

Forest Financing in Latin America:

The Role of the Inter-American Development Bank

Markku Simula
Jyrki Salmi
Esa Puustajärvi

Inter-American Development Bank

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E-mail: mariak@iadb.org
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Foreword

The study is related to several strategies developed by the Inter-American Development Bank (IDB), including those on rural poverty reduction, rural finance, agriculture, water resources, coastal resources and energy. The study benefited from the analyses carried out for these strategies, but it clearly concentrates on the Bank's actions in forestry and the forest industry. It deals with private sector investments as well as public goods present in the forests of the region.

The IDB has carried out three related studies on forestry and biodiversity. The first one deals with the policies that may change the trend toward converting forests to other uses in Latin America and the Caribbean. The study results were presented in a book published in English and Spanish (*Forest Resource Policy*, K. Keipi (ed.), IDB 1999). The second project produced a report on biodiversity, which was also published in English and Spanish (*Financing Biodiversity Conservation*, Bayon et al., IDB 2000). The third (forthcoming) study analyzes forestry and forest-based industries (forest clusters) as vehicles of development in Argentina, Brazil, Chile, Colombia and Mexico. Other related Bank papers include a study of urban forestry in Latin America and the Caribbean (*Good Practices for Urban Greening*, Sorensen, et al., IDB 1997).

The IDB has sponsored a number of additional studies on various instruments of environmental and natural resources financing that are related to the forestry sector. They include the use of environmental funds in Latin America, continuing analysis of the Bank's possible role in the application of financial instruments related to the Framework Convention on Climate Change (FCCC) and the use of forests as carbon sinks.

The overall objective of this study is to present recommendations for the IDB's forest-related lending and support to institutional and policy development in borrowing member countries. The recommendations in this paper may be used for future forestry considerations for rural development and natural resource management programs.

Walter Arensberg
Chief
Environment Division

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Executive Summary

Financing Sustainable Forestry

There is *lack of clarity* among decisionmakers in Latin America and the Caribbean (LAC) on what forest development and conservation mean and how they should be financed. The current debate on whether sustainable management of natural forests can compete in profitability with unsustainable practices and other land use options is likely to continue. The working hypothesis of this study is that forest development can be a feasible financial proposition for investors both in natural forest management and plantation forestry. There are two key issues. The first is how financing can help forest owners and managers shift from unsustainable to sustainable practices, although the former tend to be more profitable in the short run. The second is how to make the environmental services and values of forests, which are currently considered externalities, to pay for ensuring their future maintenance.

A whole range of *financing instruments* has become available for forest investments. They include various economic instruments (taxes, royalties, environmental/forestry fees) and public sector mechanisms (sector and project loans and grants, credit lines, subsidies, debt-related instruments, forest and environmental funds, targeted grants). Such market development instruments as forestry-based carbon offsets and water resource charges hold even more promise to raise the necessary financing for investments in sustainable forest management. Private capital mobilization through venture investment is another under-tapped opportunity.

In order to make these instruments work to their full potential, the public sector has to provide the ground rules and targeted support. Many of the new instruments will involve *public-private partnerships* in various forms. Also, various individual instruments tend to deal with forest-based benefits separately from each other, which is impractical for forest owners and managers trying to optimize their operations in specific local condi-

tions. Therefore, there will be a need to *package* these benefits in order to convert various opportunities into financial flows and revenues.

The overall *financing potential* of forestry in Latin America and the Caribbean is conservatively estimated at US\$6.8 billion¹ per year over the next 10-year period. More than two thirds (72 percent) would go to industrial plantations, while the balance would go to natural forest management in production and protected areas. The estimate does not, however, cover all the investment requirements of environmental and social forestry. If the Clean Development Mechanism (CDM) of the Kyoto Protocol becomes applicable to forest-based carbon sequestration, it would significantly add to the above estimate.

The existing *financial flows* to forestry in Latin America and the Caribbean are poorly known. The multilateral public sector commitments amount to \$2.7 billion (about \$0.8 billion per year), supplemented by a large number of smaller projects financed by bilateral and other sources. Foreign direct investment was estimated at \$500 million in 1998 but no information on portfolio investment is available. About 50 cross-border and international investments in forest plantations and industrial processing were identified in the region. Their importance is expected to increase along with the overall globalization of the industry.

