particular in terms of funding and reporting. The GFP is currently in the process of being integrated into the next phase of the FAO-operated National Forest Program (NFP) Facility, renamed the Farm Forest Facility.

The Critical Ecosystem Partnership Fund

The Critical Ecosystem Partnership Fund (CEPF), one of the many global programs that have contributed to achieving the objectives of the 2002 Strategy, has helped protect more than 12 million hectares in 16 biodiversity hotspots. A 2007 IEG review of the program found that activities supported by the CEPF are strengthening local capacity for protected area management. However, sustainability of these activities, like those supported by World Bank and GEF-financed protected areas projects, was at risk. The program also lacks linkages to World Bank operations and country teams, and therefore, misses an opportunity to achieve a wider scale and impact.

The World Bank/WWF Alliance

The World Bank/WWF Alliance has been credited by the 2007 *Review of Implementation of the Forest Strategy* for having contributed to the substantial expansion of the global forest area under protection, for improvements in the management of these areas, and for global growth in the area of certified forests and

improvements in the quality of certification. It is, however, also recognized that due to its catalytic nature, clear attribution of this result is difficult.

The Global Partnership for Forest Landscape Restoration (GPFLR)

The Global Partnership for Forest Landscape Restoration has had an important role in establishing the potential of landscape restoration for both REDD+ and adaptation. It has also helped in promoting the potential for agroforestry and tree-based sustainable land management to contribute to poverty reduction, and as an investment opportunity, especially in Africa.

LACK OF LINKAGES TO WORLD BANK OPERATIONS LIMITS PARTNERSHIP EFFECTIVENESS

Despite these achievements, the Bank's Regional staff have diverse views regarding the adequacy of the linkages of partnership-financed activities with the development of the Bank's lending pipeline. One of the most consistent statements in Bank-wide partnership strategies going back to 2000 has been the desirability of effective operational linkages between partnership programs and the Bank's country operations. However, many of the forest sector partnership programs – by their nature – respond to global priorities, whereas the Bank's regional and country office staff respond to national needs. Finding a balance between the two levels is not easy, and may involve high transaction costs that the regional and country-based staff do not have the resources to handle.

A certain amount of friction is consequently inevitable as partnerships seek to apply new ideas and knowledge products into Bank operations – especially as some of this work is “ahead of the curve” as far as many of the client countries are concerned. Similarly, it is to be expected that there will continue to be some level of friction between the Bank and some client country governments in using some of the approaches and knowledge products developed through the partnerships given their strong advocacy nature, for example, regarding equity, indigenous and local community rights, and actions to combat corruption and illegality.

At the same time, though, the management of a large number of partnerships, and effective involvement in those managed by partners, puts a heavy strain on the limited number (about 30) of foresters and technical specialists in the Bank. There is a trade-off between partnership management and staff capacity for cross-support for lending operations.

Inevitably there will continue to be divergent views on the appropriate level of attention the Bank gives to partnerships versus more traditional lending activities. Similarly, the desirable level of integration of the partnership activities with Bank

lending operations will continue to be debated both within the Bank and with external partners. These divergent views reflect the opinions on the importance given to the partnerships in the Bank's future business model in the sector. Regardless of these differences, there is a common view that there should be synergies, and that these should extend beyond forest sector operations to broader operations in rural development, agriculture, water and governance.

World Bank Group Institutional Collaboration

The 2002 Strategy recognized that all of the Bank Group institutions are aligned to the core mission of poverty reduction and that, therefore, the entire Bank Group shares the overall vision, strategic framework, and objectives of the strategy. Yet the implementation tasks identified in the strategy were addressed to the World Bank. The strategy envisioned that IFC and MIGA would implement the strategy through their ongoing emphasis on financing and guaranteeing private sector investments that improve forest management and sustainable outcomes.

World Bank Group institutions have complementary instruments and share the same objectives, which creates ample opportunities for coordinated efforts with a potential to achieve greater development impact together than separately. However, the intrinsic differences in the business models of the three institutions sometimes lead to divergence in priorities and high coordination costs. The 2002 Forest Strategy set out very broad private sector principles. IFC, for its part, recently adopted its own strategy update against which it seeks to align its operations and make it its own. Thus, while Bank Group institutional collaboration has occurred in support of several forest sector activities over the past decade, the potential of the relationship between the World Bank, IFC, and MIGA has been underexploited.

With IFC's global expertise centralized in a dedicated sector team in the Manufacturing and Services Department, knowledge sharing has improved and a more collaborative approach to Bank Group activities is now progressing. Examples include Bank-supported economic and sector work and FLEG initiatives (including Forest Investment Forums). These have contributed to: (i) an enabling environment for private investment into forestry; (ii) participation of Bank forestry staff in IFC appraisal missions and vice versa; (iii) using catalytic funding provided by PROFOR and the WWF to facilitate IFC's Regional Development Facilities in supporting forest and wood-based small and medium enterprises to contribute to poverty alleviation; and (iv) involvement of the Global Forest and Trade Network of the World Bank-WWF Alliance to assist IFC in mitigating risks of their investments.

In several cases, sequencing — public sector support for a favorable business climate followed by private sector investments — has been a success factor in Bank Group forest sector interventions. In Uruguay, World Bank-supported policy reforms and investments in forest plantation areas enabled an IFC investment and a MIGA guarantee for the country's largest pulp mill. In China, Bank projects helped establish forest plantations that were then commercialized with IFC's support. Two projects in Leshan and Hubei achieved economic, financial, and environmental sustainability while also providing opportunities for smallholders. And in Nicaragua, IFC advisory services capitalized on the World Bank's support for indigenous land titling by connecting indigenous groups with an IFC forest-related investment. This operation was not fully successful, since the IFC client pulled out. However, a MIGA guarantee may have helped to keep the engagement alive if the risk insurance was made available to the other lender.

In Russia, the World Bank's support for decentralized forest policy and sector reform yielded few of its intended results. However, Bank support contributed to improvements in the enabling environment for private sector investment in the Russian forest products sector. IFC invested in six wood panel projects during the evaluation period. Russia is among IFC's top client countries during the evaluation period, and illustrates well the synergies that can exist between the World Bank and IFC in the sector. However, it may be noted that five of the six investments were made in the 2003–05 period and the sixth in 2008, a repeat investment with an existing client. There have been no new IFC investments in the sector since 2008, reflective of the continuing difficulties in the forest products sector in Russia.

The Bank Group has also missed opportunities to take advantage of synergies in a way that would enhance development impact. In the state of Para, Brazil, for example, the Bank and IFC had highly complementary operations — efforts to develop georeferencing and cadastral mapping as the basis of monitoring and enforcement of licensing and sustainable management plans in agriculture on the Bank side, and efforts to develop sustainable supply chain for a major beef operation financed by IFC. Links between the two operations could have enhanced the chances of success for the IFC investment and could have contributed to the relevance of the Bank operation had there been more cooperation between the two institutions.

The Bank and IFC also missed an opportunity in China's Guangxi province where both had operations in forestry and where a difficult land acquisition process for the private company slowed project implementation and created reputational risks for the Bank Group.

5. Conclusions and Recommendations

Conclusions on the Implementation of the 2002 Forest Strategy

The World Bank Group has supported its member countries and the private sector in balancing competing demands on their forest resources and managing them for sustainable development by putting in place a revised strategy that put poverty alleviation and economic development on equal footing with conservation. This shift better aligned the forest sector with the overall mission and comparative advantage of the World Bank Group.

It was a bold move given the risks and trade-offs involved in balancing the three objectives, especially with regard to re-engaging in productive activities in the tropical moist forest space. The strategy recognized these risks, as well as the trade-offs and tensions, between the three strategic pillars. It reflected a belief that, with proper safeguards and measures, the Bank Group would be positioned to manage the trade-offs and tensions and thus realize the potential of forests for growth and poverty reduction.

This evaluation found that although perceived synergies and inherent trade-offs were recognized across all of the forest-related interventions, the Bank Group's record in managing the trade-offs and tensions between conservation, poverty alleviation, and growth objectives shows that expectations, as envisioned by the 2002 Strategy, have not yet been met.

The World Bank Group's forest interventions have contributed substantially to positive environmental outcomes. However, poverty reduction, for the most part, has not been satisfactorily addressed. Forest projects that promote participatory forest management have been the most successful at balancing poverty reduction, livelihoods and environmental aims (with efforts to link forest products to market), but this integration is lacking in other sector interventions.

IFC's investments are creating jobs, helping forest companies produce higher value-added products, increasing productivity and production capacity, and fostering outgrower schemes. There have been stepped-up efforts by IFC at supporting sustainability along the supply chain, but the record indicates continued challenges in achieving certification and ensuring sustainable forest management. And despite the reorientation of the strategy and the operational safeguards that were put in place, there have been negligible outcomes in managing natural forests in a socially and environmentally sustainable way.

The World Bank has been able to adapt the partnership structure and focus of work within the partnerships to the changing context of the global forest-related priorities and dialogue. The Bank has also had a major role in shaping these priorities. Broadening the partnership approach toward other land-based sectors and commodities has been important given the increasing importance of extra-sectoral factors as drivers of deforestation and forest degradation.

The evolution of the partnerships toward holistic landscape-level approaches that combine forest conservation and sustainable forest management with climate change mitigation and adaptation, improved food security and climate smart agricultural development are important achievements. The Bank's efforts to integrate broader governance concerns and issues, including the efforts to protect and enhance the rights of indigenous forest-dependent communities, into these approaches are also recognized as important achievements. However, the Bank partnership approach is not well integrated with IFC.

In a few cases, World Bank Group cooperation has facilitated effective economic outcomes in the forest sector. The World Bank Group has been particularly effective when the Bank's work to help countries lower barriers to private sector entry has been combined with IFC and MIGA support to catalyze sustainable investments in the forest sector. Action on such complementary services was found in China, Nicaragua, Russia, and Uruguay – but nowhere else.

The monitoring and reporting systems of the World Bank forest sector operations are inadequate to verify whether its operations are supporting forest management in an environmentally and socially sustainable way, in line with the 2002 Strategy and the Bank Group's Operational Policies. Environmental indicators used in forest projects are mainly process or effort measures (such as the number of hectares planted, or the numbers of hectares under management plans).

Most indicators of poverty alleviation were less direct than is desirable both for accurately assessing project outcomes and for comparison across projects. Poverty reduction indicators such as numbers of productive investments made are imperfect measures of whether programs are reaching the most vulnerable members of a community. To varying degree, World Bank, IFC, and MIGA projects often assumed, without verification, that benefits would accrue to the poor within targeted areas, rather than to community members with more wealth or power. Several of IFC's downstream Forest Sector investments cannot be evaluated from a sustainable forest management perspective because information regarding chain-of-custody of the wood products sources is lacking.

Recommendations

The findings of this report suggest several recommendations that can help improve the effectiveness of Bank Group support for sustainable forest management.

Operational Effectiveness

- ❖ **Enhance the effectiveness of Bank Group efforts to protect vital local and global environmental services and values by building more meaningful community participation into design and management of protected areas.**

The Bank Group may consider the following actions: (i) include communities in the design of new or expanded protected areas, and in decision-making about management of those areas, assisting with expanded tenure and resource security where applicable, and use innovative techniques to monitor biodiversity; (ii) assess the welfare and livelihoods of persons living in and around a protected area system and use resettlement instruments to mitigate any potential negative impacts caused by the project intervention; (iii) include in project preparation an assessment of land ownership and use claims, including but not limited to, customary and traditional land claims; (iv) grazing, harvesting, farming, and transit rights; (v) access to fuel sources and fodder; and; (vi) assess the contribution of forest resources to household security.

- ❖ **Expand support for participatory forest management with help to level the playing field for community-based forest enterprises by working with clients to improve regulations and procedures and integrate small-scale informal forestry activities.**

This can be supported with analytic work (with clear dissemination strategies), development policy lending, IFC investment and advisory services, and by the incorporation of regulatory issues in project indicators.

- ❖ **Undertake and disclose a comprehensive review of the economic, environmental and social outcomes associated with World Bank support for industrial timber concession reforms in tropical moist forest countries with weak governance, including an analysis of the outcomes that could be achieved under alternative land-use schemes. Based on the evidence, determine whether and how the World Bank Group can realistically support effective sustainable forest management in tropical moist forest countries.**

- ❖ **Provide guidance and actively encourage staff to develop and utilize sustainable forest management outcome indicators that can adequately track progress across the three pillars – including indicators that can track attendant tensions and trade-offs in the forest landscape.**

The World Bank forest sector operations are inadequate to verify whether its operations are supporting forest management in an environmentally and socially sustainable way, in line with the 2002 Strategy and the Bank Group's Operational Policies. Environmental indicators used in forest projects are mainly process or effort measures (for example, number of hectares planted, or numbers of hectares under management plans). Most poverty alleviation indicators were less direct indicators of poverty than is desirable both for accurately assessing project outcomes and for comparison across projects. Poverty reduction indicators, such as numbers of productive investments made, are imperfect measures of whether programs are reaching the most vulnerable members of a community. Several of IFC's downstream Forest Sector projects cannot be evaluated from a sustainable forest management perspective because information regarding chain-of-custody of the wood products sources is lacking.

- ❖ **Target IFC's downstream investments and MIGA's support toward firms that can have a catalytic effect on generating greater demand for and supply of sustainable forest products. Make traceability a priority in IFC Forest Product Sector Investments, and associated MIGA guarantees both up and downstream.**

IFC's Forest Product Sector portfolio has been dominated by downstream investments, with a small share of investments in primary production. Investments in downstream processing of forest and wood products are highly relevant to sustainable forest management when targeted to create demand for certified supplies upstream.

Strategic Alignment

- ❖ **Use the upstream experience gained by IFC's advisory and investment operations to mitigate project risks and assist with community and company relations as IFC moves its investments upstream. Adjust skills accordingly.**

As IFC seeks to move its investments upstream – as envisioned in its 2010 Strategy Update - there are several lessons that can be learned from its previous operations with regard to land and resource rights and claims and stakeholder engagement. In particular, linking IFC's Advisory Services with investments, can help in mitigating social risks and enhance development results.

- ❖ **Develop mechanisms and instruments between the Bank, IFC and MIGA – such as joint action plans, coordinated business development and integrated product offerings – in strategically important countries to offer a well-sequenced package of forest-related products and services to clients. Make better use the synergies between the public and private sector arms of the World Bank Group.**

Depending on country circumstances, opportunities for synergies exist in such areas as: (i) mobilization of private funds for conservation, including by encouraging private investment in sustainable tourism and markets for eco-friendly products; (ii) potential combination of Bank policy reform and IFC/MIGA support to catalytic investments with demonstration effects; (iii) certification and industry standards for biodiversity-friendly business practices where experience shows that voluntary industry action can be effectively supported by government policies; and (iv) REDD/carbon finance agenda where pilot investments supported by IFC can complement the policy-level work led by the Bank and its forest-related partnerships.

Appendix A

The World Bank Group Forest Portfolio

Table A-1. World Bank Forest Projects; FY2003–2011 (Includes Additional Finance and Supplemental)

**Note: Empty designation in Direct Forest Lending refers to projects which were mapped to sectors other than the Forest sector.*

Project ID	Project Name	Country	Sector Code	Prod Line	Region	Approval FY	Status	IBRD+IDA+ Grant Amount in US\$M	
								Direct Forest*	Total Number of Projects
P077371	3A-GEF Climate Impacts on Agro-Eco (FY03)	Africa	Direct Forest	GEF Med Size	AFR	2003	Closed	0.21	0.7
P064573	3A-GEF Senegal River Basin (FY04)	Africa	Other Sectors	GEF	AFR	2004	Closed		5.3
P093806	3A-Niger Basin Water Resources	Africa	Other Sectors	IBRD/IDA	AFR	2008	Active		186
P097136	3A-GEF N/S Tourism Corri(FY08)	Africa	Other Sectors	GEF Med Size	AFR	2008	Closed		0.5
P100406	3A-Lake Victoria Phase II APL 1 (FY09)	Africa	Direct Forest	IBRD/IDA	AFR	2009	Active	18.9	90
P111330	3A- EN Watershed Management (SIP)	Africa	Direct Forest	GEF	AFR	2009	Active	1.74	8.7
P121908	3A: CAADP MDTF: AUC Child Trust Funds	Africa	Direct Forest	Recipient Executed A	AFR	2011	Active	0.8	4
P121899	3A: CAADP MDTF: COMESA Child Trust Fund	Africa	Direct Forest	Recipient Executed A	AFR	2011	Active	0.9	4.5
P121913	3A: CAADP MDTF: ECCAS Child Trust Fund	Africa	Direct Forest	Recipient Executed A	AFR	2011	Active	0.78	3.9
P121914	3A: CAADP MDTF: NPCA Child Trust Fund	Africa	Direct Forest	Recipient Executed A	AFR	2011	Active	0.7	3.5
P121915	3A:CAADP MDTF: CMA/WCA Child Trust Fund	Africa	Direct Forest	Recipient Executed A	AFR	2011	Closed	0.22	1.1
P118316	3A-Lake Victoria Phase II, APL 2	Africa	Other Sectors	IBRD/IDA	AFR	2011	Active		30
P108879	3A-Nyika Transfrontier Conserv.	Africa	Other Sectors	GEF	AFR	2011	Active		4.8
P119952	3A:SPWA-Scaling up of Impacts BD Consv	Africa	Other Sectors	GEF Med Size	AFR	2011	Active		0.9
P089061	NATURAL RES DEVT (GEF)	Albania	Direct Forest	GEF	ECA	2005	Closed	1.55	5
P082375	NATURAL RES DEVT	Albania	Direct Forest	IBRD/IDA	ECA	2005	Closed	3.43	7
P101708	GEF ENAB ACTS - ASSMT OF CAP BLDG TA	Albania	Direct Forest	Recipient Executed A	ECA	2005	Closed	0.32	0.3
P091145	AFFORSTN & REFORSTN (BIOCBF)	Albania	Direct Forest	Carbon Offset	ECA	2007	Active	0.52	1
P067605	DZ-URBAN NATURAL HAZARD VULNERABILITY	Algeria	Direct Forest	IBRD/IDA	MNA	2003	Closed	0.88	88.5

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								Direct Forest*	Total Number of Projects
P076784	DZ-Second Rural Employment Project	Algeria	Direct Forest	IBRD/IDA	MNA	2003	Closed	33.25	95
P098248	6A GEF-Adaptation to the Impact of Glaci	Andean Countries	Direct Forest	GEF	LAC	2008	Active	0.3	7.5
P119725	6A (AF) Adaptation in the Tropical Andes	Andean Countries	Direct Forest	GEF	LAC	2010	Active	0.02	0.5
P094425	AR GEF Biod.Conserv in Prod. Forestry	Argentina	Direct Forest	GEF	LAC	2007	Active	3.5	7
P108744	AR Eco-regional Corridor in N. Patagonia	Argentina	Direct Forest	GEF Med Size	LAC	2007	Closed	0.18	0.2
P108745	AR Upper Parana Atlantic Forest Restortn	Argentina	Direct Forest	GEF Med Size	LAC	2007	Closed	0.05	0.1
P100806	AR Sustainable Natural Res Mgt	Argentina	Direct Forest	IBRD/IDA	LAC	2008	Active	16.2	60
P078673	PRSC	Armenia	Other Sectors	IBRD/IDA	ECA	2005	Closed		20
P093459	PRSC 2	Armenia	Other Sectors	IBRD/IDA	ECA	2006	Closed		20
P093460	PRSC 3	Armenia	Other Sectors	IBRD/IDA	ECA	2007	Closed		28
P109572	IDF-FOREST MONITORING	Armenia	Direct Forest	IDF	ECA	2008	Closed	0	0
P101486	PRSC 4	Armenia	Direct Forest	IBRD/IDA	ECA	2008	Closed	2.59	18.5
P112108	Tiger Futures	Asia	Other Sectors	GEF Med Size	Other	2009	Closed		1
P077031	RURAL ENVIRONMENT (GEF)	Azerbaijan	Direct Forest	GEF	ECA	2005	Closed	1	5
P066199	RURAL ENVIRONMENT	Azerbaijan	Direct Forest	IBRD/IDA	ECA	2005	Closed	1.6	8
P078216	BZ-Community Managed Sarstoon Temash MSP	Belize	Other Sectors	GEF Med Size	LAC	2003	Closed		0.8
P072003	BJ-PRSC 1	Benin	Direct Forest	IBRD/IDA	AFR	2004	Closed	2	20
P069896	BJ-GEF Forests & Adjcnt Lnds Mgmt (FY06)	Benin	Direct Forest	GEF	AFR	2006	Active	5.88	6
P115963	BJ-Support to Protected Areas Management	Benin	Direct Forest	GEF	AFR	2011	Active	1.2	1.9
P122419	BJ-Support to Protected Areas Manag. Pro	Benin	Direct Forest	IBRD/IDA	AFR	2011	Active	3.35	5
P087039	BT: Sustainable Land Management	Bhutan	Other Sectors	GEF	SAR	2006	Active		7.7
P070338	GM BO PROMETA Strength of Prive Protect	Bolivia	Other Sectors	GEF Med Size	LAC	2003	Closed		0.7
P101298	BO Participatory Rural Investment II	Bolivia	Other Sectors	IBRD/IDA	LAC	2008	Active		20
P079161	FOREST DEVT/CNSRV Technical Assistance	Bosnia and Herzegovina	Direct Forest	IBRD/IDA	ECA	2003	Closed	1.87	3.7
P101641	FOREST ADDT'L FINANCE	Bosnia and Herzegovina	Direct Forest	IBRD/IDA	ECA	2007	Closed	2.51	3.4

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Project ID	Project Name	Country	Sector Code	Prod Line	Region	Approval FY	Status	IBRD+IDA+ Grant Amount in US\$M	
								Direct Forest*	Total Number of Projects
P087094	FOREST & MTN PROT AREA (GEF)	Bosnia and Herzegovina	Direct Forest	GEF	ECA	2008	Active	1.7	3.4
P095617	NB Human Wildlife Coexistence Project	Botswana	Other Sectors	GEF	AFR	2010	Active		5.5
P075871	BR PCF MINAS GERAIS PLANTAR PROJECT	Brazil	Direct Forest	Carbon Offset	LAC	2003	Active	0	0
P058503	BR GEF Amazon Region Prot Areas (ARPA)	Brazil	Other Sectors	GEF	LAC	2003	Closed		30
P093594	Support to Atlantic Forest NGO Network	Brazil	Direct Forest	Rainforest	LAC	2005	Closed	0.56	0.9
P088009	BR GEF-Sao Paulo Riparian Forests	Brazil	Direct Forest	GEF	LAC	2005	Closed	0.78	7.8
P066536	BR BONITO/RIO MIMOSA WTRSHD	Brazil	Other Sectors	GEF Med Size	LAC	2005	Closed		0.7
P068730	Science and Technology Subprogram Phase2	Brazil	Other Sectors	Rainforest	LAC	2005	Closed		0.7
P077047	Mata Atlantica Subprogram (FAO)	Brazil	Other Sectors	Rainforest	LAC	2005	Closed		0.8
P075379	BR GEF-RJ Sust IEM in Prod Landscapes	Brazil	Other Sectors	GEF	LAC	2005	Closed		6.7
P080829	BR 1st. PRL for Environmental Sustainab.	Brazil	Other Sectors	IBRD/IDA	LAC	2005	Closed		502.5
P066537	BR SC TABULEIRO ST. PAR	Brazil	Other Sectors	GEF Med Size	LAC	2006	Closed		0.7
P097327	Support to Pilot Program Coordination	Brazil	Other Sectors	Rainforest	LAC	2006	Closed		0.9
P069671	PPG7 Coordination	Brazil	Other Sectors	Rainforest	LAC	2006	Closed		1
P090041	BR ENVIRONMENTAL SUST. AGENDA TAL	Brazil	Other Sectors	IBRD/IDA	LAC	2006	Closed		8
P104346	BR Strengthen Amazon Initiative Consort	Brazil	Direct Forest	IDF	LAC	2007	Closed	0	0
P104640	BR COIAB Institutional Development	Brazil	Direct Forest	Rainforest	LAC	2007	Closed	0.25	0.3
P104639	BR GTA Institutional Development	Brazil	Direct Forest	Rainforest	LAC	2007	Closed	0.5	0.5
P070867	BR GEF Caatinga Conserv. and Sust. Mngmt	Brazil	Other Sectors	GEF	LAC	2007	Active		10
P094715	BR GEF National Biod Mainstreaming	Brazil	Direct Forest	GEF	LAC	2008	Active	5.5	22
P097322	Amazon Cartographic Base	Brazil	Other Sectors	Rainforest	LAC	2008	Closed		4.5
P111940	RMA Capacity Building and Institutional	Brazil	Direct Forest	Rainforest	LAC	2009	Closed	0.26	0.3
P095205	BR 1st Prog. DPL for Sust. Env Mgmt	Brazil	Direct Forest	IBRD/IDA	LAC	2009	Closed	299	1300
P094233	BR GEF Espirito Santo Biodiversity	Brazil	Other Sectors	GEF	LAC	2009	Active		4
P107146	BR Acre Social Economic Inclusion Sust D	Brazil	Other Sectors	IBRD/IDA	LAC	2009	Active		120

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Project ID	Project Name	Country	Sector Code	Prod Line	Region	Approval FY	Status	IBRD+IDA+ Grant Amount in US\$M	
								Direct Forest*	Total Number of Projects
P121671	BR (APL2)GEF Cerrado Init.:Goias& ICMBio	Brazil	Other Sectors	GEF	LAC	2010	Active		6
P091827	BR GEF Sust. Cerrado Initiative	Brazil	Other Sectors	GEF	LAC	2010	Active		7
P101508	BR-RJ Sustainable Rural Development	Brazil	Other Sectors	IBRD/IDA	LAC	2010	Active		39.5
P099469	BR (APL2) 2nd National Environmental	Brazil	Other Sectors	IBRD/IDA	LAC	2010	Active		24.3
P120490	BR Degraded Areas in the Amazon	Brazil	Direct Forest	Rainforest	LAC	2011	Closed	0.55	0.7
P096337	BR AES-Tiete Reservoirs Riparian Forests	Brazil	Direct Forest	Carbon Offset	LAC	2011	Active	3.92	4.9
P120523	BR Rural Environmental Cadastre	Brazil	Other Sectors	Rainforest	LAC	2011	Closed		3.5
P120228	IDF-FORESTRY	Bulgaria	Direct Forest	IDF	ECA	2010	Active	0	0
P070871	BF-GEF Sahel Lowland Ecosys Mgmt (FY04)	Burkina Faso	Other Sectors	GEF	AFR	2004	Closed		4.5
P125542	BF:FIP Investment Strategy	Burkina Faso	Direct Forest	Recipient Executed A	AFR	2011	Active	0.25	0.3
P085981	BI-GEF Agr Rehab & Supt (FY05)	Burundi	Other Sectors	GEF	AFR	2005	Closed		5
P084890	Cameroon - SAC III (Cr. 3102-5 CM)	Cameroon	Direct Forest	IBRD/IDA	AFR	2003	Closed	0.6	3.3
P070656	CM-Forestry & Env DPL (FY06)	Cameroon	Direct Forest	IBRD/IDA	AFR	2006	Closed	9	25
P073020	CM GEF Forest & Env DPL (FY06)	Cameroon	Direct Forest	GEF	AFR	2006	Closed	3.5	10
P090731	6R-GEF-Impl. of Adaptation Measures	Caribbean	Other Sectors	GEF	LAC	2007	Closed		2.1
P102576	Development Policy Operation DPO I FY07	Central African Republic	Direct Forest	IBRD/IDA	AFR	2007	Closed	4.1	82
P106458	CAR: EMGRG 1 - DPO II (FY08)	Central African Republic	Direct Forest	IBRD/IDA	AFR	2008	Closed	1.58	7.9
P113176	CAR: EMGRG II - DPO III (FY09)	Central African Republic	Direct Forest	IBRD/IDA	AFR	2009	Closed	0.25	5
P120534	CAR: EMGRG III DPO IV (FY11)	Central African Republic	Direct Forest	IBRD/IDA	AFR	2011	Closed	1.06	8.8
P075219	6C GEF Integ Mgt. Indigenous Communities	Central America	Other Sectors	GEF	LAC	2005	Closed		4
P085488	6C GEF Corazon Transboundary Reserve	Central America	Direct Forest	GEF	LAC	2006	Active	2.64	12
P107572	FLEG Central America	Central America	Direct Forest	Recipient Executed A	LAC	2008	Closed	0.44	0.4
P104670	TIEN SHAN ECO DEVT	Central Asia	Direct Forest	GEF	ECA	2010	Closed	1.04	3.4
P078138	TD:GEF Com Based Ecosys Mgmt (FY05)	Chad	Other Sectors	GEF	AFR	2005	Closed		6
P111918	CL SIF Forest Carbon	Chile	Direct Forest	Carbon Offset	LAC	2011	Active	2.4	2.4

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Project ID	Project Name	Country	Sector Code	Prod Line	Region	Approval FY	Status	IBRD+IDA+ Grant Amount in US\$M	
								Direct Forest*	Total Number of Projects
P090649	CN-CF-Facilitating Afforestation Program	China	Direct Forest	Carbon Offset	EAP	2006	Active	2	2
P084742	CN-IAIL III	China	Direct Forest	IBRD/IDA	EAP	2006	Closed	10	200
P081255	CN-Changjiang/Pearl River Watershed Reha	China	Direct Forest	IBRD/IDA	EAP	2006	Closed	23	100
P088964	CN-Guangxi Integrated Forestry Dev	China	Direct Forest	IBRD/IDA	EAP	2007	Active	94	100
P105229	CN-GEF-SCCF-Mainstream'g Clim Chnge Adap	China	Direct Forest	GEF	EAP	2008	Closed	0.3	5
P105958	CN-CF-Guangxi ReforDegrd Land(BioCFT2W1)	China	Direct Forest	Carbon Offset	EAP	2009	Active	0	0
P112759	CN-Shandong Ecological Afforestation	China	Direct Forest	IBRD/IDA	EAP	2010	Active	48	60
P101844	CN-GEF-Sust Dev in Poor Rural Areas	China	Other Sectors	GEF	EAP	2010	Active		4.3
P110661	CN-Lake Aibi Conservation	China	Direct Forest	GEF	EAP	2011	Active	0.45	3
P105872	CN-Integrated Forestry Development	China	Direct Forest	IBRD/IDA	EAP	2011	Active	95	100
P091932	CO GEF National Protected Areas Trust Fund	Colombia	Other Sectors	GEF	LAC	2006	Active		15
P098615	CO San Nicolas Reforestation	Colombia	Direct Forest	Carbon Offset	LAC	2007	Active	3.79	4.7
P104687	CO Mainstreaming Sust. Cattle Ranching	Colombia	Other Sectors	GEF	LAC	2010	Active		7
P081850	Drc Emergency Economic And Social Reunification Support Project	Congo, Democratic Republic of	Other Sectors	IBRD/IDA	AFR	2004	Closed		214
P091990	DRC - Transitional Support Credit (DPL)	Congo, Democratic Republic of	Direct Forest	IBRD/IDA	AFR	2006	Closed	13.5	90
P100620	DRC- Forest and Nature Conservation SIL	Congo, Democratic Republic of	Direct Forest	IBRD/IDA	AFR	2009	Active	17.28	64
P111621	DRC:Rehab&Particip Mgt of KeyProt. area	Congo, Democratic Republic of	Direct Forest	GEF	AFR	2009	Active	1.92	6
P083813	DRC-GEF National Parks (FY09)	Congo, Democratic Republic of	Other Sectors	GEF	AFR	2009	Active		7
P096414	DRC IBI Carbon Sink Bateke (FY10)	Congo, Democratic Republic of	Direct Forest	Carbon Offset	AFR	2010	Active	3.2	4
P126214	DRC-FIP Investment Plan Preparation Gran	Congo, Democratic Republic of	Direct Forest	Recipient Executed A	AFR	2011	Active	0.25	0.3
P083627	CG-Econ Recovery Credit ERL (FY05)	Congo, Republic of	Direct Forest	IBRD/IDA	AFR	2005	Closed	1.8	30
P094155	CR Coopeagri Project	Costa Rica	Direct Forest	Carbon Offset	LAC	2006	Active	0.8	0.8

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Project ID	Project Name	Country	Sector Code	Prod Line	Region	Approval FY	Status	IBRD+IDA+ Grant Amount in US\$M	
								Direct Forest*	Total Number of Projects
P098838	CR GEF Mnstreamg Market-Based Instrumnt	Costa Rica	Direct Forest	GEF	LAC	2006	Active	3	10
P093384	CR -Mainstreaming Market-Based Instrumnt	Costa Rica	Direct Forest	IBRD/IDA	LAC	2006	Active	21	30
P111290	RCI-GEF Protected Area Project (PARC)	Cote d'Ivoire	Direct Forest	GEF	AFR	2009	Active	1.27	2.5
P111205	EU NATURA 2000	Croatia	Direct Forest	IBRD/IDA	ECA	2011	Active	14.69	28.8
P066752	EC GEF NT PARKS/BIODIVER II	Ecuador	Other Sectors	GEF	LAC	2003	Closed		8
P057034	GM EC BIODIV.CONSERV IN PASTAZA	Ecuador	Other Sectors	GEF Med Size	LAC	2003	Closed		0.8
P064910	SV Environmental Services Project	El Salvador	Other Sectors	IBRD/IDA	LAC	2005	Closed		5
P092202	Protected Areas Consolidation and Admin	El Salvador	Other Sectors	GEF	LAC	2006	Closed		5
P049395	ET-Energy Access SIL (FY03)	Ethiopia	Direct Forest	IBRD/IDA	AFR	2003	Active	6.64	132.7
P098428	ET-Humbo and Soddo Carbon Project (FY06)	Ethiopia	Direct Forest	Carbon Offset	AFR	2008	Active	0	0
P107139	ET-Sustainable Land Mngt SIL (FY08)	Ethiopia	Other Sectors	IBRD/IDA	AFR	2008	Active		20
P096323	ET-Tana and Beles Int. Wat Res Dev Project	Ethiopia	Other Sectors	IBRD/IDA	AFR	2008	Active		45
P112778	ENA-FLEG Regional Grant - IUCN	Europe and Central Asia	Direct Forest	Recipient Executed A	ECA	2009	Closed	2.63	3.8
P112777	ENA-FLEG Regional Grant – WWF	Europe and Central Asia	Direct Forest	Recipient Executed A	ECA	2009	Closed	1.05	1.5
P070196	GA-Natural Res Mgmt DPL (FY06)	Gabon	Direct Forest	IBRD/IDA	AFR	2006	Closed	7.5	15
P070232	GA-Strengthening Cap. for Manag. NP&B	Gabon	Direct Forest	GEF	AFR	2006	Active	6.5	10
P115585	GM: Strength. Integrated Biodiv. Mngmt	Gambia, The	Direct Forest	GEF Med Size	AFR	2011	Active	0.33	1
P044800	FORESTRY	Georgia	Direct Forest	IBRD/IDA	ECA	2003	Closed	6.44	15.7
P085734	GH-GEF Com Based Integ NRM (FY04)	Ghana	Other Sectors	GEF Med Size	AFR	2004	Closed		0.8
P102971	GH-Environmental Governance (FY07)	Ghana	Direct Forest	IBRD/IDA	AFR	2008	Closed	5.8	20
P103631	GH-PRSC 6 DPL (FY08)	Ghana	Direct Forest	IBRD/IDA	AFR	2008	Closed	10	100
P113172	GH-NREG DPO	Ghana	Direct Forest	IBRD/IDA	AFR	2009	Closed	3.3	10
P118188	GH:Natural Resources Env Governance DPO3	Ghana	Direct Forest	IBRD/IDA	AFR	2010	Closed	4	10
P070677	GT GEF Bio Itza Maya Community Mgt	Guatemala	Other Sectors	GEF Med Size	LAC	2003	Closed		0.8

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								Direct Forest*	Total Number of Projects
P064883	GT WESTERN ALTIPLANO NRM	Guatemala	Other Sectors	IBRD/IDA	LAC	2003	Closed		32.8
P081297	GN-GEF CB Land Mgmt SIL (FY06)	Guinea	Other Sectors	GEF	AFR	2006	Active		7
P065129	GN-APL2 Village Comm Supp Program	Guinea	Other Sectors	IBRD/IDA	AFR	2008	Active		17
P114756	GW:GEF Biodiversity Conservation Trust Fund	Guinea-Bissau	Other Sectors	GEF Med Size	AFR	2011	Active		1
P122047	GuineaBissau Biodiversity Conservation	Guinea-Bissau	Other Sectors	IBRD/IDA	AFR	2011	Active		2
P064914	HN FORESTS & RURAL PRODUCTIVITY	Honduras	Direct Forest	IBRD/IDA	LAC	2004	Closed	10	20
P055991	HN LAND ADMINISTRATION PROGRAM	Honduras	Other Sectors	IBRD/IDA	LAC	2004	Closed		25
P074758	HN PRSC	Honduras	Other Sectors	IBRD/IDA	LAC	2004	Closed		58.8
P092987	HN Pico Bonito Reforestation	Honduras	Direct Forest	Carbon Offset	LAC	2006	Closed	0	0
P106680	HN (APL2) Land Administration	Honduras	Direct Forest	IBRD/IDA	LAC	2011	Active	0.33	32.8
P073094	AP Comm Forest Mgmt	India	Direct Forest	IBRD/IDA	SAR	2003	Closed	71.28	108
P078550	IN: Uttar Wtrshed	India	Other Sectors	IBRD/IDA	SAR	2004	Closed		69.6
P077856	IN: Lucknow-Muzaffarpur National Highway	India	Direct Forest	IBRD/IDA	SAR	2005	Closed	6.2	620
P093720	IN: Mid-Himalayan (HP) Watersheds	India	Other Sectors	IBRD/IDA	SAR	2006	Active		60
P095901	IN: BioCarbon-Livelihoods Project	India	Direct Forest	Carbon Offset	SAR	2007	Active	1	1
P112060	IN: National Agricultural Innovation and SLM	India	Other Sectors	GEF	SAR	2010	Active		7.3
P112061	IN: Uttarakhand Watershed Mgmt. SLEM	India	Other Sectors	GEF	SAR	2010	Active		7.5
P088598	IN: Biodiver Cons & Rural Livelihoods	India	Direct Forest	GEF	SAR	2011	Active	7.65	8.1
P088520	IN: Biodiver Cons & Rural Livelihood	India	Direct Forest	IBRD/IDA	SAR	2011	Active	10.6	15.4
P124354	IN: Uttarakhand Decentral. Watershed-AF	India	Direct Forest	IBRD/IDA	SAR	2011	Closed	2	8
P076739	ID FORESTS AND MEDIA PROJECT	Indonesia	Direct Forest	GEF Med Size	EAP	2003	Closed	0.94	0.9
P083007	ID Buton Island Forest Conservation	Indonesia	Direct Forest	GEF Med Size	EAP	2005	Closed	1	1
P092480	ID Policy Reform,Cap.Bldg&Dev of Info.	Indonesia	Direct Forest	Recipient Executed A	EAP	2005	Closed	0.25	0.3
P098052	ID - Aceh Forest and Environment Project	Indonesia	Direct Forest	Recipient Executed A	EAP	2006	Closed	20.57	20.57
P098308	ID-GM-Conservation of	Indonesia	Other	GEF Med	EAP	2008	Active		1

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								Direct Forest*	Total Number of Projects
	Aketajawe-Lolobata		Sectors	Size					
P121427	ID-TF Green PNPM Environmental Awareness	Indonesia	Direct Forest	Recipient Executed A	EAP	2010	Active	0.57	2.3
P120313	Indonesia Climate Change DPL	Indonesia	Other Sectors	IBRD/IDA	EAP	2010	Closed		200
P125019	ID-CPDA Community Ranger Program	Indonesia	Direct Forest	Recipient Executed A	EAP	2011	Active	0.52	2.6
P125020	ID-CPDA Local Capacity Research	Indonesia	Direct Forest	Recipient Executed A	EAP	2011	Active	0.11	0.5
P071170	IR - Alborz Integrated Land & Water Mgt	Iran, Islamic Republic of	Direct Forest	IBRD/IDA	MNA	2005	Active	2.4	120
P075534	JO-Integrated Ecosystems/Rift Valley	Jordan	Other Sectors	GEF	MNA	2007	Active		6.2
P078301	FORESTRY	Kazakhstan	Direct Forest	IBRD/IDA	ECA	2006	Active	25.5	30
P087485	FORESTRY (GEF) – KZ	Kazakhstan	Direct Forest	GEF	ECA	2006	Active	4.25	5
P078058	KE-Arid Lands 2 SIL (FY03)	Kenya	Other Sectors	IBRD/IDA	AFR	2003	Closed		60
P072981	KE-GEF W KE Int Ecosys Mgmt SIL (FY05)	Kenya	Other Sectors	GEF	AFR	2005	Closed		4.1
P099628	KE-Greenbelt Movement (FY07)	Kenya	Direct Forest	Carbon Offset	AFR	2007	Active	2.2	2.2
P095050	KE-NRM SIL (FY07)	Kenya	Direct Forest	IBRD/IDA	AFR	2007	Active	21.24	68.5
P088600	KE-GEF Ag Prd and Sust. Land Mgmt(KAPSLMP)	Kenya	Direct Forest	GEF	AFR	2011	Active	0.2	10
P107798	KE-Agricultural Carbon (FY09)	Kenya	Other Sectors	Carbon Offset	AFR	2011	Active		1
P064886	LA-SUSTAINABLE FORESTRY FOR RURAL DEV.	Lao People's Democratic Republic	Direct Forest	IBRD/IDA	EAP	2003	Closed	9.9	9.9
P075287	LA PRSC-1	Lao People's Democratic Republic	Direct Forest	IBRD/IDA	EAP	2005	Closed	0.4	10
P090693	Lao Environment and Social Project	Lao People's Democratic Republic	Direct Forest	IBRD/IDA	EAP	2005	Active	1	4
P080765	LA ECOSYSTEM AND WILDLIFE CONSERVATION	Lao People's Democratic Republic	Direct Forest	GEF Med Size	EAP	2005	Closed	0.91	0.9
P049290	LA - Nam Theun Social & Environment	Lao People's Democratic Republic	Other Sectors	IBRD/IDA	EAP	2005	Closed		20
P108505	LA-SUSTAINABLE FORESTRY II (additional finance to P064886)	Lao People's Democratic Republic	Direct Forest	IBRD/IDA	EAP	2009	Closed	4.7	10

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								Direct Forest*	Total Number of Projects
P116734	Lao Environment and Social Project AF	Lao People's Democratic Republic	Direct Forest	IBRD/IDA	EAP	2010	Active	0.75	3
P076740	LR-GEF Sapo Natl Park (FY05)	Liberia	Other Sectors	GEF Med Size	AFR	2006	Closed		1
P104287	LR-Development Forestry Sector (FY07)	Liberia	Direct Forest	Special Finc.	AFR	2007	Closed	0.9	2
P105830	LR-Establishment of Protected Areas (FY08)	Liberia	Direct Forest	GEF Med Size	AFR	2008	Active	0.75	0.8
P114580	Liberia: Protected Areas Network II	Liberia	Direct Forest	GEF Med Size	AFR	2011	Active	1	1
P074236	MG-GEF Env Prgm 3 (FY04)	Madagascar	Direct Forest	GEF	AFR	2004	Closed	9	9
P074235	MG-Env Prgm 3 (FY04)	Madagascar	Other Sectors	IBRD/IDA	AFR	2004	Active		40
P093721	MG-CF Bio-Diversity Corridor SIL (FY06)	Madagascar	Direct Forest	Carbon Offset	AFR	2007	Active	0.82	0.8
P108943	MG-Carbon Offset Avoided (FY08)	Madagascar	Direct Forest	Carbon Offset	AFR	2008	Active	1.5	1.5
P113976	MG-Additional Financing to EP3	Madagascar	Direct Forest	GEF	AFR	2011	Closed	10	10
P107484	MG-Additional Financing to EP3	Madagascar	Direct Forest	IBRD/IDA	AFR	2011	Active	33.18	42
P052402	GEF Gourma Biodiv Conserv SIL (FY05)	Mali	Other Sectors	GEF	AFR	2005	Active		5.5
P040653	ML-Rural Com. Dev. (PACR)	Mali	Other Sectors	IBRD/IDA	AFR	2006	Active		60
P074539	MX Programmatic EnvSAL	Mexico	Direct Forest	IBRD/IDA	LAC	2003	Closed	20.2	202
P035751	MX Community Forestry II (PROCYMAF II)	Mexico	Direct Forest	IBRD/IDA	LAC	2004	Closed	12.78	21.3
P079748	MX ENVDP II	Mexico	Direct Forest	IBRD/IDA	LAC	2006	Closed	20.05	200.5
P087038	MX Environmental Services Project	Mexico	Other Sectors	IBRD/IDA	LAC	2006	Closed		45
P106103	MX-SINAP II - Third Tranche -Add'l Fin	Mexico	Direct Forest	GEF	LAC	2007	Active	7.35	7.4
P110849	MX Climate Change DPL/DDO	Mexico	Direct Forest	IBRD/IDA	LAC	2008	Closed	125.31	501.3
P098732	MX GM Sacred Orchids of Chiapas	Mexico	Direct Forest	GEF Med Size	LAC	2008	Closed	0.5	0.8
P095510	MX Environmental Sustainability DPL	Mexico	Direct Forest	IBRD/IDA	LAC	2009	Closed	42.11	300.8
P115101	MX Supplement to Env Sustain. DPL	Mexico	Direct Forest	IBRD/IDA	LAC	2009	Closed	100.25	401
P112327	MX (Suppl) SINAP II - Fourth Tranche	Mexico	Direct Forest	GEF	LAC	2009	Active	5.44	5.4
P120134	MX Adapt. Climate Change in WtrSct DPL	Mexico	Direct Forest	IBRD/IDA	LAC	2010	Closed	72	450
P121800	MX MEDEC Low-Carbon DPL	Mexico	Direct Forest	IBRD/IDA	LAC	2011	Closed	100.25	401
P077763	SOIL CONSERVATION (PCF) (MD)	Moldova	Direct Forest	Carbon Offset	ECA	2004	Closed	5.18	5.2

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								Direct Forest*	Total Number of Projects
P075995	AG POLLUTION CONTROL (GEF)	Moldova	Direct Forest	GEF	ECA	2004	Closed	0.5	5
P100597	SOIL CONS. FOLLOW UP	Moldova	Direct Forest	Carbon Offset	ECA	2006	Active	2.48	2.5
P109459	Moldova Community Forestry Project	Moldova	Direct Forest	Carbon Offset	ECA	2009	Active	2	2
P071465	MZ-TFCA & Tourism Dev (FY06)	Mozambique	Other Sectors	IBRD/IDA	AFR	2006	Active		20
P073135	NA-GEF Intgrtd CB Ecosystem Mgmt (FY04)	Namibia	Other Sectors	GEF	AFR	2004	Closed		7.1
P125891	NP: Strengthening Capacity of DNPWC	Nepal	Direct Forest	IDF	SAR	2011	Active	0	0
P094154	NI Precious Woods Project	Nicaragua	Direct Forest	Carbon Offset	LAC	2006	Active	0	0
P087046	NI 2nd Agricultural Technology Project	Nicaragua	Direct Forest	IBRD/IDA	LAC	2006	Active	1.08	12
P115882	NI Indigenous & Afro-Descendants	Nicaragua	Direct Forest	Recipient Executed A	LAC	2009	Active	1.99	2
P065991	NE-Com Action Prgm (FY03)	Niger	Other Sectors	IBRD/IDA	AFR	2003	Closed		35
P105056	NE-IDF Results Based M&E (FY07)	Niger	Direct Forest	IDF	AFR	2007	Closed	0	0
P095346	NE-CF BIO CF Acacia Plantations (FY06)	Niger	Direct Forest	Carbon Offset	AFR	2007	Active	0.04	0.1
P069892	NG-Local Empowerment & Environmental Mgm	Nigeria	Other Sectors	IBRD/IDA	AFR	2004	Closed		70
P073686	NG-GEF Fadama 2 Crit Ecosys Mgmt (FY06)	Nigeria	Direct Forest	GEF	AFR	2006	Closed	2.31	10
P096648	NG-Commercial Agriculture Development	Nigeria	Other Sectors	IBRD/IDA	AFR	2009	Active		150
P109737	NG-Fadama III GEF-Sust. Land Mgmt. (SIP)	Nigeria	Other Sectors	GEF	AFR	2011	Active		6.8
P073267	OECS Protected Areas and Associated Live	OECS Countries	Other Sectors	GEF	Other	2004	Closed		3.7
P010556	PK: HIGHWAYS REHAB	Pakistan	Direct Forest	IBRD/IDA	SAR	2004	Active	4	200
P123311	PK: Highways Rehabilitation Project-AF	Pakistan	Direct Forest	IBRD/IDA	SAR	2011	Active	2.6	130
P083045	PA GEF Rural Productivity	Panama	Other Sectors	GEF	LAC	2006	Active		6
P064918	PA Rural Productivity (former 2nd Rur Po	Panama	Other Sectors	IBRD/IDA	LAC	2007	Active		39.4
P066225	PY MBARACAYU BIODIVERSITY	Paraguay	Other Sectors	GEF Med Size	LAC	2003	Closed		0.5
P068250	PE GEF PARTICIPATORY MGMT PROT AREAS	Peru	Direct Forest	GEF	LAC	2003	Closed	5.92	14.8
P095424	PE GEF Nat'l Protected Areas System	Peru	Other Sectors	GEF	LAC	2010	Active		8.9
P118713	PE 3rd Prog. Environmental DPL	Peru	Direct Forest	IBRD/IDA	LAC	2011	Closed	21.75	75
P094573	DROPPED PH-CF-Laguna de Bay Community Wa	Philippines	Direct Forest	Carbon Offset	EAP	2006	Closed	0	0

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								Direct Forest*	
P091147	PH-GEF-Nat. Prog. Suprt for Env and NRMP	Philippines	Direct Forest	GEF	EAP	2007	Active	1.05	7
P096174	PH-Nat'l Prog Supt for ENV and NRMP	Philippines	Direct Forest	IBRD/IDA	EAP	2007	Active	5	50
P096836	PH-GEF-Mindanao Rural Dev Prog Phase II	Philippines	Other Sectors	GEF	EAP	2010	Active		6.4
P067367	FOREST DEVT	Romania	Direct Forest	IBRD/IDA	ECA	2003	Closed	15	25
P075959	AFFORESTATION (PCF) - RO	Romania	Direct Forest	Carbon Offset	ECA	2004	Active	1.28	3.7
P070700	GEF Integr. Mgmt. of Critical Ecosystems	Rwanda	Other Sectors	GEF	AFR	2005	Closed		4.3
P105176	RW-Rural Sector Supt APL2 (FY08)	Rwanda	Other Sectors	IBRD/IDA	AFR	2008	Active		35
P114931	Land Husbandry, Water Harvest, Hill Irrigation	Rwanda	Other Sectors	IBRD/IDA	AFR	2010	Active		34
P124785	Rwanda Land, husbandry water harvesting	Rwanda	Other Sectors	Recipient Executed A	AFR	2011	Active		35
P070582	STP - Strategic Environmental Assessment	Sao Tome and Principe	Direct Forest	Recipient Executed A	AFR	2004	Closed	0.02	0.2
P083177	STP-Climate Change NAPA (FY06)	Sao Tome and Principe	Direct Forest	Recipient Executed A	AFR	2005	Closed	0.04	0.2
P107288	SN-DPO fast-track-Public Fin. Support Cr	Senegal	Direct Forest	IBRD/IDA	AFR	2009	Closed	6	60
P120629	SN-Second Sust. & Part. En. Mngt (SIL)	Senegal	Direct Forest	IBRD/IDA	AFR	2010	Active	5.25	15
P093545	TRANS AG REFORM (GEF)	Serbia	Other Sectors	GEF	ECA	2007	Active		4.5
P096105	SL-Rural Dev & Priv Sec Dev SIL	Sierra Leone	Other Sectors	IBRD/IDA	AFR	2007	Active		30
P094307	SL-GEF Biodiversity Conservation Project	Sierra Leone	Other Sectors	GEF	AFR	2010	Active		5
P064438	ZA-GEF Great Addo SIL (FY04)	South Africa	Other Sectors	GEF	AFR	2004	Closed		5.5
P075997	ZA-GEF CAPE Action Plan (FY04)	South Africa	Other Sectors	GEF	AFR	2004	Closed		9
P086528	ZA-GEF Isimangaliso Wetland Park	South Africa	Other Sectors	GEF	AFR	2010	Active		9
P126193	REG: Wildlife Protection Phase 2: Bhutan	South Asia	Other Sectors	IBRD/IDA	SAR	2011	Active		2.3
P121210	REG: Wildlife Protection: BD and NP	South Asia	Other Sectors	IBRD/IDA	SAR	2011	Active		39
P084608	NERETVA/TREBISNJICA RIVER BASIN GEF	South Eastern Europe and Balkans	Other Sectors	GEF	ECA	2008	Active		8
P104786	SD-Agriculture and Forestry Dev. ERL (FY07)	Sudan	Direct Forest	Recipient Executed A	AFR	2008	Closed	2	10
P081159	COMMTY AGRIC & WATERSHED MGMT (GEF)	Tajikistan	Direct Forest	GEF	ECA	2004	Closed	0.9	4.5
P082599	DASHTIDZHUM BIODIV CONS (GEF MSP)	Tajikistan	Other Sectors	GEF Med Size	ECA	2005	Closed		1

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								Direct Forest*	Total Number of Projects
P057234	TZ-GEF Eastern Arc Forests SIL (FY04)	Tanzania	Direct Forest	GEF	AFR	2004	Closed	6.72	7
P071100	TZ-GEF Wildlife and Livestock Utilz (FY05)	Tanzania	Direct Forest	GEF Med Size	AFR	2005	Closed	0.38	0.4
P090680	TZ-Lake Victoria Supplemental 2 (IDA)	Tanzania	Direct Forest	IBRD/IDA	AFR	2005	Closed	0.32	3.5
P105220	TZ-Lower Kihansi Env. Mngt SIL (FY07)	Tanzania	Other Sectors	IBRD/IDA	AFR	2008	Closed		3.5
P094948	TT Nariva carbon sequestration	Trinidad and Tobago	Direct Forest	Carbon Offset	LAC	2009	Active	1.82	2.6
P072317	TN-NW Mountainous and For. Areas Dev.	Tunisia	Other Sectors	IBRD/IDA	MNA	2003	Closed		34
P086660	TN-Second Natural Resources Management	Tunisia	Direct Forest	IBRD/IDA	MNA	2010	Active	3.25	36.1
P119140	TN-4th NW Mount and Forest Area Dev PNO4	Tunisia	Other Sectors	IBRD/IDA	MNA	2011	Active		41.6
P070950	ANATOLIA WATERSHED REHAB	Turkey	Other Sectors	IBRD/IDA	ECA	2004	Closed		20
P117651	ESES DPL2	Turkey	Direct Forest	IBRD/IDA	ECA	2010	Closed	70	700
P065437	UG-PAMSU SIL (FY03)	Uganda	Other Sectors	IBRD/IDA	AFR	2003	Closed		27
P097742	UG-Nile Basin Reforestation (FY06)	Uganda	Direct Forest	Carbon Offset	AFR	2006	Active	0	0
P111366	UG:EMCBP II Additional Finance	Uganda	Direct Forest	IBRD/IDA	AFR	2009	Active	3.6	15
P070653	UY Integr. Nat. Res. & Biodiveristy Mgmt	Uruguay	Direct Forest	IBRD/IDA	LAC	2005	Active	6	30
P068216	GM VE Biodiv Conserv-Dekhuna Nonoodo	Venezuela, Republica Bolivariana de	Other Sectors	GEF Med Size	LAC	2005	Closed		0.8
P059144	VN - GREEN CORRIDOR PROJECT	Vietnam	Direct Forest	GEF Med Size	EAP	2004	Closed	0.7	0.7
P068249	VN CHU YANG SIN	Vietnam	Direct Forest	GEF Med Size	EAP	2005	Closed	1	1
P074414	VN - GEF Forest Sector Development Proj	Vietnam	Direct Forest	GEF	EAP	2005	Active	9	9
P066051	VN - Forest Sector Development Project	Vietnam	Direct Forest	IBRD/IDA	EAP	2005	Active	39.5	39.5
P101724	Vietnam PRSC 6	Vietnam	Direct Forest	IBRD/IDA	EAP	2007	Closed	21	175
P105907	1W-First Stewards Fund GEF (FY07)	World	Direct Forest	GEF Med Size	Other	2008	Closed	0.13	0.3
P100198	1W-Critical Ecosystem Partnership Fund 2	World	Other Sectors	GEF	Other	2008	Active		20
P117956	SFM through Climate Change Mitigation	World	Direct Forest	GEF Med Size	Other	2010	Active	1	1
P126771	Forests in Adaptation to Climate Change	World	Direct Forest	Recipient Executed A	Other	2011	Active	0.39	0.6
P103922	RY:GEF Agrobiodiversity and Adaptation	Yemen, Republic of	Other Sectors	GEF	MNA	2010	Active		4
P071407	ZM-SEED (FY05)	Zambia	Other Sectors	IBRD/IDA	AFR	2005	Closed		28.2

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								Direct Forest*	
P108882	ZM-Kasanka & Lavushi Parks GEF (FY09)	Zambia	Other Sectors	GEF Med Size	AFR	2011	Active		0.8

Source: World Bank data.

Note: AFR= Africa Region; APL= Adaptable Program Loan; CAADP= Comprehensive African Agriculture Development Programme; CMA/WCA= Conference of Ministers of Agriculture of Western and Central Africa; COMESA= Common Market for Eastern and Southern Africa; DPL= Development Policy Loan; EAP= East Asia and Pacific; ECA= Europe and Central Asia; ECCAS= Economic Community of Central African States; FLEG=Forest Law Enforcement and Governance; GEF= Global Environment Fund; IBRD= International Bank for Reconstruction and Development; IDA= International Development Association; IDF= Institutional Development Fund; IFC= International Finance Corporation; LAC= Latin America and the Caribbean; MDTF= Multi-Donor Trust Fund; MNA= Middle East and North Africa; NGO= Non-governmental Organization; PRSC= Poverty Reduction Support Credit; SAC= Structural Adjustment Credit; SIL= Specific Investment Loan; SIP= Sector Investment Program; SLM= Sustainable Land Management; WWF= World Wildlife Fund.

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Table A-2. IFC Advisory Services (Active / Closed); FY2004–2011

Project ID	Project	Country	FY	Status	Level of Engagement
522350	CCF Sustainable Timber Trade	Africa Region	2004	Closed	Forestry
523467	Sustainable Wood Sector Supply Chain Improvement Methodology Project	Bolivia	2005	Closed	Manufacturing
542265	Wood Bolivia	Bolivia	2006	Closed	Forestry
537183	Wood Platform	Bosnia and Herzegovina	2005	Closed	Manufacturing
522777	Precious Woods Holding Ltd.	Brazil	2006	Closed	Manufacturing
570912	Alianca da Terra	Brazil	2010	Active	Forestry
583088	Acre Environmental Permits	Brazil	2012	Active	Forestry
589267	BR Amazon Forest Concessions	Brazil	2012	Active	Forestry
523129	TA Non-wood Pulp and Paper Industry Development	China	2005	Closed	Manufacturing
554206	Linkages: Stora Enso Guangxi	China	2007	Closed	Manufacturing
532419	EBGEF - Fundacion para el Desarrollo de la Cordillera Volcanica Central (FUNDECOR)	Costa Rica	2005	Closed	Forestry
569249	LK: Farm Forest I	India	2008	Active	Forestry
582027	Farm Forestry II (AP Paper, Bilt, JK Paper, WC Paper)	India	2010	Active	Forestry
579407	Husk Power (Biomass ESCO)	India	2011	Active	Forestry
530340	CCF PENSA Forest	Indonesia	2005	Closed	Manufacturing
523611	Sustainable Wood Program	Indonesia	2007	Closed	Manufacturing and Forestry
549329	Sustainable Forestry Indonesia	Indonesia	2007	Closed	Forestry
565611	Sustainable Forestry	Indonesia	2010	Active	Forestry
577827	Aceh Forestry	Indonesia	2011	Active	Forestry
542684	SRsp Bamboo Lao Supply Chain Study	Lao PDR	2006	Closed	Forestry
560626	Lao Bamboo	Lao PDR	2008	Closed	Forestry
534843	SGL - Printing Shop	Mozambique	2006	Closed	Manufacturing
522793	Strengthening Sustainable Wood Supply Chain in Nicaragua	Nicaragua	2005	Closed	Manufacturing
522794	Strengthening Wood Small and Medium Enterprises (SMEs) manufacturers links to international markets: Exchange I	Nicaragua	2005	Closed	Manufacturing
534763	Strengthening Wood SMEs manufacturer links to international markets: Exchange II	Nicaragua	2007	Closed	Manufacturing
542244	Wood Supply Chain	Nicaragua	2008	Closed	Forestry
575307	SMG Wood Supply	Nicaragua	2010	Terminated	Forestry
561696	Packages Waste Paper Linkages	Pakistan	2010	Active	Manufacturing
502501	Northwest Russia Forest Investment Project Phase II + Extension	Russian Federation	2005	Closed	Manufacturing and Forestry
522778	Global Forest Products (PTY) Limited	South Africa	2006	Closed	Manufacturing
534605	CT Turkey Market Assessment	Turkey	2005	Closed	Manufacturing
546764	Modern Karton	Turkey	2006	Closed	Manufacturing
534164	Ukraine Pulp and Paper Strategic Plan	Ukraine	2005	Closed	Manufacturing
533463	LKG - VN TH Bamboo	Vietnam	2005	Closed	Forestry

Project ID	Project	Country	FY	Status	Level of Engagement
533845	SRspThanh Hoa Bamboo Support Project	Vietnam	2005	Closed	Forestry
538143	Evaluation of Composite Panel Investment Potential in Vietnam	Vietnam	2006	Closed	Manufacturing
544904	AGR-VN BD Wood	Vietnam	2006	Closed	Manufacturing
553046	AGR-Vietnam Mekong Bamboo 2	Vietnam	2007	Closed	Forestry
523359	Biodiversity and Agricultural Commodities Program (BACP)	World Region	2005	Active	NA
545844	Eco-Securitization phase 2	World Region	2007	Closed	NA
550585	Business and Biodiversity Offsets Program	World Region	2008	Closed	NA
557585	Bio-Trade Program (Union for Ethical BioTrade (UEBT))	World Region	2008	Active	NA
561505	FPS Carbon Profile Measurement Model	World Region	2008	Closed	Manufacturing and Forestry
574128	LK: GMS Forestry	World Region	2010	Active	Manufacturing and Forestry

Source: IFC data.

Table A-3. IFC Investments; FY2003–2011

Project ID	Project Short Name	Country	Fiscal Year	Project Status	Sector
30573	SLV	Bolivia	2011	Active	A-DA - Natural Forests
11620	Satipel II	Brazil	2003	Closed	M-FC - Wood Panels and Engineered Wood Products
23271	Aracruz Corp.	Brazil	2005	Closed	J-AA - Pulp Mills
30951	Energia Floresta	Brazil	2011	Pending	A-DB- Plantation Forests
28501	Kronospan CEE-BG	Bulgaria	2010	Active	M-FC - Wood Panels and Engineered Wood Products
29084	Aubaine Graphic	Chad	2010	Active	J-AH - Other Paper Products
22417	Lignum Fund/SIF	Chile	2007	Active	A-DB- Plantation Forests
24202	Stora China	China	2005	Closed	J-AF - Other Paper (Including Multiple Types)
22165	Fenglin MDF	China	2006	Closed	M-FC - Wood Panels and Engineered Wood Products
22164	Chenming LWC	China	2006	Active	J-AH - Other Paper Products
25299	Fenglin HJ	China	2006	Closed	M-FC - Wood Panels and Engineered Wood Products
24907	Stora China-II	China	2006	Active	J-AF - Other Paper (Including Multiple Types)
25748	Nature Flooring	China	2008	Active	M-FC - Wood Panels and Engineered Wood Products
20932	Carvajal S.A.	Colombia	2004	Active	J-AG - Paper Packaging Products (Including Boxes, Cartons, etc.)
20721	Cartones America	Colombia	2004	Active	M-FD - Other Wood Products (excluding Furniture)
24696	Carvajal II	Colombia	2006	Active	J-AG - Paper Packaging Products (Including Boxes, Cartons, etc.)
25569	Cartones II	Colombia	2007	Active	J-AG - Paper Packaging Products (Including Boxes, Cartons, etc.)
27952	CAME CPLP	Colombia	2009	Active	M-FD - Other Wood Products (excluding Furniture)
11378	Belisce Exp.	Croatia	2003	Active	J-AA - Pulp Mills

APPENDIX A
WORLD BANK GROUP FOREST PORTFOLIO REVIEW

Project ID	Project Short Name	Country	Fiscal Year	Project Status	Sector
20589	Unipak-Nile 3	Egypt	2003	Closed	J-AG - Paper Packaging Products (Including Boxes, Cartons, etc.)
25136	IPI	Egypt	2007	Active	J-AD - Paper Tissue
28332	El Shorouk	Egypt	2011	Active	J-AB - Paperboard (Including Boxboard, Fiberboard)
20798	BILT 2	India	2004	Active	J-AC - Paper for Printing and Writing
21499	AP Paper Mills	India	2005	Active	J-AC - Paper for Printing and Writing
24171	JK Paper Ltd.	India	2006	Active	J-AC - Paper for Printing and Writing
24711	West Coast Paper	India	2007	Active	J-AC - Paper for Printing and Writing
28233	JK Paper CPLP	India	2009	Active	J-AC - Paper for Printing and Writing
28977	BioCarbon	Indonesia	2011	Active	A-DA - Natural Forests
23593	SEF Altyn Aj II	Kyrgyz Republic	2005	Active	J-AG - Paper Packaging Products (Including Boxes, Cartons, etc.)
25484	SEF Magic Box	Kyrgyz Republic	2007	Active	J-AG - Paper Packaging Products (Including Boxes, Cartons, etc.)
29287	SEF Magic Box II	Kyrgyz Republic	2011	Active	J-AG - Paper Packaging Products (Including Boxes, Cartons, etc.)
28319	Graphique III	Mali	2009	Active	J-AC - Paper for Printing and Writing
20666	Nuqul	MENA Region	2005	Active	J-AD - Paper Tissue
29414	Nuqul (MENA)	MENA Region	2010	Active	J-AD - Paper Tissue
20325	Copamex	Mexico	2004	Closed	J-AF - Other Paper (Including Multiple Types)
27243	SMG Nicaragua	Nicaragua	2009	Active	A-DA - Natural Forests
25335	Star Paper	Nigeria	2007	Active	J-AD - Paper Tissue
23526	PACKAGES (IX)	Pakistan	2006	Active	J-AB - Paperboard (Including Boxboard, Fiberboard)
26032	Packages (X)	Pakistan	2007	Active	J-AF - Other Paper (Including Multiple Types)
27494	Packages 2008	Pakistan	2009	Active	J-AH - Other Paper Products
20601	Intercell-Expan.	Poland	2004	Closed	J-AB - Paperboard (Including Boxboard, Fiberboard)
20425	Kronostar	Russian Federation	2004	Active	M-FC - Wood Panels and Engineered Wood Products
21562	OOO Kronospan	Russian Federation	2004	Closed	M-FC - Wood Panels and Engineered Wood Products
21806	Sveza	Russian Federation	2004	Closed	M-FC - Wood Panels and Engineered Wood Products
23981	OOO Kronospan PB	Russian Federation	2005	Active	M-FC - Wood Panels and Engineered Wood Products
24019	Kronostar II	Russian Federation	2005	Active	M-FC - Wood Panels and Engineered Wood Products
26792	Kronostar III	Russian Federation	2009	Active	M-FC - Wood Panels and Engineered Wood Products
28503	Kronospan CEE-RS	Serbia	2010	Active	M-FC - Wood Panels and Engineered Wood Products
25626	Sonae Novobord	South Africa	2007	Active	M-FC - Wood Panels and Engineered Wood Products
26506	Green Resources	Tanzania	2009	Active	A-DB- Plantation Forests
24079	Eren Expansion	Turkey	2006	Active	J-AG - Paper Packaging Products (Including Boxes, Cartons, etc.)

APPENDIX A
WORLD BANK GROUP FOREST PORTFOLIO REVIEW

Project ID	Project Short Name	Country	Fiscal Year	Project Status	Sector
27963	ModernKarton WCI	Turkey	2009	Active	J-AG - Paper Packaging Products (Including Boxes, Cartons, etc.)
23817	Orion	Uruguay	2007	Closed	J-AA - Pulp Mills
24073	Khai Vy Corp.	Vietnam	2005	Active	M-GA - Furniture and Related Products
24074	Paul Maitland	Vietnam	2006	Closed	M-GA - Furniture and Related Products
28461	PMI II	Vietnam	2010	Active	M-GA - Furniture and Related Products

Source: IFC data.

Appendix B

List of Persons Consulted

Name	Title	Organization
World Bank Group Staff—Washington DC		
Anna Akhalkatsi	Senior Operations Officer	International Finance Corporation (IFC)
Lukas Casey	Principal Investment Officer	IFC
Catherine Cruveillier Cassagne	Senior Operations Officer	IFC
Mark A. Constantine	Principal Strategy Officer	IFC
David Campbell Gibson	Senior Environmental Specialist	IFC
Steven Gretzinger	Senior Forestry Specialist	IFC
Susanne Leloup	Consultant	IFC
Dwight H. O'Donnell	Consultant	IFC
Mark Reeve	Consultant	IFC
Kai-Erik Volmari	Principal Industry Specialist	IFC
Jill Crowther	Environment & Social Development Specialist	MIGA
Pedro Alba	Director, Strategy and Operations	World Bank
Godfrey Jeff Alumai	JPA—Forestry	World Bank
Ellysar Baroudy	Sr. Carbon Specialist (Biocarbon Fund-BioCF)	World Bank
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Benoit Bosquet	Lead Carbon Financial Specialist (Forest Carbon Partnership Facility)	World Bank
Carter J. Brandon	Lead Economist	World Bank
Mark Cackler	Sector Manager	World Bank
Tuuka Castren	Sr. Forestry Specialist (Forest Law Enforcement and Governance-FLEG)	World Bank
Joelle Chassard	Manager	World Bank
Shubham Chaudhuri	Sector Manager	World Bank
Robert Davis	Sr. Forestry Specialist	World Bank
Laurent Debroux	Sr. Natural Resources Economist	World Bank
Gerhard Dieterle	Adviser, AES	World Bank
Peter Dewees	Lead Specialist, AES	World Bank
Flore De Preneuf	Communications Officer	World Bank
Charles E. Di Leva	Chief Legal Officer	World Bank
Grahame Dixie	Sr. Agribusiness Specialist	World Bank
Daniel Gross	Consultant	World Bank
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Andrea Kutter	Sr. Partnership Specialist	World Bank
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William Magrath	Lead Natural Resource Economist	World Bank
Edgardo Maravi	Consultant	World Bank
Grant Milne	Sr. Natural Resources Management Specialist	World Bank
Fanny Missfeldt-Ringius	Sr. Energy Economist	World Bank
Andrew Mitchell	Sr. Forestry Specialist	World Bank
Ohene Owusu Nyanin	Country Manager	World Bank
Stefano Pagiola	Sr. Environmental Economist	World Bank
Norman Bentley Piccioni	Lead Rural Development Specialist	World Bank
Madhavi Pillai	Forestry Specialist	World Bank
Michelle Rebosio	Social Development Specialist	World Bank
William Rex	Lead Water Resources Specialist	World Bank
André Rodrigues de Aquino	Carbone Finance Specialist	World Bank
Susan S. Shen	Operations Adviser	World Bank
Harideep Singh	Sr. Rural Development Specialist	World Bank
Simon RietbergenJohn Spears	Sr. Forestry Specialist	World Bank
Louis Tian-Pierquin	Consultant	World Bank
Juergen Voegelé	Sector Director	World Bank
Gerardo Segura Warnholtz	Sr. Rural Development Specialist	World Bank
Pierre Werbrouck	Agricultural Economist (Former World Bank Staff)	World Bank
Jintao Xu	Consultant	World Bank

APPENDIX B

LIST OF PERSONS CONSULTED

Name	Title	Organization
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World Bank Group Staff—Country Offices

IFC

Benjamin Man Ling Li	Social Development Specialist	IFC —China
Ernest Bethe	Senior Operations Officer	IFC—Indonesia
Michael Brady	Senior Operations Officer	IFC—Indonesia
Aimilios Chatzinikolaou	Resident Representative	IFC—Laos
Kobina E. Daniel	Legal Advisor, Investment Climate Team for Africa	IFC—Liberia
Daniel San Roman Vera	Sr. Investment Officer	IFC —Mexico

WORLD BANK

Renan Poveda	Environment Specialist	World Bank—Argentina
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Ulrich K.H.M. Schmitt	Senior Natural Resources Economist	World Bank— China
Daniel M. Sellen	Sector Leader	World Bank—Colombia
Gabriela Arcos	Task Team Leader of Peru Projects	World Bank—Ecuador
Reena Gupta	Natural Resources Management Specialist	World Bank—India
Ranjan Samantaray	Natural Resources Management Specialist	World Bank—India
Frabizio Bresciani	Senior Agriculture Economist	World Bank—Indonesia
Timothy Brown	Senior Natural Resources Management Specialist	World Bank—Indonesia
Franz Drees-Gross	Sector Manager—Sustainable Development	World Bank—Indonesia
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Emile Jurgens	Consultant	World Bank—Indonesia
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Keiko Miwa	Country Manager	World Bank—Laos
Sybounheuang Phandanouvong	Social Development Specialist	World Bank—Laos
Viengkeo Phetnavongxay	Environmental Specialist	World Bank—Laos
Khamlar Phonsavat	Climate Change Specialist	World Bank—Laos
Renae Nicole Stenhouse	Consultant	World Bank—Laos
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Oliver Braedt	Sr. Natural Resources Management Specialist	World Bank—Liberia
Harold Bedoya	Country Operations Adviser	World Bank—Mexico
Ricardo Hernandez Murillo	Sr. Environmental Specialist	World Bank—Mexico
Rachid Benmessaoud	Country Director	World Bank—Pakistan
Raul Tolmos	Environment Specialist	World Bank—Peru
Anna Georgieva	Russia Country Sector Coordinator	World Bank—Russia
Marina Smetanina	Consultant	World Bank—Russia
Kuzmichev Evgeny	FLEG ENPI Program Consultant (CCI Committee)	World Bank—Russia
Bedilu Amare Reta	Environmental Specialist, AFTEN	World Bank—South Sudan
Peter Jipp	Sr. Natural Resources Management Specialist	World Bank—Thailand
Luis Constantino	Sector Manager	World Bank—Timor Leste

NGO / Civil Society Organizations / Foundations / Research Institutes / Academia

Jill Blockhus	Senior Policy Advisor	The Nature Conservancy (TNC)
Susanne Breitskopf	Political Advisor, Forest & Climate	Greenpeace
Bruce Cabarle	Leader, Forest & Climate Initiative	World Wildlife Fund United States (WWFUS)

APPENDIX B

LIST OF PERSONS CONSULTED

Name	Title	Organization
Kerstin Canby	Director, Forest Trade	Forest Trends
Kerry Cesareo	Managing Director, Forests	WWFUS
Marcus Colchester (on VC)	Director	Forest Peoples Program
Lawrence (Ladd) Connell	Director, Multilateral Relations	Conservation International
Simon Counsell	Executive Director	Rainforest Foundation UK
Andrew Deutz	Director, International Government Relations	TNC
Lee Gross	Project Manager	Ecoagriculture Partners
Lisa Handy	Senior Policy Adviser	Environmental Investigation Agency (EIA)
Ronny Hansen	International Policy Adviser	Rainforest Foundation Norway
Jeff Hayward	Climate Initiative Manager	Rainforest Alliance
Kristen Hite	Senior Attorney, Climate Program	Center for International and Environmental Law (CIEL)
Rick Jacobsen	Team Leader, International Forest Policy, Environmental Governance Team	Global Witness
Dirk Joldersma	Vice President, Multilateral Affairs.	WWFUS
David Kaimowitz	Director, Sustainable Development	Ford Foundation
Arvind Khare	Executive Director	Rights and Resources Initiative (RRI)
Joshua Lichtenstein	Manager, Latin America Program	Bank Information Center (BIC)
Vince McElhinny	Senior Policy Advisor	BIC
Augusta Molnar	Director, Country and Regional Programs	Rights and Resources Initiative
Saskia Ozinga	Campaign Coordinator	FERN
Frances Seymour	Director	Center for International Forestry Research (CIFOR)
David Waskow	Climate Change Program Director	OXFAM
Stuart Wilson	Director	Forest Monitor, Ltd., UK
Claire Zuazo	Grants Facility Manager	Chemonics
Multilateral / Regional / Bilateral Development Partners		
Gloria Visconti	Forest Investment Program (FIP) Focal Person	Inter-American Development Bank (IDB)
Netto de A. C. Schneider	Forest Carbon Partnership Facility (FCPF) Focal Person	IDB

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LIST OF PERSONS CONSULTED

Name	Title	Organization
BRAZIL		
Government		
Daniela America Suárez de Oliveira	Gerente De Projeto	Ministerio Do Meio Ambiente (MMA)
Arthur Jorge Brant Pereira	Coordenação de Monitoramento da Biodiversidade	Instituto Chico Mendes De Conservacao Da Biodiversidade (ICMBio)
Cristina Cambiaghi	Advisor	National Indian Foundation—Brazil (FUNAI)
Antonio Carlos Hummel	President	Servicio Florestal Brasileiro (SFB)
Jose Cesareo	Director	Instituto de Terras do Para (ITERPA)
Claudia Costa	Chefe do Departamento de Gestão do Fundo	BNDES
Edegard de Deus	Secretario	Secretaria de Meio
Ramiro Hofmeister	Director, Environment Protection	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renovaveis (IBAMA)/
		Directoria de Protecao Ambiental (DIPRO)
Antonio Carlos Hummel	General Director	Servico Florestal Brasileiro (SFB)
Marcio Meira	Presidente	FUNAI
Antonio Carlos Neves da Rocha	Project Coordinator—Para Rural	Secretaria de Programas Especiais—
Mauro Oliveira Pires	Director, Combating Deforestation	Governo do Estado do Para
Nazare Soares	Director	MMA
Ricardo Jose Soavinski	Project Manager, ARPA	MMA
Trajano Augustus Tavares	Director General, External Resources	Instituto Chico Mendes De Conservacao Da Biodiversidade (ICMBio)
Quinhoes		MMA / Secretaria de Biodiversidade e Florestas
Glaube Teixeira de Carvalho	Administração Financeira	National Treasury, Ministry of Finance
Volney Zanardi Junior	Director	MMA
NGOs / Civil Society Organizations / Foundations / Research Institutes / Academia		
Eduardo Amaral Borges	Director	Grupo de Pesquisa e Extensao em Sistemas Agroflorestais do Acre (PESACRE)
Paulo Barreto	Senior Researcher	Man and Environ. Institute of the Amazon (IMAZON)
Rosana Cassio	Coordinator	Instituto de Pesquisa Ambiental da Amazonia (IPAM)
Francisco Fonseca	Director	The Nature Conservancy (TNC)
Maria Josicleide	Coordinator	Grupo de Trabalho da Amazonia (GTA)/Rede Acreana de Mulheres e Homens (RAMH)
Rosa Lemos de Sa	CEO	Fundo Brasileiro Para A Biodiversidade (FUNBIO)
Marco Lentini	Coordinator	Instituto Floresta Tropical (IFT)
Brent Milikan	Amazon Program Director	International Rivers
Benki Piyako	Leader	Rio Amonia Ashaninka Association
Isaac Piyako	Leader	Rio Amonia Ashaninka Association
Tiago Valente	Director	Instituto de Desenvolvimento Florestal do Estado do Para (IDEFLOR)
Private Sector		
Claudia Amarante	Coordenadora de Serviços	O Banco Nacional Do Desenvolvimento (BNDES)
Olympio Barbanti	Chief Executive Officer	Kastalia Assessoria
Marcio Macedo Costa	Director, Environment	BNDES
Multilateral / Regional / Bilateral Development Partners		
Daniel Alker	Counselor	German Federal Ministry for Economic Cooperation and Development in Brazil
Inge Nordang	Minister Counsellor	Embassy of Norway
Hubert Eisele	Senior Project Manager	KfW Entwicklungsbank

APPENDIX B
LIST OF PERSONS CONSULTED

Name	Title	Organization
CHILE		
Government		
Juan Luis Correa Allamand	Jefe de Unidad de Estudios	Ministerio de Hacienda
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Rodrigo Rojo	Asesor Asuntos Internacionales	Ministerio de Hacienda
NGOs / Civil Society Organizations / Foundations / Research Institutes / Academia		
Flavia Liberona Cespedes	Directora Ejecutiva	Terram
Ana Young Downey	Presidente	FSC-Chile
Private Sector		
Rafael Correa Lira	Subgerente de Inversiones y Compra de Fondos	Forestal Mininco
Roberto Munoz	Jefe Medio Ambiente	ARAUCO Forestal
Francisco Revco Reyes	Subgerente Asuntos Publicos Sur	Forestal Mininco

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LIST OF PERSONS CONSULTED

Name	Title	Organization
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Beijing		
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Dong Hui	Senior Accountant	World Bank Project Management Center, State Forestry Administration
Cheng Jinghua	Senior Engineer	World Bank Project Management Center, State Forestry Administration
Zhang Kun	Associate Professor	China National Forestry Economics and Development Research Center, State Forestry Administration
Zhang Lei	Director-General	Department of Rural Forestry Reform and Development, State Forestry Administration
Li Shuxin	Chief	Department of Policy and Law, State Forestry Administration
Jiang Xishan	Deputy Director-General	World Bank Project Management Center (Plantation Development), State Forestry Administration
Ronghua Ye	Chief Engineer	Natural Forest Protection Center, State Forestry Administration
Qian Yuru	Division Director	International Forestry Cooperation Center, State Forestry Administration
Zhong Tao Zhang	Director, Sr. Engineer	Planning and Design Institute of Forest Products Industry State Forestry Administration
Heilongjiang		
Li Wen Da	Deputy Director-General	Heilongjiang Forestry Enterprise, Harbin
Shi Guangjian	Vice Director-General (Human Resources)	Hai Lin Forest Enterprise, Hai Lin
Wei Hailin	Division of Planning and Finance	Heilongjiang Forestry Department, Harbin
Xu Jiang	Director, Division of Policy and Legislation	Heilongjiang Forestry Department, Harbin
Gao Jinyu	Director, Administration Office	Hai Lin Forest Enterprise, Hai Lin
Li Jingping	Division of Foreign Affairs	Heilongjiang Forestry Department, Harbin
Liu Lijun	Director, Forest Tenure Reform	Yichun Forest Bureau, Yichun
Guo Maojin	Director, Division of Production & Silviculture	Hai Lin Forest Enterprise, Hai Lin
Wang Shuliang	Division of Silviculture	Heilongjiang Forestry Department, Harbin
Zhu Tianbo	Division of Silviculture	Heilongjiang Forestry Department, Harbin
Guo Wenkui	Vice Director-General (Finance)	Hai Lin Forest Enterprise, Hai Lin
Qu Yanfeng	Vice Director-General (Timber Production)	Hai Lin Forest Enterprise, Hai Lin
Wang Yongde	Director	Hai Lin Forest Enterprise, Hai Lin
Lu Yu	Deputy Director, Division of Resource Management	Forest Department, Harbin
Hunan		
Dai Chengdong	Deputy Director	Foreign Fund Project Management Office, Hunan Forestry Department, Changsa
Chen Dafu	Project Officer	EU-China Natural Forest Management Project
Lou Yunqing	Head of Township	Wu Dao Shui Township, Shanzhi County
Wen Zhenjun	Deputy Director-General	Hunan Forestry Department, Changsha
Sichuan		
Zhang Dengxiang	Vice Governor	Forest Bureau, Xuyong County
Cheng Lu Fu	Director	Forest Bureau, Xuyong County
Zhang Jia Gou	Manager	Bamboo Sprouts Special Cooperative, Dujiangyan City
Zheng Jingjie	Chief Engineer	PPMO
Hang Jijian	Section Chief	PPMO
Zeng Kiang	Section Chief, Afforestation	Forest Bureau, Xuyong County
Zou Liyong	Deputy Director, Division of Wildlife Conservation	Sichuan Forestry Department, Chengdu

APPENDIX B

LIST OF PERSONS CONSULTED

Name	Title	Organization
Long Tinglun	Senior Engineer, Division of Wildlife Conservation	Sichuan Forestry Department, Chengdu
Cai Wenhua	Deputy Director	Forest Bureau, Xuyong County
Liu Xing	Registered Scientist	PPMO
Weng Yong	Unit Head, Afforestation	Forest Bureau, Xuyong County
Li Zhaode	Head, Research and Extension Station	Forest Bureau, Xuyong County
Ye Zhiguo	Deputy Director	Luzhou City Forest Bureau
Yunnan		
Si Zhi Chao	Director, Wildlife Conservation and Nature Reserve Management Division	Yunnan Forestry Department, Kunming
Li Bao Chun	Director, Department of Finance	Government of Yunnan Province
Xie Hong Fang	Director General	Baimaxueshan Nature Reserve, Weixi County
Yang Fang	Deputy Director, Conservation Division	Yunnan Forestry Department, Kunming
Yang Pei Fang	Forestry Engineer	Baimaxueshan Nature Reserve, Weixi County
Gui Huijun	Vice Director-General	Yunnan Forestry Department, Kunming
Sun Ru Lin	Researcher, Forest Industry Development Division	Yunnan Forestry Department, Kunming
Li Bo Ping	Senior Account, International Cooperation Division	Yunnan Forestry Department, Kunming
Shi Fang Qin	Senior Forest Engineer	Baimaxueshan Nature Reserve, Weixi County
Li Ruchun	Deputy Director-General	Baimaxueshan Nature Reserve, Weixi County
Jiang Zhu Tan	Officer, Conservation Division	Yunnan Forestry Department, Kunming
Mao Wei	Director, Administration Office	Baimaxueshan Nature Reserve, Weixi County
Zhao Weidong	Director, Project Management Office	Baimaxueshan Nature Reserve, Weixi County
Li Zhai Xia	Deputy Director, International Cooperation Division	Yunnan Forestry Department, Kunming
Dong Xialing	Forestry Engineer	Baimaxueshan Nature Reserve, Weixi County
Xu Zhijiang	Director, International Cooperation Division	Yunnan Forestry Department, Kunming
NGOs / Civil Society Organizations / Foundations / Research Institutes / Academia		
Shi Feng	Vice-General Secretary	China National Forestry Industry Federation
MA Jian	Climate Change Project Manager	The Nature Conservancy
Ping Li	Senior Attorney	Landesa Rural Development Input
Ma Lichao	Forest Stewardship Council (FSC) China Representative	FSC
Chen Peng	Programme Officer	China Green Foundation
Xu Qian	Programme Officer	China Green Foundation
Peng Ren	Program Coordinator	Global Environmental Institute
Zhang Xinxin	Forest Programme Coordinator	World Wildlife Fund (WWF) Beijing Office
Long Yongcheng	Chief Scientist, China Program	The Nature Conservancy
Li Zhang (Aster)	Programs Director	Conservation International
Han Zheng	Director of Forest Programme	WWF Beijing Office
Private Sector		
Goran Storck	Deputy Managing Director	StoraEnso
Marko Wotzel	Director Wood Supply	StoraEnso
Herbert Pircher	Managing Director	StoraEnso
Pan Helen	Sustainability Manager	StoraEnso
Juha Anttila	Manager Sustainability	StoraEnso
Multilateral / Regional / Bilateral Development Partners		
Li Ping	Project Manager	German Development Cooperation (KfW)
Michela Tagliaferri	Project Officer	Development and Cooperation, European Union

APPENDIX B
LIST OF PERSONS CONSULTED

Name	Title	Organization
DEMOCRATIC REPUBLIC OF CONGO		
Government		
Lusakueno André	Chef de division	Ministère de l'agriculture
Ferdinand Badila	Directeur Chef de Service	Ministère de l'Energie
Joseph Kuabi Bavueza	Chef de bureau Direction Electricité	Ministère de l'Energie
Son Excellence Mr José	Ministre	Ministère de l'Environnement conservation de la Nature et tourisme (MECNT)
Endundo Bononge		Ministère de l'agriculture
Yalulu Lampes Desiré	Directeur chef de service	Ministère de l'Environnement Conservation de la Nature et Tourisme/Cabinet du Ministre
Philippe Duchochois	Conseiller technique du Ministre	Ministère du Développement Rural
Dr. Richard Bola Ekofo	Directeur Chef de Service	Ministère de l'Environnement conservation de la Nature et Tourisme (MECNT)/DEP (Direction d'étude et planification)
Jose Ilanga	Directeur des Etudes et de la Planification	Ministère de Finance
Mr. Patrice Kitebi	Conseiller en charge du suivi des projets et programmes	
Ir Grégoire Magema	Directeur chef de service	Ministère ITPR/SG RECO
Vincent Kasulu Makonga	Directeur de la direction de développement durable (DDD), point focal GEF et UNFCCC	Ministère de l'Environnement conservation de la Nature et tourisme (MECNT)
Young Masudi	Agent de bureau de premier Classe	Ministère de l'agriculture
Angelique Mbelu	Chargee des questions FLEGT & REDD	Conseil pour la Defense Environnementale par la Legalite et la Tracabilite
Augustin Mpoyi Mbunga	Directeur Executif	Conseil pour la Defense Environnementale para la Legalite et la Tracabilite
Michel Mingiedi	Chef de division	Ministère de l'agriculture
Constant Ngoy Mizingu	Administrateur de la Base de données	Ministère de l'Energie
Daniel Mobali	Chef de division	Ministère du plan
Georges Mulumba	Directeur Général de la Bibliothèque	Ministère de l'Energie
Serge Sabin Ngwato	Assistant Technique	Conseil pour la Defense Environnementale par la Legalite et la Tracabilite
Mr. Ngwisani	Coordonnateur Provinciale/Bas Congo	Ministère de l'Environnement Conservation de la Nature et Tourisme/Coordination Provinciale Bas Congo/RDC
Mr. Patay Tchedeys Raymond	Ministre Provinciale	Ministère provinciale des travaux publics Reconstruction, Environnement, transport et voie de communication
Beatrice Makaya Samba	Conseillere Charge de l'Environnement et du Turismo	Cabinet du Premier Ministre
Me Yvonne Sansa	Directeur Adjoint de Cabinet	Ministère de l'Environnement conservation de la Nature et tourisme (MECNT)
Mr. Sele Yalaghuli	Directeur de Cabinet	Ministère de Finance
NGOs / Civil Society Organizations / Foundations / Research Institutes / Academia		
Drokv Adoroti	Coordonnateur	SOCITEMA
Ibrahim-Aly	Représentant régional	COMICO
Patrick Asiho	Coordonnateur	CAJUC
Dieu Merci Assumani	Chercheur	Topenbos International (TBI)
Guy Kajemba Bagalwa	Charge des Programmes	Groupe de Travail Climat REDD
Aimé Bakila	Président chez Jeunes Associés pour le Développement Intégral	CNJ/GTCR
Flory Nyamwoga Bayengeha	Coordonnateur Nationale	Objectif Développement Communautaire (ODC)
Samuel Begaa	Chargé des projets	PCN
Dr. Charlotte Benneker	Directrice du programme RD Congo	TBI
Sokoni Bienvenu	Vice-Président	SOGED
Joseph Lofole Bofe	Conseiller Juridique	OSAPY
Ronsard Boika	Assistante chargée d'éducation Environnementale	Cercle pour la défense de l'Environnement (CEDEN)
Jean Marie Bolika	Chargé plaidoyer	RRN/GTCR

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LIST OF PERSONS CONSULTED

Name	Title	Organization
Joseph Bolongo	Chercheur	TBI
Serge Bondo	Expert forêt	REM-OIM-FLEG
Judith Moubu Bongongo	Assistante chargée de la cartographie	CEDEN
Mathieu Yela Bonketo	Coordonnateur	CEDEN
Floribert Botamba	Chef de projet WWF-REDD	WWF
Marie Boundawana	Chargé de Genre	OSAPY
JR Bowela	Coordonnateur National Adjoint	REPEC/CRON
Ndasi-Boyabekombu	Représentant	BIMA
Amboko Damien	Secrétaire	Leader religieux
Kapupu Diwa	Président National	LINAPYCO
Masika Donatienne	Présidente	AFEP
Ethon Freid	Operations Forestry	JADORA
Eric Haudiquet	Coordonnateur	REM-OI-FLEG
Njike Horline	Juriste Experte	REM-OI-FLEG
Patrick Saïdi Hemedi	Chargé de planification et relations extérieurs	DGPA (Dynamique générale des peuples autochtones)
Noah Herland	Director of Reforestation and Social Development	JADORA
Thérèse Itoyi	Chercheur	WCS(Mambasa)
Mtre Alphonse longbango	Coordonnateur Adjoint	GTCR/RRN
Joseph Itongwa	Coordonnateur PIDP et Coordonnateur REPALEF	REPALEF et PIDP
Mgr Joseph Matungulu Kyaga	Coordonnateur	DGED
Félicien Kabamba	Coordonnateur National	GTCR/CODELT
Mme Louise Kavira	Coordonnatrice National de l'ONG OAN et conseiller technique du REPALEF/RDC	OAN/REPALEF
Paul Kagimbi	Conseiller Juridique	CDPE
Guy Kajemba	Officer	GTCR
Prof. Taba Kalulu	Conseiller Principal Collège Technique et ressources naturelles	Primature
Paulin Kanda	Chargé de programme	OCEAN
Victor Kangela	Animateur	OCEAN
Martine Kankolongo	Point Focal Genre/DGF	MCNT/DGF
Felix Karume	DRC Programme Manager	OSISA
Don de Dieu Katshunga	Expert juriste-Environnementaliste	GTCR/CODELT
Botoko Kendewa	Animateur	OCEAN
Maurice Kisepa	Représentant	Réseau des associations, ONG et Coopérative de Mambasa
Benoit Kisuki	Directeur Pays/RDC	Conservation Internationale/CI
Papy Bambu Liena	Assistant de recherche	SOS Nature
Jean Denis Likwandjandja	Consultant	TBI
Richard Lokoka	Chargé de Programme	OSAPY
Chouchouna Losale	Assistante	CTIDD
Willy Loyombo	Président	OSAPY
Mr. Lubala	Juriste Nationale du projet	REM-OI-FLEG
Raymond Lumbuenamo	Directeur WWF-RDC	WWF
Dr. Vangu Lutete	Directeur d'exploitation	SEDAF
Jacob Madidi	Chef de Projet Adjoint	WCS(Mambasa)
Nene Mainzana	Coordonnateur Nationale	RCEN/GTCR
Mme Béatrice Makaya	Conseiller en charge de l'Environnement et tourisme	Primature
Ir Mambweni Makaya	Chargé de Reboisement PPRGII	Structure REDD+/INERA Yangambi
Mangala Martin	Coordonnateur	PADEP
Patrick Matata	Chercheur	TBI
Angelique Mbelu	Chargé des questions REDD et FLEGT	CODELT
Kanu Mbizi	Coordonnateur National/RDC	Coordination National REDD/RDC
Pierrot Mbonzo	Educational Program Coordinator	Lola ya Bonobo
Mtre Augustin Mpoyi Mbunga	Directeur Exécutif	CODELT
Fanny Mehl	Directrice Adjointe des projets	Lola ya Bonobo
Jean Claude Mobonda	Conseiller Technique	IGED
José Mokaria	Chargé de Mission	CEDEN
Fabien Monteils	Conseiller technique principal programme	Coordination National REDD/RDC
Anifa Muhambo	Logistique	WCS(Mambasa)
Joëlle Mukungu	Chargée d'étude	OCEAN
Ir Kamanda Mulaba	Secrétaire du Conseil d'Administration	FAKIS
Patrick Mulenda	Assistant Technique	CODELT
Kisaka Musondolya	Membre	CVAP

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LIST OF PERSONS CONSULTED

Name	Title	Organization
Olivier Mushiete	Promoteur et Coordonnateur du projet	Novacel (Projet IBI village/Bateke)
Kass Ahdor Muteba	Chargé de programme	OCEAN
Hortense Mutoba	Secrétaire	FOMASI
Armand Mwanga	Office Manager	TBI
Séraphin Osukya Mwarabu	Logisticien	ANAPY
Jose Nzau Ndamvu	Coordonnateur d'exploitation	TRANS-M
Alain Ngulungu	Superviseur	Infoverte/Reddreview
Ir Tchirwisa Baba Nshang	Président	CAMSEG
Ir Bibie Ndeke	Animatrice Pool/Kis	Apilaf
René Ngongo	Conseiller Politique forêt	GREENPEACE
Bienvenu Ngoy	Coordonnateur National	GTF
Taghenda Nguru	Vice-Recteur	UEMA
Serge Sabin Ngwato	Assistant du Coordonnateur GTCR	GTCR/CODELT
Bendera Noro	Président	CPP
Ferdinand Ntabyu	Coordonnateur	Congo en Images
Jean Cyrille Owada	Coordonnateur Adjoint	REM-OI-FLEG
Nzuva Sitwaminya Pendeza	Coordonnatrice	CVAP/OSAPY
Raymond Pernay	Administrateur délégué Générale Adjoint (ADGA)	SAFBOIS
Prosper Sabongo	Enseignant chercheur	UNIKIS
Patrice Sengwa	Chef de Secteur	Administration du territoire
Souzy	Guide	Lola ya Bonobo
Mbusa Syalyamuvana	Coordonnateur	UEMA
Mago Takanyato	Conseiller	Gouvernorat
Constance Tekitila	Secrétaire générale a.i	RCEN
Me Espoir Tshakoma	Coordonnateur des projets	Groupe de Travail Climat REDD
Dr. Muamba Tshibas	Directeur en charge de	Coopération Internationale et de la planification (ICCN)
Gauthier Tshikaya	Directeur Administrateur et financier	NOVACEL
Christopher H. Tuite	Forest Carbon markets Grow	Conservation International
Jean Ubishi	Président	SYDIP
Peter Umunay	Chercheur	WCS
Françoise Van de Ven	Secrétaire Générale	Fédération des industrielles de bois au Congo
Salomon Mampeta Wabasa	Chercheur Chef des Travaux	Universite De Kisangani
Irène Wabiwa	Forest Campaigner	GREENPEACE
Aimé Wawana	Coordonnateur	Monde pour tous
Alfred Yoko	Chef de Projet forêt Conservation de la Nature	WWF
Joseph Zambo	Assistant Technique	Groupe travail forêt (GTF)
Emmanuel Zola	Responsable	SIFORCO

Community Consultations

Asuaga Ajali	Community Member	Local Bali Community members
Patrice Alabi	Community Member	Local Bali Community members
Albert Amisi	Community Member	Local Bali Community members
Henry Amisi	Local Leader	Local Bali Community members
Jean Amisi	Local Leader	Local Bali Community members
Shabani Amisi	Community Member	Local Bali Community members
Gaby Angalu	Group Chief	Local Bali Community members
Eteya Angondo	Community Member	Local Bali Community members
Tabu Apelesi	Community Member	Local Bali Community members
Ayali Asuaga	Community Member	Local Bali Community members
Azigizene	Community Member	Local Bali Community members
Amundala Badigemoti	Community Member	Local Bali Community members
Jean Pierre Bamenga	Community Member	Local Bali Community members
Celestin Bokaba	Local Leader	Local Bali Community members
Emmanuel Bolima	Community Member	Local Bali Community members
Pius Elamba	Community Member	Local Bali Community members
Jeremie Kisubi	Community Member	Local Bali Community members
Ferdinand Kitambi	Local Chief	Local Bali Community members
Paulin Kitambi	Community Member	Local Bali Community members
Edouard Kjambo	Community Member	Local Bali Community members
Claude Lokoli	Local Leader	Local Bali Community members
Maindo Alphonse	Community Member	Local Bali Community members
Jeanne Malumbu	Community Member	Local Bali Community members

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Name	Title	Organization
Noldi Manala	Community Member	Local Bali Community members
Maliamu Mateso	Community Member	Local Bali Community members
Jean Claude Matropia	Community Member	Local Bali Community members
Leonard Membule	Community Member	Local Bali Community members
Joseph Natuiye	Community Member	Local Bali Community members
Gaston Nganzola	Community Member	Local Bali Community members
Papy Tangeli	Local Leader	Local Bali Community members
Ngazola Yasio	Community Member	Local Bali Community members

Multilateral / Regional / Bilateral Development Partners

John B. Flynn, PhD	Directeur CARPE	United States Agency for International Development (USAID)
Shelley Gardner	Policy Advisor	United States Department of Agriculture (USDA) Forest Service
Virginie Leroy-Saudubray	Chargée de Mission	French Agency for Development-AFD
Jonstein Lindland	Counsellor	Royal Norwegian Embassy
Raymond Lumbuenamo, Ph.D.	Directeur National	World Wildlife Fund (WWF) Carpo
Benoit-Kisuki Mathe	Country Director, DRC Program	Conservation International
Ueli Muller	Coordonnateur du Programme : Biodiversité et forêt.	German International Cooperation Agency (GIZ)
Dieudonné Musibono	Coordonnateur et expert National en Environnement	PNUE/RDC
François Ngate	Assistant/Programme/FAO	Food and Agriculture Organization (FAO)/RDC
Son Hoàng Nguyễn, PhD	Carpe Deputy Director	USAID
Filippo Saracco	Chargé Régional des Projets Forêt et Environnement	UE (Union Européenne)
Andreas Schleenbecker	Conseiller Technique Forêt	GIZ
Mamadou Tangara	Chargé de programme pays	BAD(African Development Bank-AFDB)
Nicodeme Tchamou	Coordinateur Régional CARPE	USAID
Christopher H. Tuite, Ph.D.	Sr. Advisor, Carbon Fund Ecosystem Finance & Markets	Conservation International
Patrice K.Wadja	Chargé des opérations	BAD(AFDB)
Séraphine Wakana	Economiste principale pays	BAD(AFDB)
Charles Wasikama	Chargé de Programme Environnement et Energie	PNUD/RDC
Karl Wurster, PhD	Office of Economic Growth et Livelihoods	USAID

Private Sector

Alexandra Nyamungu	Superviseur du projet Consava	Taicom Congo Sprl
Diamantides		
Rudy Prosper Kinvuidi	Field supervisor	Taicom Congo Sprl
Richard Longage	Field Supervisor	Taicom Congo Sprl
Jack Etsa Mobolu	Superviseur du projet Village vert	Taicom Congo Sprl
Joseph Nkinzo	PDG	Taicom Congo Sprl
Gauthier Tshikaya	Directeur Administrateur et Financier	IBI-Village

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LIST OF PERSONS CONSULTED

Name	Title	Organization
INDIA		
Government		
Andhra Pradesh		
Kishan S. Das	Deputy Conservator of Forests	MGNREGS, Hyderabad
B.V. Jagannadh	Executive Secretary	Pragathi Marga Kendra, Vizianagaram
Ramesh G. Kalaghatgi	Additional Principal Chief Conservator of Forests	Forestry Department, Hyderabad
Vinay Kumar	Special Commissioner and Project Director	Irrigation & CAD Department, Hyderabad
B.V. Ravi Prasad	Secretary	Pakruthi, Vizag
C. Madhukar Raj	Principal Chief Conservator of Forests	Forestry Department, Hyderabad
C. Naga Raju	Programme Officer	Centre for People's Forestry, Secunderabad
Shamsher Singh Rawat	Commissioner, Rural Development	Government of Andhra Pradesh
B.S.S. Reddy	Additional Principal Chief Conservator of Forests	Forestry Department, Hyderabad
D. Srinivasulu	Chief Executive Officer	State Vanasamakhyas, Secunderabad
R. Subrahmanyam	Principal Secretary to Government	Panchayat Raj & Rural Development Department, Hyderabad
C. Suvama	Special Commissioner	Department of Rural Development, Hyderabad
Priyanka Varghese	Divisional Forest Officer	Karimnaga (West) Division
Assam		
F.A. Ahmed	District Forest Officer	Assam Agricultural Competitiveness Project
Aniruddha Dey	Environment Specialist & Forest Coordinator	Project Coordination Unit, Assam
R.M. Dubey	Chief Conservator of Forests	Agricultural Competitiveness Project
Hirdesh Mitra	District Forest Officer	Guwahati
O.M. Prakash Pandey	Chief Conservator of Forests, Biodiversity	Assam Agricultural Competitiveness Project
P. Sivakumar	District Forest Officer	Guwahati
R.D.S. Tanwar	Nodal Officer, NaRMIL	Assam Agricultural Competitiveness Project
Haryana, Himachal Pradesh, Punjab, and Uttarakhand		
A.S. Dogra	Principal Chief Conservator of Forests (retired)	Assam Agricultural Competitiveness Project
S.S. Greewal	Senior Consultant	Project, Guwahati
R.C. Gupta	Chief Hydrologist (Retired)	Punjab, Chandigarh
New Delhi		
V.M. Arora	Director	Haryana Community Forestry Project, Chandigarh
V.K. Bahuguna	Technical Expert (Forestry)	Haryana Agricultural Department, Chandigarh
Anita Chaudhary	Secretary	Department of Land Resource, Ministry of Rural Development
Anirban Ganguly	Fellow Forestry & Biodiversity	National Rainfed Area Authority, Planning Commission
Yogesh Gokhale	Fellow Forestry & Biodiversity	Department of Land Resources, Ministry of Rural Development
Hilaluddin	Chief Consultant (Forestry)	The Energy and Resources Institute
P.J. Dilip Kumar	Director General Forests & Special Secretary	The Energy and Resources Institute
Ram Prasad	Principal Chief Conservator of Forests (Retired)	National Rainfed Area Authority, Planning Commission
J.S. Samra	Chief Executive Officer	Ministry of Environment and Forests
K.S. Sethi	Deputy Inspector General, Forest Policy	Madhya Pradesh
Multilateral / Regional / Bilateral Development Partners		
Nand Kishor Agrawal	Project Manager, Rural Development	German Development Cooperation (KfW)
Vincent Darlong	Country Programme Officer	International Fund for Agricultural Development
Viren Lobo	Executive Director	Society for Promotion of Wastelands Development
Vineet Sarin	Lead Development Specialist	Japan International Cooperation Agency
Tinni Sawhney	Regional Team Leader	South Asia Pro-Poor Livestock Policy Programme, NDDB/FAOOH
Vera Scholz	Director	Natural Resource Management Programme, German Technical

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Name	Title	Organization
Bhomik Shah	Sr. Program Coordinator Forest Management & Policy	Cooperation (GTZ)
Rajeev Sharma	Technical Expert, Capacity Development	WWF—India
Virinder Sharma	Environment and Livelihoods Adviser	GTZ
		Department for International Development (UK)
Vanita Suneja	Campaign and Policy Coordinator	OXFAM India
Sanjay Tomar	Senior Technical Expert, Climate Change	GTZ
Gavin Wall	Representative in India and Bhutan	Food and Agricultural Organization

NGOs / Civil Society Organizations / Foundations / Research Institutes / Academia

M. Jayasree	President	Prakiti Environment Society, Hyderabad
V. Haranath Mehar	Secretary	Srujana Welfare Association, Chodavaram
Joseph Plakkootam	Executive Director	Development Management Network, Hyderabad
C.S. Reddy	Chief Executive Officer	APMAS, Hyderabad
M. Gopinath Reddy	Professor, Research Unit for Livelihoods and Natural Resources	Centre for Economic & Social Studies, Hyderabad
Dr. T. R. Manoharan	Head—Forest Programme	WWF—India
Suneel Padale	Senior Program Officer	Aga Khan Foundation

Private Sector

Bharat Agarwal	Vice President (Commercial)	JK Paper LTD.
S. Behani	General Manager (Accounts)	JK Paper LTD.
K. L. Chandak	Executive Director	The West Coast Papers Mills LTD
R. K. Chopra	Head—Raw Material Procurement	The West Coast Papers Mills LTD
Anand G. Darak	Sr. Manager Planning Development & Projects	The West Coast Papers Mills LTD
Soumitri Das	Fellow, Forestry and Biodiversity	The Energy and Resources Institute
Anirban Ganguly	Fellow, Forestry and Biodiversity	The Energy and Resources Institute
S. Goswami	Vice President (Technical—Packaging and Board)	JK Paper LTD.
A.J. James (Viju)	Advisor (Development Sector)	ICRA Management Consulting Services Ltd. (IMACS)
Pramod Kumar	Manager (Env.)	JK Paper LTD.
A. K. Mehra	DGM (QA & TS)	JK Paper LTD.
P. K. Mundra	VP Finance & Co. Secretary	The West Coast Papers Mills LTD
B. H. Rathi	Vice President (Operations)	The West Coast Papers Mills LTD
Naresh C. Saxena	Forestry Consultant	National Advisory Council
R. P. Singh	Asst. Vice President (Technical Services) & Management Representative (ISO Cell)	The West Coast Papers Mills LTD

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LIST OF PERSONS CONSULTED

Name	Title	Organization
INDONESIA		
Government		
Dr. Tachrir Fathoni	Director General	Forestry Research and Development Agency (FORDA)
Basah Hernowo	Director	Badan Perencanaan dan Pembangunan Nasional (BAPPENAS)
Doddy Sukadri	Chairman	Land Use, Land Use Change and Forestry (LULUCF)
Rolf Krezdorn	Programme Director	Ministry of Forestry—Forests and Climate Change Program (GIZ)
Dr. Hadi Pasaribu	Director General, Management of Forest Production	Ministry of Forestry
Husaini Syamaun	Director & Secretary, AFEP Coordinating Committee	BAPPEDAL, Aceh
NGOs / Civil Society Organizations / Foundations / Research Institutes / Academia		
Aditya Bayunanda	GFTN Coordinator	World Wildlife Fund (WWF)
Laura D'Arcy	County Coordinator	London Zoological Society (ZSL)
Agus Djailani	Sustainable Forestry Consultant	Tetra ARD
Jamal M. Gawi	Chair, Board of Directors	Leuser International Foundation
Mahdi Ismail	Head, Community Ranger, Desa Cut, Jantho, Aceh	Ulu Masen Ecosystem Forest
Matt Linkie	Aceh Program Manager	Fauna & Floral International (FFI)
Darmawan Liswanto	Country Director	FFI
Moray McLeish	Sustainable Forestry Consultant	World Resources Institute (WRI)
Abdon Nababan	Secretary General	Aliansi Masyarakat Adat Nusantara (AMAN)
Robert Nasi	Director (CRP6) & Action Director (Forests and Environment)	CRP6 & Forests and Environment and Center for International Forestry Research (CIFOR)
Sophie Perry	Program Manager, BACP	ZCL
Ujjwal Pradhan	Regional Coordinator - Southeast Asia	World Agroforestry Centre
Dolly Priatna	County Coordinator	ZSL
David Purmiasa	Coordinator for Aketajawe-Lolobata	Burung Indonesia-Bogor
Anwar Purwoto	Director of Terrestrial	WWF
Ria Saryanthi	Coordinator for Sangir Talaud	Burung Indonesia-Bogor
Rudi Surbakti	Project Officer, Green PNPM, Aceh	Wildlife Conservation Society (WCS)
Agus Budi Utomo	Executive Director	Burung Indonesia-Bogor
Meine Van Noordwijk	Principal Scientist	World Agroforestry Center, Southeast Asia Regional Office
Multilateral / Regional / Bilateral Development Partners		
Alfred Nakatsuma	Director, Office of Environment	United States Agency for Intl. Development
Thibout Portevin	Project Officer, Environment/Forestry	European Union
Joar Strand	Counselor for Climate Change & Forest	Embassy of Norway
Rini Ariani Sulaiman	Climate Change Advisor	Embassy of Norway
Private Sector		
Nanang Rofandi Ahmad	Chairman	Asosiasi Pengusaha Hutan Indonesia (APHI)
Herman Prayudi	Advisor	APHI
Ms. Lely Mulidya	General Manager	Kwas Industry
Amir Sunarko	President/Director	Sumalindo Lestari Jaya (SLJ)

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Name	Title	Organization
LAO PDR		
Government		
Khampachanh Bounnaeko	Deputy Head, Planning & Cooperation	Department of Forest Inspection, Ministry of Forestry and Agriculture
Douanchanh Lopaying	Executive Assistant	Office of the Prime Minister—Environment Protection Fund
Khampay Manivong	Director General	Department of Forestry, Ministry of Forestry and Agriculture
Saysamone Pannalangsy	Deputy Director General, Planning & Cooperation	Department of Forest Inspection, Ministry of Forestry and Agriculture
Sorsonephit Phanouvong	Director General	Lao Front for National Construction
BounPhama Photisane	Monitoring & Evaluation Manager	Office of the Prime Minister—Environment Protection Fund
Thongphanh Ratanalangsy	Director of Planning & Cooperation	Department of Forest Inspection, Ministry of Forestry and Agriculture
Thongsavanh Soulignamath	President/Director	Lao Wooden Furniture Association
Soukata Vichit	Executive Director	Office of the Prime Minister—Environment Protection Fund
Mr. Yekosah	Former Director General	Lao Front for National Construction
Consultants		
Majella Clark	REDD Advisor	Sustainable Forestry and Rural Development Project (SUFORD)
Chris Dickenson	Social Advisor	SUFORD
Karolina Lindross	Economic Advisor	SUFORD
Phoukong Phongsa	Social Specialist Consultant	SUFORD
Esa Puustjarvi	Chief Technical Advisor	SUFORD
NGOs / CSOs / Research Institutes / Academia		
Christoph Muziol	Programme Coordinator	International Union for Conservation of Nature (IUCN)
Charlotte Hicks	Wildlife Conservation Advisor	IUCN
Phaivanh Phialapat	Executive Director	Lao Wildlife Conservation Association
Troy Hansel	Country Director	Wildlife Conservation Society (WCS)
Sebastian Schrader	Regional Coordinator, Forestry	World Wildlife Fund (WWF)
Kathryn Michie	Advisor	WWF
Sidavone Chanthavong	Forestry Advisor	WWF
Multilateral / Regional / Bilateral Development Partners		
George Buchholz	Principal Advisor, CLIPAD	German Development Agency (GIZ)
Bruno Cammaert	Head, Environment Unit	United Nations Development Programme (UNDP)
Satoshi Fujita	Forestry Advisor	Japan International Cooperation Agency (JICA)
Alexander Hinrichs	Regional FLEGT Advisor	European Union
Kota Hiranuma	Chief Advisor	JICA
Khankeo Moonvong	Program Officer	European Union
Viengsavanh Sisombath	Program Officer	JICA
Private Sector		
Peter Fogde	Senior Environmental Scientist	Stora Enso
Nanong Khotpathoum	Executive Director	Earth Systems Lao
Peter Okxen	Senior Environmental Scientist	Earth Systems Lao

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Name	Title	Organization
LIBERIA		
Government		
Dr. Cecil T.O. Brandy	Chairman	Land Commission
James B.A. Dennis	World Bank Project Coordinator	Land Commission
Dr. Roosevelt Gasolin Jayjay	Minister	Ministry of Lands, Mines and Energy
Kederick F. Johnson	Assistant Director	Forest Development Authority
T. Felix Morlu	Geologist/Assistant Minister	Department of Planning and Development
Beauford O. Weeks, I. Msc.	Assistant Minister for Energy	Ministry of Lands, Mines and Energy
Moses D. Wogbeh, Sr.	Managing Director	Forest Development Authority
Community Consultations		
Joseph G. Darsaw	Clan Clerk/Representative	Bodowea Town, River Cess County
G. Abednego Dunbar	Paramount Chief	Bodowea Town, River Cess County
Emmanuel P. Fleming	Office Clerk	Bodowea Town, River Cess County
James T. Kpah Sr.	General Town Chief	Bodowea Town, River Cess County
James T. Jomah	District Supervisor	Bodowea Town, River Cess County
Joseph B. Joe	Paramount Chief	Bodowea Town, River Cess County
Daniel D. More	Paramount Chief	Bodowea Town, River Cess County
Anjali Nayar	Community Representative	Bodowea Town, River Cess County
Harris Peters	Town Chief	Bodowea Town, River Cess County
Joseph W. Sackor	Commissioner	Bodowea Town, River Cess County
Nora Saye	District Commissioner	Bodowea Town, River Cess County
Morris G. Tarr	District Clerk/Jo River	Bodowea Town, River Cess County
NGOs / Civil Society Organizations / Foundations / Research Institutes / Academia		
Alfred Brownell	Director	Green Advocates
Thomas Doe Nah	Executive Director	CENTAL
Samuel G. Jacobs	Bishop	Alexandria, Liberia
Amanda Rawls	Program Advisor and Legal Associate	Carter Center
Salifu M. M. Sledge	Country Director	Oxfam
Silas Kpanan' Ayounng Siakor	Director	Sustainable Development Institute
Multilateral / Regional / Bilateral Development Partners		
Alex Hartman	Project Coordinator	Norwegian Refugee Council
Claudia Hermes	Resident Representative in Liberia	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Francis Kai Kai	Chief of Civil Affairs Section	United Nations Mission in Liberia
Giorgio Kirchmayr	Head of Program	GIZ—German Development Corporation
Gregory Kitt	Project Manager	Norwegian Refugee Council
Tiago de Valladares Pacheco	Emergency Coordinator	FAO—Food and Agriculture Organization of the United Nations
Guglielma da Passano	Chief Technical Advisor Liberia	UN-HABITAT Liberia Office
Kimberly Rosen	Acting Head of Operations	EU
Dominic Sam	Civil Affairs Officer	United Nations Mission in Liberia (UNMIL)
Tesfu Taddese	Chief of Civil Affairs	UNMIL
Private Sector		
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Franklin B. Cole	Credit Manager	International Bank (Liberia) Limited
Francis A. Dennis, Jr.	President and CEO	LBDI
Matteneh-Rose L. Dunbar	Administrator	RANTO Petroleum Liberia Limited
Trevor Kalinowsky	Representative	Monkeyforest Consulting
Maxwell Kemaya	President	Liberia Business Association
Mr. John A. Kokulo	General Manager	MAKO Business Inc.
Mrs. Mary K. Kokulo	Financial Manager	MAKO Business Inc.
Vijay Maira	General Manager	Liberian Agricultural Company
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LIST OF PERSONS CONSULTED

Name	Title	Organization
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Longoria	Mexico	
Raul Herrera Massieu	Coordinador de Comunicacion	CONABIO
	Corredor Biologico Mesoamericano Mexico	
Salvador Anta Fonseca	Gerente de Silvicultura Comunitaria	CONAFOR
Ignacio Ávila Mujica	Jefe del Departamento de Silvicultura Comunitaria en Michoacán	CONAFOR
Barbara Baltazar	Coordinadora del Programa en Michoacán	COINBIO
Carlos Contreras Lira	Jefe del Departamento de Conservación Comunitaria de la Biodiversidad	CONAFOR
Roberto Benjamin Cabral y Bowling	Director General Adjunto de Financiamiento Estrategico	Mexico Monarch Biosphere Reserve
Felícito García Juárez	COINBIO in Oaxaca	CONAFOR
Carlos Edgar Gonzalez Godoy	Coordinador de Proyectos Ambientales financiados con crédito externo	CONAFOR
Carlos Enrique Gonzalez Vicente	Gerente Regional	CONAFOR
Lourdes González Carmona	Ejecutivo Sectorial	NAFIN
Mario Govea Soria	Former Head of Treasury	NAFIN
Rocio Custodio Arriaga	Analista Administracion de Proyectos	NAFIN
Sergio Humberto Graf Montero	Coordinador General de Produccion y Productividad	CONAFOR
Jesús Victoriano Hernández Pérez	Jefe del Departamento de Silvicultura Comunitaria en Oaxaca	CONAFOR
Isaías Daniel Hinojosa	Jefe de Departamento de Dendroenergia	CONAFOR
Helena Iturrabarria Rojas	Directora General	Instituto Estatal de Ecología y Desarrollo Sustentable del Gobierno del Estado de Oaxaca
Ramiro López	Subgerente Operativo	CONAFOR
Benjamin Luna	Asesor, SEDRU	CONAFOR
Humberto Martinez Bautista	Lic. en Estadistica	CONAFOR
Victor Hugo Martinez Cintora	Subgerente de seguimiento de capacitacion a productores	CONAFOR
Roberto de la Maza	Certificación de Conservación Voluntaria	CONANP
Miguel Mejía Acevedo	Departamento de Silvicultura Comunitaria	CONAFOR
Mauricio Mendoza B.	Coordinador de Asesores	CONAFOR
Salvador Moreno García	Gerente Estatal en Michoacán	CONAFOR
Guillermo Munoz Galindo	Departamento de Control Estadístico	CONAFOR
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Name	Title	Organization
NGOs / Civil Society Organizations / Foundations / Research Institutes / Academia		
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Ejido & Community Consultations		
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Comunidad Ixtlán de Juárez, Oaxaca		
Comunidad Llano de las Flores, Atepec, Oaxaca		
Comunidad San Juan Bautista Atepec, Oaxaca		
Comunidad San Miguel y San Gabriel Etla, Oaxaca		
Comunidad Santa Catarina Ixtepeji, Oaxaca		
Comunidad Santiago Comaltepec, Oaxaca		
Comunidad Santiago Tenangco, Oaxaca		
Comunidad Santiago Xiacui, Oaxaca		
Ejido Barranca del Calabozo, Pihuamo, Jalisco		
Ejido El Jorullo, Puerto Vallarta, Jalisco		
Ejido El Empedrado, Mascota, Jalisco		
Ejido Emiliano Zapata, Jalisco		
Ejido Huatziran, Michoacán		
Ejido Ichamio, Michoacán		
Ejido La Primavera, Jalisco		
Ejido Villa del Mar, Cabo Corrientes, Jalisco		
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PERU		
Government		
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Eduardo Durand	Director General of Climate Change	Desertification and Hydrological Resources
Alvaro Gailour	Specialist	PROFONANPE
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Javier Roca	Director General	International Economic Affairs
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NGOs / Civil Society Organizations / Foundations / Research Institutes / Academia		
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Sonia Dominguez	Director (Executor of Administrative Contract for Manglares de Tumbes National Sanctuary)	Mechanismos de Desarrollo Alternos (MDA)
Marc Dourojeanni	Former Chief Environment Officer IDB	Founder of Pronaturaleza
Roberto Espinoza	Chief of Climate Change and Forest Programs	AIDISEP
Amalia Cecilia Delgado	Provincial Health Officer	Association for Research and Integrated Development (AIDER)
Rodríguez		Loero—Jorge Chavez Check Point
Rushdie Flores	Park Guard	MDA
Javier Guzman Chirnos	Director	President of Producers Association
Don German	Familia Calvo Senuiri	AIDER
Deyvis Christian Huaman	Regional Coordinator for Madre de Dios	
Mendoza		
Benjamin Lau Chiong	Agroforestry Technician	AIDER
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John Machaca Centry	Executor of Administrative Contract for the Salina and Aguada Blanca National Reserve	DESCO
Jaime Nalvarte Armas	Executive Director	AIDER
Lucila Pautrat	Executive Director	Peruvian Society for EcoDevelopment
Roxana Ramos Delgado	Coordinator of Projects	PRONaturaleza
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Molvina Zevallos	President	DESCO
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Name	Title	Organization
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Government		
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Dr. Robert R. Azmetov	Deputy Head of the Dept. of Tech. Devl. & Intl. Collaboration	Federal Forest Agency of Russia
Mrs. Irina Fominykh	Deputy Director of Department	Min. of Natural Resources and Environ. Protection
Mr. Oleg Karev	Head of International Cooperation Unit	Federal Forestry Agency
Mr. Karpachevsky Mikhail	Head of Forest Program	Center for Nature and Conservation
Mrs. Alena Mikhel	Lead Specialist (Department of International Relationships)	Min. of Natural Resources and Environ. Protection
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Mr. Vladimir Soldatov	Director	Federal Forestry Agency (Rosleskhoz) Krasnoyarsk
Dr. Vasily Tuzov	Deputy Director	Federal Forest Agency Russian Center of Forest Health
Mrs. Natalya G. Vavilova	Deputy Head (Department of International Relationships)	Min. of Natural Resources and Environ. Protection
Mr. Shuvaev Yuri	CCI RF Deputy Chairman	Committee for Nature Management and Ecology
NGOs / Civil Society Organizations / Foundations / Research Institutes / Academia		
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Andrei Ptichnikov	Director	FSC Russian National Office
Asti Roesle	Forest Campaigner	Greenpeace Russia
Nikolay Shmatkov	Forest Policy Projects Coordinator	WWF-Russia
Alexey Yaroshenko	Head of Forestry Policy	Greenpeace Russia

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Name	Title	Organization
SOUTH SUDAN		
Government		
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Dr. Lewis K. Jaja	Director General, Special Projects	Min. of Animal Resources and Fisheries, Republic of Sudan
Dr. Makuei Malual Kaang	Under Secretary	Govt. of South Sudan, Min. of Animal Resources & Fisheries
Victor Wurda LoTombe	Director General, Environmental Affairs	Min. of Environment, Govt. of South Sudan
Yambio		
Cde. Sapana A. Abuyi	Deputy Governor & Minister	Min. of Commerce, Trade and Investment
Clement Philemon Baime	Director General	Min. of Labor, Public Service and Human Resource Development
NGOs / Civil Society Organizations / Foundations / Research Institutes / Academia		
David K. Deng	Research Director	South Sudan Law Society, South Sudan
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Dr. Keith Jennings	Senior Associate and Regional Director Southern & East Africa	National Democratic Institute for International Affairs
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Fabian Kreuzer	Asst. to Program Manager	United Nations Environment Programme South Sudan
Tom M. Omwange	Officer in Charge	United Nations Environment Programme South Sudan
Private Sector		
Gabriel Abraham	Advisor to the Ministry of Cabinet Affairs	Deloitte Consulting LLP
Iduol Ahang Beny	Managing Director	Weaver Group, Ltd.
Bocar E. Dia	Director	British American
Charlie Goldsmith	Chief Executive Officer	Charlie Goldsmith Associates, Ltd.
Peter Graves	Director, Business Development	Crown Agents USA, Inc.
Maya Jafe	Business Development Manager—Health	Crown Agents United Kingdom
Richard Laliberte	Chief of Party	Deloitte Consulting LLP

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Name	Title	Organization
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Government		
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Jorge Rucks	Director Nacional de Medio Ambiente	Ministerio de Vivienda, Ordenamiento Territorial, y Medio Ambiente
Alicia Torres	Coordinadora del Area de Energias Renovables y Cambio Climatico	CEFIR Integracion Regional
Hector Villaverde	Programa MERCOSUR Sustentable	CEFIR Integracion Regional
NGOs / Civil Society Organizations / Foundations / Research Institutes / Academia		
		Vida Silvestre
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Alexander Burwood	Gerente de Fomento	UPM S.A.
Gervasio Gonzalez	Environmental Manager Fray Bentos Mill	UPM S.A.
Ivan Grela	Jefe de Medio Ambiente y Certificacion	UPM S.A.
David Henderson	Director	Henderson Servicios de Maquinaria
Magdalena Ibanez	Gerente de Comunicaciones y RSE	UPM S.A.
Estela Machin	Mill Controller Fray Bentos Mill	UPM S.A.
Ricardo Methol	Gerente de Desarrollo Tecnico y Planeamiento	UPM S.A.
Jussi Penttila	Mill General Manager Fray Bentos Mill	UPM S.A.
Guillermo Quincke	Jefe de Tesoreria	UPM S.A.

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LIST OF PERSONS CONSULTED

Name	Title	Organization
The Racewood Conference, 29-30 September 2011, Pointe Noire, Republic of Congo		
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Susanne Breilkopf	Political Advisor, Forests & Climate	Greenpeace International
Caitlin Clarke	Research Analyst	World Resources Institute
Adam Grant	Senior Associate	World Resources Institute
Espoir Tshakoma	Coordonnateur des projets	ERND/GTCR
David Young	Team Leader, Forest Sector Transparency	Global Witness
Private Sector		
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Paolo Bracciano	Managing Director	Regalis International
Marie-Yvonne Charlemagne	Directeur Financier	Rougier
Matteo Dassi	Sales Manager	SMCI
Tobias Ernst	Directeur General	Lufthansa Lignes Aeriennes Allemandes
Alessio Fuser	Directeur General	Likouala Timber S.a.
Robert Hunink	President du Conseil d'Administration	Congolaise Industrielle Des Bois
Jean-Gaël Jourget	Forest Project Specialist	Forest Resources Managements
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Ralf Kucharchzyk	Geschäftsführer	Treemex
Abel Guillén Mateu	Sales Director	Green Resources
Brent J. McClendon, CAE	Executive Vice President	International Wood Products Association
Eric Van Mierlo	Director General Adjoint	Bois et Scierie du Gabon
Cedric Montresor	Business Development Manager	Helveta
Alphonse Muhindo	Secrétaire General	Reseau CREF
Valivambene		
Erik Jon Sneek, MSc.	Chief Executive Officer	Sneek Timber
Mathieu Schwartzberg	Assistant Technique Ingénieur Amenagiste	TEREA
Darren Thomas	Managing Director	Double Helixxx
Gauthier Tshikaya	Directeur Administrateur et Financier	IBI-Village
Eric Van Mierlo	Director General Adjoint	Bois et Scierie du Gabon
Francoise Van de Ven	Secrétaire Generale	Federation des Industriels du Bois
Multilateral / Regional / Bilateral Development Partners		
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Shelley Gardner	Policy Advisor	USDA Forest Service International Programs
Valerie Merckx	REDD Team Leader	European Forest Institute

Appendix C

Social Media Outreach

Stakeholder outreach was an important design element for this evaluation because of the many stakeholders in the forest sector, as well as the complexity and dynamics of the sector. With this in mind, IEG's Forest Evaluation team and Online Communications team developed a communications strategy and outreach plan that used a variety of social media channels. The goals of the plan were to connect with beneficiaries worldwide, to solicit primarily qualitative and quantitative data that could be triangulated with other sources of data collected by the team. The outreach was aimed to make the evaluative process transparent and participatory, and to build a group of followers who could then champion the study's findings when it was completed. Implementation of the plan began in September 2011.

Outreach Strategy

The structure of the outreach and knowledge sharing for the study reflected several stages of the evaluation cycle; the outreach techniques used were tailored accordingly. At the preparatory stage, the team developed a content strategy and selected the online and social media channels that would offer the best mix of benefits to help the team achieve its outreach goals. At the field assessment stage, the team systematically updated its channels and reached out to stakeholders to help collect information and insights prior to and during country visits by evaluators. At the review stage, the team used its channels to complement and triangulate the data gathered from the field. At the completion stage, which is forthcoming, the team will publish the report across the online and social media channels to disseminate and enhance use of the report's findings, lessons, and recommendations.

Content Strategy

The content strategy described the type of resources and messages the team would share on social media and how it would use the selected online spaces—Facebook, LinkedIn, Twitter, plus an evaluation website—to achieve its goals. In implementing the strategy, the team would ask groups of stakeholders to share their knowledge and experiences on key evaluative questions. The team would also post daily updates to the content on its Facebook page to make the page a valuable source of information on forest-related issues and maintain the interest of users. Finally, the team would send Facebook and Twitter updates of evaluation missions and meetings with civil society organizations to give Facebook and Twitter followers an

opportunity to raise questions and provide feedback prior to country visits by the evaluation team, as well as to meet with the team, if feasible.

Methodology

The selected online and social media channels enabled the team to reach a targeted set of stakeholders and offered an opportunity to build an engaged audience throughout the evaluation process. To achieve its outreach goals, the team launched a Facebook page, used IEG's existing Twitter account to cross-post updates. The team also used the personal LinkedIn accounts of staff to post evaluative questions in targeted professional groups, and established an evaluation-specific page on the IEG website. The team also used online networks and an email list serve to solicit feedback.

To build its Facebook audience, the team used ads that targeted users who mentioned forest-related topics in the interests section of their personal profiles. The targeted topics included forests, sustainable forest management, natural resource management, and the environment, among others. Ads also targeted Facebook users living in the countries visited by the evaluation team, and the countries that have large masses of forests.

On LinkedIn, the team identified professional groups with attributes relevant to the evaluation. Those attributes included large networks with professionals working or interested in sustainable forest management, forest policy, sustainable natural resource management, environmental issues, conservation, and reducing deforestation and degradation.

On Twitter, IEG created a distinct hashtag¹⁸ (#ForestEval) to tag its content and share it with other users. IEG also identified organizations and individuals that are working on forest-related issues and are active on Twitter. Content was then tagged to their profiles to solicit more responses.

Online efforts were supplemented by e-mail outreach to civil society organizations and stakeholders in some of the countries visited, such as Brazil, the Democratic Republic of Congo, and Peru, to help gather more local knowledge and contacts with relevant organizations and networks.

All of the questions raised on social media were aligned with the evaluative questions and topics of the study. On Facebook, the team used a combination of open-ended and poll questions to solicit feedback. Each question was cross-posted on Twitter several times using #ForestEval and tagging relevant groups. On LinkedIn, team members posted evaluative questions on relevant online networks that target forest

and environment experts (for example, Forest-L, African Community of Practice on Managing for Development Results, and the Center for People and Forests [RECOFTC]) to reach out to their followers for feedback and raise overall awareness of the evaluation.

The questions were posted sequentially allowing a week to two weeks for users to respond. Each question was reposted several times.

While travelling on mission and holding meetings and workshops with civil society organizations, the IEG forest team received positive feedback on the active outreach and transparency of the study – as well as the ability to track team activities through social media channels, particularly the Facebook page. Many global and regional environmental organizations followed the page and provided feedback on its use. For instance:

“Looking forward to the information this page is sure to bring!” –
Posted on Facebook by the Global Forest Information Service

Main Messages and Data

PARTICIPATORY FOREST MANAGEMENT

IEG solicited comments on participatory forest management (PFM) models and best practices via social media. The main questions that online users were asked to answer were: “What are the benefits and challenges of community forest management?” and: “Is it sustainable and does it generate alternative sources of income for communities?” The questions were posted on Facebook, LinkedIn, and Twitter as well as via relevant e-mail distribution lists. Participants worldwide submitted 78 responses. The discussion centered on eight topics (table C.1).

Participants generally agreed that the PFM model leads to positive environmental outcomes and helps achieve conservation goals and prevent deforestation. Successful PFM was described as bringing benefits and opportunities that improve the livelihoods of people living in and around forest areas. Participants shared examples that provided for sustainable land use while also providing quality of life benefits to the community:

Overall, our local partners believe that community forestry is a vital tool both in increasing communities’ benefits from the forest and in reducing deforestation. Several examples were cited by our partners where local communities were succeeding both in reaching market with timber and ‘non-timber forest products,’ and in managing forests

more sustainably than other models (for example, concession-based logging). Studies and feedback from Latin America in particular identified the potential for reducing deforestation through community management of forests.

– Response to e-mail via Forest-L from a Team Leader in International Policy
Environmental Governance at Global Witness, United States.

Table C.1. Social Media Topics

Issue area	Percentage	Country examples presented by the participants
Deforestation	10	Belize, Brazil, India, Indonesia, Nicaragua, and Pakistan.
Political will and government support	17	Australia, Botswana, Chile, India, Indonesia, Mexico, Mongolia, Nepal, Pakistan, Philippines, Tanzania, and Uganda.
Social inclusion	9	India, Uganda, United States, Zambia
Livelihoods	23	Australia, Belize, Botswana, Brazil, Cameroon, India, Kenya, Mexico, Nepal, Nicaragua, Pakistan, United States, and Zambia.
Conflict resolution	21	Botswana, Cameroon, Ghana, India, Mongolia, Nigeria, Peru, and Tanzania.
Corporate model	8	Australia, Belize, Papua New Guinea, and the United States.
External funding / sustainability of the model	27	Australia, Botswana, Cameroon, Indonesia, India, Kenya, Mexico, Mongolia, Nepal, and Pakistan.
Capacity building for communities	13	Belize, Cameroon, Kenya, India, Indonesia, Uganda, and the United States.

Participants also highlighted the importance of including a broader group of stakeholders in the PFM decision-making process and building conflict resolution mechanisms into projects; both were considered attributes for long-term project success. Empowering communities to address various types of conflicts to ensure the cohesiveness of the population living in the PFM areas was a repeated recommendation and concern. A number of participants also discussed inclusion of the broader population, and identified engaging women and youth early on as important. A user from India said:

We are mainly working in the eastern and northern parts of India. I can give you example of the works done by Joint Forest Management Wing of Ramakrishna Mission (an NGO) in Puruliya district of West Bengal. The Forest Protection Committee members take active participation in protection specially the women who make rounds around the forest. These members are trained by the NGO on Lac and Tasar cultivation, medicinal plants cultivation, agro-extension activities etc. for sustainable livelihood.

—LinkedIn user, India, Environmental and Development Researcher and Co-Founder, Society for Natural Resource Management and Community Development (SNRMCD)

Participants also commented on the political will of governments to support PFM through appropriate policies and regulations, as well as through proper oversight while giving local people autonomy in decision-making.

Similarly, participants commented on the challenges of involving private investors or incorporating corporate attributes into PFM-related projects, expressing concern that these attributes may focus on short-term profitability rather than long-term sustainability, including benefits for the communities and the environment. To help mitigate these issues, respondents suggested strict guidelines and incentives for conservation.

However, several comments expressed concern about the model's sustainability once external funding is removed. One participant from Chile said:

Since 1974 or so, Chile has operated a set of programs for the recovery of degraded former forest land. These programs were refocused on small landowners and community-owned land in the 1990s, providing strong incentive for recovery of former forest land both as commercial and non-commercial forest, but the government of Chile drastically reduced the level of support for these programs in 2007 and since that time the programs have not been very productive.

—LinkedIn user, Chile, consultant at a Natural Resource Group company

Several participants discussed the role of external funding in PFM projects. It was generally agreed that long-term donor support of capacity building, training in enterprises, and "patient capital" are needed to engage the community – and to protect the project from conflict and vested interests. Participants shared experiences after project closure, describing conflict and the difficulty of sustaining economic and conservation benefits:

In Oku Cameroon where we have given independence to Community-Based Forest Management (CBFM), we're now in a strange crisis due to interpersonal conflicts amongst the local authorities concerned in the CBFM committee. This is growing real bad because there is no foreign funding agency that can arbitrate this conflict with their financial power. So what can we do?

APPENDIX C

SOCIAL MEDIA OUTREACH

— *LinkedIn user, Cameroon, forestry engineer at Ministry of Forestry and Wildlife*

Similar experiences and suggestions on how to mitigate these issues were also presented. Participants agreed that communities should work with project managers and facilitators to set up an effective exit strategy that leaves behind a strong governance framework and agreed procedures before the donor funding period ends.

TECHNOLOGY TRANSFER

The team conducted a Facebook poll on the type of smart technologies people use to promote sustainable forest management gathered. Table C.2 shows a breakdown of the responses.

Table C.2. Facebook Poll: What smart technology (mobile phones, personal digital assistants [PDA] devices, etc.) have you or someone you know used to promote sustainable forest development in your community?

Response	Number of respondents	Percent of total responses
Satellite images	83	61
Databases/Management Information Systems	32	24
Mobile phones	8	6
Online mapping tools	3	2
Smart phones/personal digital assistants	3	2
Other	1	1
None	6	4
Total	136	100

Source: IEG

MONITORING OF FOREST RESOURCES

Other open-ended questions posted through social media channels included: “What do you think are the main challenges/constraints to monitoring forest resources?” and “What tools/methods have you used to facilitate monitoring in your work?” Participants generally agreed that a major constraint to monitoring in the forest sector is the high cost of doing so. Monitoring, some pointed out, requires repeat measurements over a long period, so finding a budget for this continuous process is inherently more challenging than for a one-time event. An interesting discussion thread developed:

According to USAID, the Congo Basin forests cover 700,000 mi², which is about 1.8 million km² or 180 million hectares. A \$0.25/hectare inventory there would cost \$45 million. Carrying out such an

inventory every 10 years would imply a budget of \$4.5 million per year shared between the six countries of the Congo Basin. And, given the pressures on that forest, would every 10 years be enough? How are these countries to pay for this monitoring?

—*LinkedIn user, Chile, consultant at TECO Natural Resource Group Chile SpA.*

Similarly, participants discussed the types and cost of technologies used in their experience. Some commented on the lack of “plug-and-play” solutions that would be accessible to non-technical users, and on the importance of producing data in a format that can be easily shared and accessed by multiple users (open data).

Another discussion developed around the importance of including local communities and actors in the design and implementation of monitoring processes. According to the participants, monitoring programs engage stakeholders with a wide range of experiences and uses of the forest as described by one participant:

In my own experience strong monitoring programs also involve much more than just monitoring—they involve a great deal of discussion around the issues that are central to the kinds of monitoring that are being carried out. They engage people in discussions and opportunities for further education on various topics related to the key issues. As a result, people and the agencies that support them see the value of the monitoring and from day 1—as an opportunity to learn from one another and from others outside the organization and as an opportunity to start applying that knowledge while the monitoring program itself is being geared up.

—*LinkedIn user, Canada, Strategic Analyst, Environment & Economics at Tesera Systems Inc.*

This topic was explored using an online poll that elicited responses from 272 people. An overwhelming majority agreed that it is important to engage local communities in designing and monitoring forest-related projects (table C.3).

APPENDIX C

SOCIAL MEDIA OUTREACH

Table C.3. Do you think it is important to involve local communities and actors in the design and implementation of activities to help monitor and protect the forest?

Response	Number	Percentage
Yes	252	89
No	31	11
Total	283	100

Source:

DEFORESTATION

To gather data on the question: “What are the main drivers of deforestation in your country and/or community?” IEG surveyed online users and posted an open-ended question on Facebook and LinkedIn (table C.4).

Table C.4. What do you think are the main pressures / drivers of deforestation in your country?

Response Choices	Number	Percentage
Illegal Logging	120	73
Clearing for Pasture (cattle ranching)	22	13
Expansion of commodities (soybean, palm oil, and so on)	11	7
Conversion to subsistence agriculture	5	3
Other (please explain below)	6	4
Total	164	100%

Ninety-one people responded to IEG’s Facebook poll. The majority indicated illegal logging was one of the main factors driving deforestation (table C.4). Clearing for pasture gathered the second largest number of responses.

IEG also collected 27 open-ended comments on LinkedIn’s REDD+ Network and on Facebook. The open-ended responses posted to the question: “What are the main drivers of deforestation?” highlighted urbanization, population increase, charcoal burning, mining and burn-based agriculture and poverty as key contributors to deforestation.

IEG received eight more comments on deforestation on LinkedIn’s Natural Resource Management Professionals group when posing the question about community forest management (CFM). The respondents generally agreed that CFM leads to less deforestation and better conservation. One user commented:

In Nicaragua, for example, part of the Bosawas Reserve that is managed by the indigenous community was deforested 16 times less

than the surrounding area. In Brazil, Alto Juruá, the oldest extractive reserve in the country, maintained 99 percent of its forest cover 10 years after it was created. Forests were protected while income diversification appears to have improved the livelihoods of local residents.

— *LinkedIn user, President at Satya Development International LLC.*

CONCESSIONS

The open-ended question: “Can industrial forest concessions help achieve sustainable development goals?” was posted to social media and targeted list serves. The responses illustrate the tension between the profit-maximizing goals of private companies and the need to use forest lands sustainably. Some users pointed to positive experiences in providing concessions to private companies around forest areas, such as in Canada, while others described negative consequences of such concessions:

My experience with the private forest contractors has been a depressing one. The forest contractors have played havoc with forest wealth in Pakistan, either working under the government forest departments or under the autonomous forest corporations. They have plundered and exploited the forest dependent communities as well.

— *LinkedIn user, Pakistan.*

Furthermore, participants noted that in certain cases, establishing a concession regime is but a step in conversion of these forests, beginning with degradation and ending in deforestation. This effect runs counter to sustainable forest management efforts and endangers the people that live in and around concessions. Discussants noted that concessionaires are focused on maximizing revenue and do not normally seek sound forest management practices unless such practices are required, such as by a certification mechanism.

However, participants explored some of the conditions that would enable timber concessions to achieve sustainable development goals. These conditions ranged from basic productive factors, such as proper wood quality and market conditions to high commitment from key stakeholder groups (government, concessionaire, and community). Strong governance and oversight were also considered key to ensuring concessions deliver the agreed social and environmental benefits. A strong legal framework, together with enforcement capacity and conflict resolution mechanisms, should also be well established before setting up a concession. Participants generally

agreed that local rights and land-tenure need to be considered before the concession is awarded, as described in the following comment:

Fundamental is the underlying ownership or tenure rights to the land, because so often these concessions are given by governments where the land traditionally belongs to indigenous or community groups, and these groups have depended upon the land for their livelihood. When tenure isn't recognized and rights to timber are sold to "concessions", poverty is exacerbated and the land and local forest people lose. Where rights and tenure are recognized, concessions or other arrangements can be beneficial to forest people, to society as a whole, and to the forest, if done well and if independent monitoring is in place.

— LinkedIn user, United States, fellow and consultant at Rights and Resources Group

While not a panacea, under the right conditions, many participants saw certification as a way for concessions to help achieve sustainable development goals:

Certifying groups must still operate within the policy framework of the body they are certifying, and they must also have a keen understanding of indigenous culture and local forest ecology. In parts of North America, where land ownership provides for fairly non-complex solutions, forest certification may work. In areas where forest ecosystems are complex and disturbance driven, such as the west and southeast, the Forest Stewardship Council (FSC) and other certifying systems do not work.

— LinkedIn user, Canada, Fire Ecologist at R.W. Gray Consulting Ltd.

THE ROLE OF PLANTATIONS

The team solicited views on plantation forests and their role in reducing pressure on natural forests, through both an open-ended discussion and an online poll. A majority of respondents in the poll view the role of plantation forests as complementary to natural forests (table C.5), and participants provided examples of conditions necessary for this to be true. Appropriate land use policies and management plans are considered underlying conditions for the success of plantations in complementing a country's use of its natural resources at the landscape level. Other necessary conditions include appropriate implementation

and enforcement mechanisms as well as strong political will and buy-in from all stakeholders.

Table C.5. What is the role of plantation forests in reducing pressure for wood from natural forests?

	# Responses	Percentage Total Responses
Plantations play a substitute role	6	15
Plantations play a complementary role	28	70
Plantations can threaten natural forests	1	3
Other (please comment below)	5	13
	40	100%

Source:

However, many participants acknowledged the inherent difficulties of establishing a balanced natural resource management system at the landscape level. They said that, if left unchecked, pressures from market forces, driven by supply and demand and limited only by profitability, would not lead to sustainable use of natural resources. Under these conditions, where landholders benefit from the sale of timber, the influx of timber from plantations could drive the price down and encourage conversion of the natural forest to other more lucrative activities. As one respondent noted:

The impact of plantations on natural forests will vary by location and time, in direct response to market forces and the effectiveness of policies and enforcement. If market incentives are strong enough, then there will always be someone willing to subvert regulations for short-term gain. Their primary method for achieving this is by either corrupting or simply relying on the ineffectiveness of politicians and agencies tasked with enforcement. In many cases though, agencies are constrained by weak policy frameworks.

– *LinkedIn user, Malaysia, Resource and Planning Manager at Forest Solutions.*

The effect of plantation forests on local and global environmental services received the most attention in the discussion. While some comments focused on the negative impact that monoculture plantations can have on biodiversity and conservation efforts, some participants described the possible complementary role that they can play within a broader landscape management scheme. Plantations were considered beneficial if they were planted on cleared or degraded land, if they included native

species and were not a monoculture, and if they helped meet the demand for wood and thus protected the natural forest. For example:

If natural forests are cleared for plantations, biodiversity would be adversely affected. [This] has happened in many countries in the past. But if an area has already been disturbed and is degraded biodiversity value may or may not [have] been much. I think before planning plantations in any area one must assess its impacts. If the priority is biodiversity conservation, do not raise plantations.

— *LinkedIn user, India, Natural Resource Management/forestry professional.*

Plantations were also seen as having positive and negative social impacts depending on their management. Some argued that in the right setting, well-managed plantation forests can be a source of “employment, income, and social benefits to thousands of communities in most countries of the world” (*LinkedIn user, Canada, independent renewables and environment professional*). Others argued that plantations had a negative effect on communities by reducing access to key livelihood components and by preventing them from partaking in natural or traditional activities. For example:

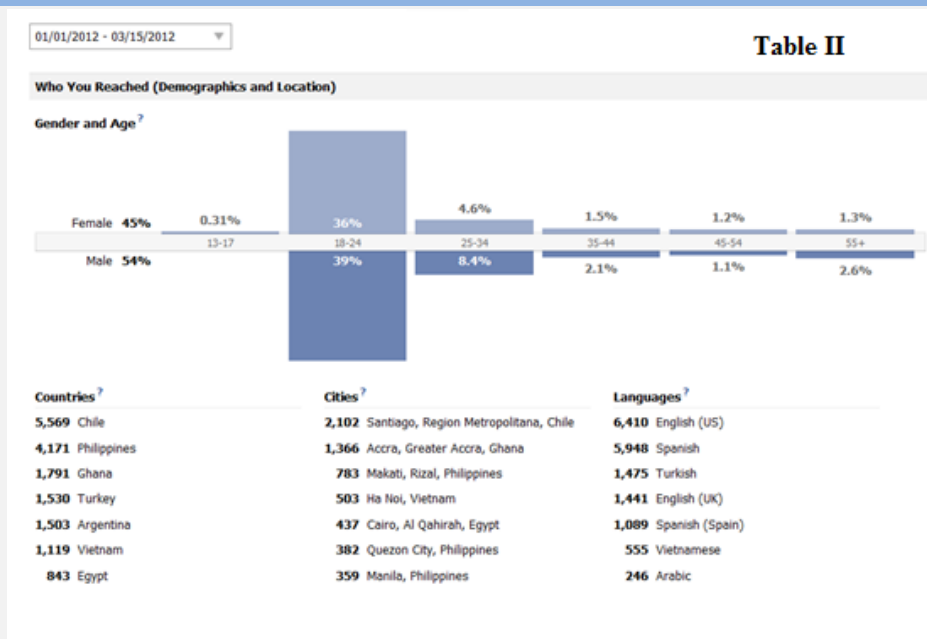
In a predominantly tribal milieu where forest-produce and agriculture make the backbone of the economy and culture, the eucalyptus plantation project has changed the community resource base for the worse.

— *Excerpt from a report as quoted by a LinkedIn User, India, LCF Facilitator at FairClimate Network.*

Overall Outreach Trends and Traffic

As of July 7, 2012, the Forest Evaluation Facebook page had over 6,056 followers. Over the past eight months, the demographics of page followers shifted from users in North America to users in the Middle East and North Africa regions and, currently, to a good spread of users across other continents. The geographic diversity of the followers shows the extent of the reach and the interest generated among diverse groups of people. The followers’ demographics are balanced between males and females, but with a larger representation in the group between 18-24 years old. Figure C.1 shows the details.

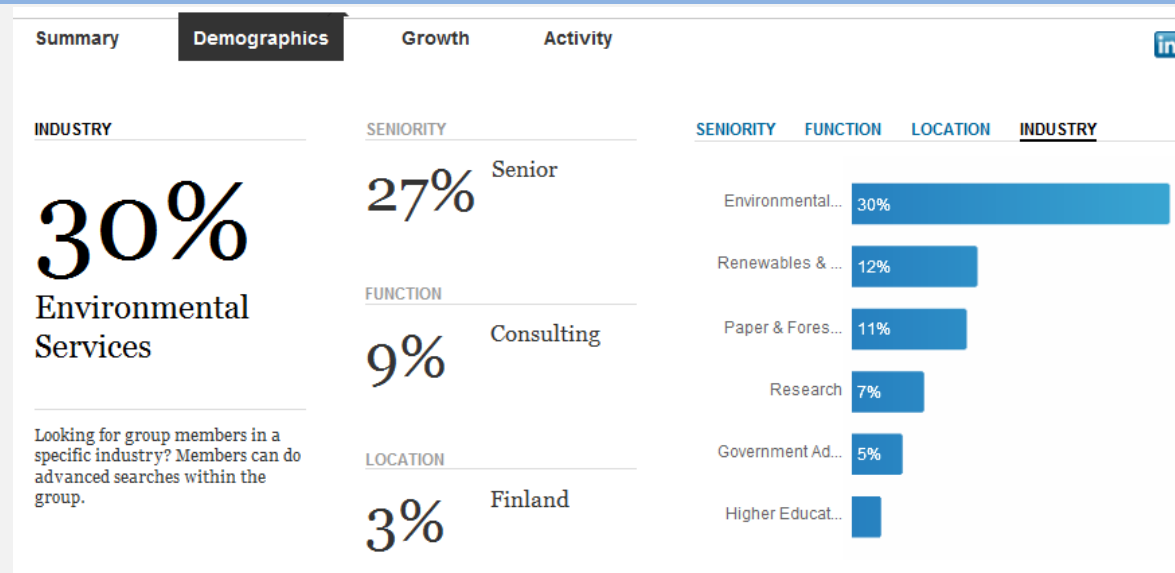
Figure C.1. IEG Stand-alone Facebook Page for Managing Forest Resources for Sustainable Development



Source: IEG. Facebook analytics.

Figures C2–C4 show the demographics of LinkedIn groups that were used to solicit stakeholder views.

Figure C.2. Global Forest Policy Networking Group on LinkedIn



Source: IEG, LinkedIn analytics.

Figure C.3. Natural Resource Management Professionals Group on LinkedIn

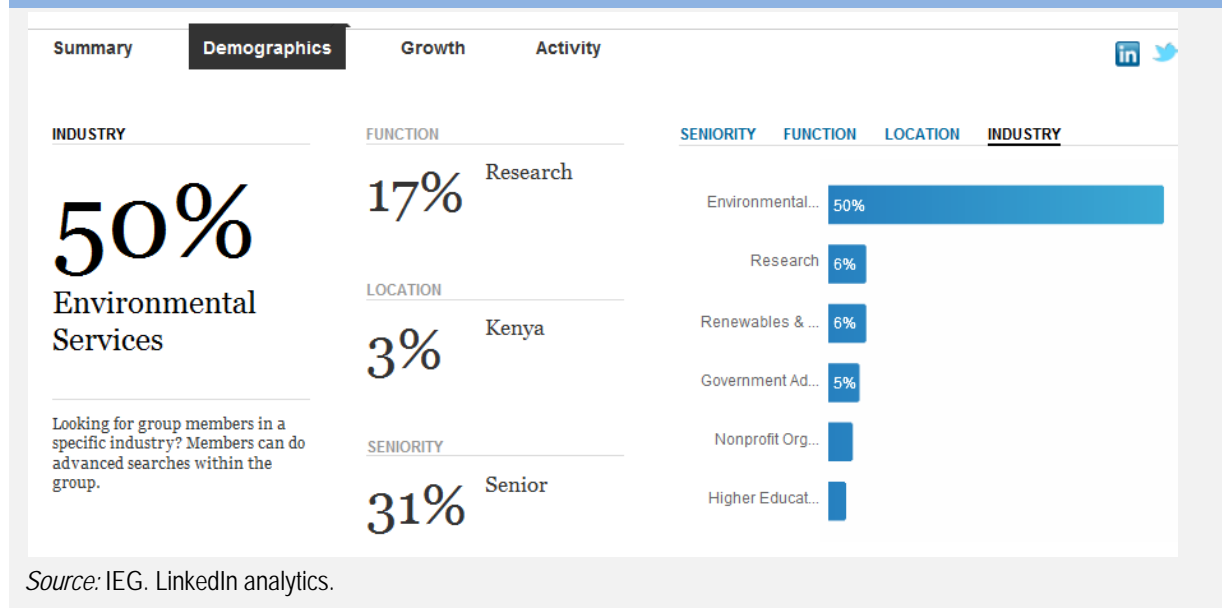
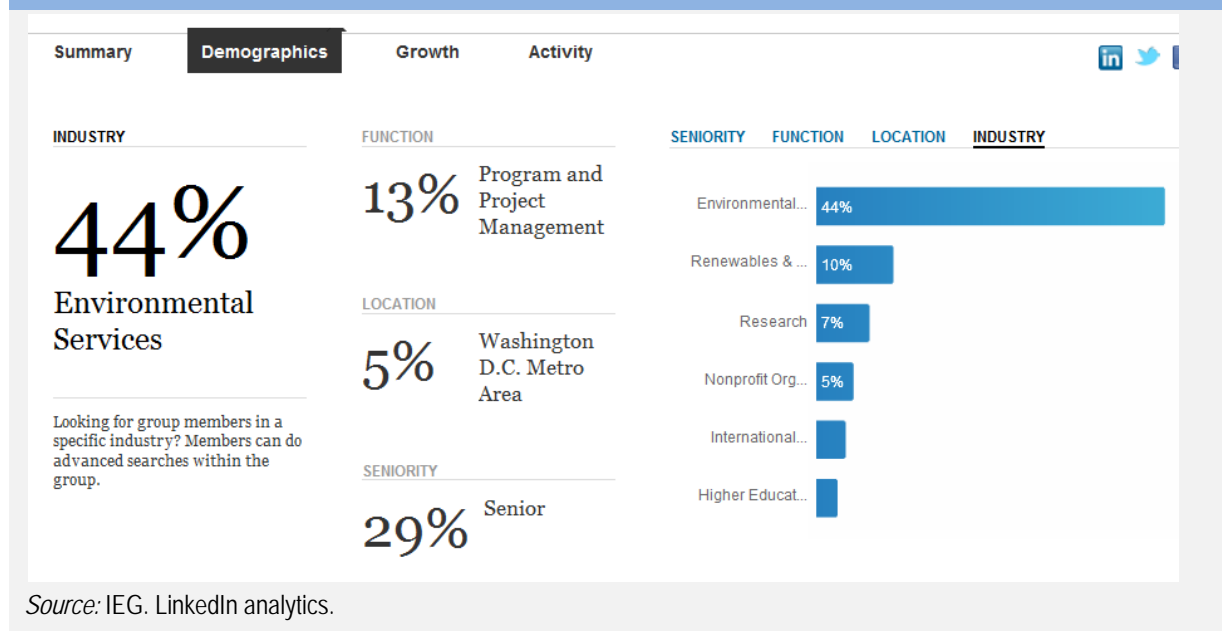


Figure C.4. REDD+ Network Group on LinkedIn



Having such a diverse and large following will be advantageous during the dissemination and follow-up on recommendations of the study. Users who have been engaged in IEG's social media channels, providing their input on the evaluative questions, and those who followed the study for over a year are expected to be more

likely to carefully look at the evaluation recommendations and adapt them to their particular circumstances and needs. The upstream outreach has also allowed the evaluation team to connect with stakeholders who would otherwise be unreachable.

Appendix D. Foest Logframe and Value Chain

	FULL FOREST CONSERVATION	PRIMARY PRODUCTION >>		>> PROCESSING >>	>> PRODUCTION >>
	Protected forests	Production Forests	Plantation Forests	Industrial wood processing Wood fuel processing	Wood based products Energy generation
VALUE CHAIN					
INPUTS/OUTPUTS					
Physical inputs	No significant man-made inputs needed	Transport infrastructure, seeds, saplings, fertilizers	Transport infrastructure, seeds, saplings, fertilizers, (groundwater resources)	Construction of processing plants Wood from natural & commercial forests and plantations Power, chemicals, water	Construction of production plants Sawn wood, veneer Pulp biofuels (pellets, charcoal) Power, chemicals, water
Service, financial and institutional inputs	Laws and regulations, land titles, marking, guarding and protecting the forests	Laws and regulations, land titles, guarding and protecting the forests, access to finance and technology, seeding, planting, thinning, harvesting	Laws and regulations, land titles, guarding and protecting the forests, access to finance and technology, seeding, planting, thinning, harvesting	Access to finance and technology, transport, operating and maintaining the plants	Access to finance and technology, transport, operating and maintaining the plants
Physical outputs	DNA bank for future research and high value pharmaceuticals and chemicals	Wood from commercial forests	Wood from plantations	Sawn wood, veneer Pulp Biofuels (pellets, charcoal)	Housing (construction, furniture) Paper and cardboard products Electrical power and heat
Service outputs	Habitat and livelihood for indigenous people. Conserving endemic flora and fauna. Landscape and recreational services. Mitigation of floods, landslides and climate change.	Landscape and recreational services, sustaining biodiversity. Mitigation of floods, landslides and climate change.	Mitigation of floods, landslides and climate change.		
LOGFRAME WBG INPUTS	WB: Support to policy reform, Biocarbon, and full conservation	WB: Support to policy reform, Biocarbon, and SFM projects IFC: Direct investments & AS, client concessions, request for certification, SFM	WB: Support to policy reform, Biocarbon, and SFM projects IFC: Direct investments & AS, client concessions, request for certification, SFM	WB: Creating an enabling environment for investments IFC: Direct investments and AS	WB: Creating an enabling environment for investments IFC: Direct investments and AS
WBG RESULTS	WB: Policies reformed, SFM projects implemented and fully conserved forest area increased	WB: Policies reformed, SFM projects implemented and SFM area increased IFC: SFM projects implemented and SFM area increased	WB: Policies reformed, SFM projects implemented and SFM plantation area increased IFC: SFM projects implemented and SFM plantation area increased	WB: Support to reform laws and regulations to enable investments IFC: processing plants with wood supply from natural and commercial forests & plantations implemented and SFM area increased, certified 3rd party supply	WB: Support to reform laws and regulations to enable investments IFC: production plants implemented with wood/fiber supply from integrated processing plants using natural and commercial forests & plantations. SFM area increased, certified 3rd party supply
WBG OUTCOMES & IMPACTS					
Poverty reduction	Jobs created and people raised from poverty	Jobs created and people raised from poverty	Jobs created and people raised from poverty	Jobs created and people raised from poverty	Jobs created and people raised from poverty
Sustainable Economic Development	Sustainable incomes to people and governments, revenues to companies	Sustainable private sector development, incomes to people and governments, revenues to companies	Sustainable private sector development, incomes to people and governments, revenues to companies	Sustainable private sector development, incomes to people and governments, revenues to companies	Sustainable private sector development, incomes to people and governments, revenues to companies
Local and global environmental services	CO2 reduced by avoided deforestation, biodiversity fully protected, protected areas increased	CO2 reduced by avoided deforestation, biodiversity partially protected, deforestation avoided	CO2 reduced, area afforested and reforested	Project influenced SFM forest area increased, CO2 and pollution reduced compared with counterfactual	Project influenced SFM forest area increased, CO2 and pollution reduced compared with counterfactual

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Notes

¹ The level of forest carbon emissions is still debated. Harris and others (2012) estimate 0.8 billion tons of Co₂ per year over 2000–2005, versus the 2.2 billion tons estimated by Baccini and others (2012). Although the studies are in agreement about the standing stock of carbon, the former study estimates emissions using remote sensing observations of deforestation, while the latter uses Food and Agriculture Organization (FAO) statistics, based on country reports that are known to be inconsistent and of variable quality. (Zarin 2012). But there are other methodological differences between the studies and consensus on emissions is lacking.

² Calculations of the sector's contribution to global GDP do not capture informal and illegal forest production or important subsistence forest uses.

³ The increasing likelihood that the under +2 degrees global warming path is unattainable implies that alongside mitigation, considerable emphasis needs to be placed on adaptation within the sector, for example, through appropriate seed and species selection and silvicultural measures to secure future forest vitality.

⁴ The extent (and in some cases even the existence) of forest services can vary. Some forests may provide no meaningful watershed benefits and be of little or no scenic value. Or the alternative land uses may themselves provide high levels of services. Note that forests can also provide other services (such as production of a variety of goods and recreation), but these may fall outside the scope of the payments for environmental services (PES) as other instruments are better suited to capturing their value.

⁵ In the Bank's Low Carbon development policy loan to Mexico (approved 2011), the government committed to publish an agreement that modifies the regulatory framework for forest management activities, including the simplification of administrative procedures for forest management. The Mexico Forest and Climate Change investment loan, approved in FY12, is a recent good practice example of the Bank's attempt to ease regulatory constraints on community forest enterprises through lending. The project appraisal document acknowledges the "high transaction cost due to forest regulatory compliance" and provides for studies designed to harmonize regulatory and development policies related to forests as well as support for "streamlining of the administrative framework for community-based forest management." Project design also includes indicators to track progress.

⁶ Despite attempts to better define and scientifically substantiate the term (Reynolds and others 2002; Middleton and Thomas 1997), "desertification" is commonly used by development practitioners to infer that devegetated areas (climate- or human-induced) are degraded (for example, persistent declines in biological productivity) due to human mismanagement. The term has also conjured up notions of a "marching desert" – an expanding front of denuded land expanding south from the desert edge. While such notions have been discredited within the academic community (for example, Tucker and others 1991), they still circulate within development and conservation circles. The current idea of the "Great Green Wall" suggests the persistence of such a conceptualization (World Bank 2011). The enactment of sustainable land management practices across a contiguous strip of

land ignores that these are highly socialized landscapes and could lead to significant political problems if not performed with the utmost of care.

⁷ The Chain of Custody Scheme in Liberia (*Liberfor*) was financed by PROFOR.

⁸ See World Bank. *Mainstreaming Social and Environmental Considerations into the Liberian National Forestry Reform Process*. AFTEN. October 2010. Add to Bibliography.

⁹ This has significant implications for the degree to which marginal groups are represented. Further, Bandiasky (2007) has noted that although many projects mandate the inclusion of women, they tend to hold secondary positions and some committees even created fictional female members. Simple inclusion in local management structures and participatory processes is insufficient to address fundamental issues of unequal power.

¹⁰ See Ribot (1999) and Agrawal and Ribot (1999) for a discussion of accountability and legitimacy.

¹¹ See the value chain approach in Appendix D, which can be used to illustrate the contributions of IFC operations to the three pillars of the 2002 World Bank Group Forest Strategy.

¹² The Social and Rural Research Institute (New Delhi) carried out a series of assessments in 2010 to understand the perceptions and experiences of beneficiaries and nonbeneficiaries of IFC farm-forestry Advisory Services in India. See “Assessing Private Partnerships in Development: A Farmers’ Perspective (October 2010).” Add to Bibliography- not listed.

¹³ See Business News Americas staff reporters. “Paper, cardboard recycling industry ranked 4th in world, Mexico, Water & Waste, news.” 7 May 2012.

¹⁴ Three of those were pulp and paper companies in India that sourced wood from smallholder forest farms with an average 5 ha plantation area.

¹⁵ The partnership approach is not unique to the forest sector. Fostering partnerships to address global challenges and share knowledge is the cornerstone of the Bank’s strategic vision. The Bank is involved in nearly 120 Global or Regional Partnership Programs (GRPPs) in diverse areas, with total spending about \$7 billion annually (IEG 2011). Listed in Bibliography?

¹⁶ G.J. Nabuurs, O. Masera, K. Andrasko, P. Benitez-Ponce, R. Boer, M. Dutschke, E. Elsiddig, J. Ford-Robertson, P. Frumhoff, T. Karjalainen, O. Krankina, W.A. Kurz, M. Matsumoto, W. Oyhantcabal, N.H. Ravindranath, M.J. Sanz Sanchez, X. Zhang, 2007: Forestry. In *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

¹⁷ See for example, A. Baccini, S. J. Goetz, W. S. Walker, N. T. Laporte, M. Sun, D. Sulla-Menashe, J. Hackler, P. S. A. Beck, R. Dubayah, M. A. Friedl, S. Samanta & R. A. Houghton. Estimated Carbon Dioxide Emissions from Tropical Deforestation Improved by Carbon-Density Maps. In *Nature Climate Change* 2, 182–185 (2012), and N. L. Harris, S. Brown, S. C. Hagen, S. S. Saatchi, S. Petrova, W. Salas, M. C. Hansen, P. V. Potapov, A. Lotsch. Baseline

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¹⁸ The # symbol is commonly referred as a hashtag on Twitter and is used to mark keywords or topics in a Tweet.