The Role of the IDB

The IDB's involvement in forestry is well established. Its 1991 forest policy allows the Bank to fund a wide range of forestry activities. However, in the 1990s there has been a major shift from production-oriented projects to environmental and social forestry. At the same time, many necessary elements to contain the problem of deforestation and achieve sustainable forestry in the region have

¹ Unless otherwise noted, all currency figures are in U.S. dollars.

not been addressed. The Bank's annual *financing level* in the forestry sector has dropped in the 1990s, from \$100 million to between \$20 and \$40 million toward the end of the decade. This level is inadequate to address the problems that the sector faces and to tap the investment opportunities offered by sustainable forest management.

The Bank's current *production forestry* instruments are well targeted to complement capital market financing, the main source of financing for private investment. Direct support for pilot and pioneer projects can play a particularly important strategic role. Certification of forest management, for example, is a promising sustainability tool that contributes to internalizing social and environmental costs. The Bank should support forest certification efforts in the region.

Social forestry loan projects could target activities such as agroforestry and farm forestry, non-timber forest products and various community-based forest services in order to help generate rural income and create new jobs.

Traditional loan projects in watershed management, establishment and maintenance of networks of protected forest areas, urban forestry and environmental conservation will remain relevant *environmental forestry* tools. Institutional strengthening and policy development will also be needed to build up the capacity of member countries to design and implement new and innovative schemes for the *commercialization of environmental services* from forests.

Measures to *promote the demand for financing sustainable forest management* will be required to increase the Bank's role in the forestry sector. The main bottleneck is the lack of awareness and understanding of the opportunities offered by forests among decisionmakers in the ministries of finance, national planning agencies, and national

financial institutions. Forestry is a particularly difficult sector for international development financing institutions because investments are sometimes not perceived as profitable and accountable undertakings, forest lands are subject to complicating stakeholder interests, and the size of investment projects is typically fairly small. Nevertheless, close analysis of success stories indicates that sustainable forest management can be profitable. This can be achieved by following the actions proposed below.

- (i) Create adequate awareness among macro-level decisionmakers of the forestry sector's potential contribution to sustainable development in Latin America and the Caribbean.
- (ii) Use national forest programs as entry points to Bank financing within an appropriate institutional framework.
- (iii) Continue to include forest components in the loan programs for other sectors (rural development, infrastructure and energy investments, tourism, urban development).
- (iv) Analyze the implications of international forest policy processes in meeting the needs for assistance of Bank members.
- (v) Pioneer and promote the use of new financing instruments for sustainable forestry.
- (vi) Facilitate and support private sector investment in forest management. This will also create internal pressures for policy reforms and institutional strengthening in member countries.
- (vii) Strengthen existing strategic alliances and develop new ones at national and international levels within the region.

Financing Sustainable Forestry

Why Are Forests Important?

Latin American and Caribbean forests cover 936 million hectares, representing more than a third of the total land use. Conversion to other land uses and overexploitation in accessible areas now threatens the region's forest areas. FAO (1999) estimates that the current rate of deforestation in the region is 5.8 million hectares per year, or more than a third of the global change (Annex 1). Most of this deforestation is the result of converting natural forests with a variety of productive and environmental functions into marginal agriculture land with little or no economic or environmental value.

The value of forests is paradoxically often recognized only after they have been lost. They are essential in maintaining life-supporting systems by protecting soil and water, housing the bulk of the Earth's biodiversity, and contributing to climatic conditions. The impact of forest loss is felt far beyond the forested areas through siltation of rivers and waterways, sedimentation of dams, reduced water supply to agriculture and urban communities, increased land erosion and climate change.

Latin American and Caribbean forests house about 85,000 plant species or some 31 percent of the world total. In South America, about 20 percent of forest habitats have already been lost, while the loss has been even greater elsewhere. Most protected areas in the region are located in natural forests covering 230 million ha but inadequately managed (Keipi 1999a).

Despite the undisputed benefits derived from the region's forests, the sector's characteristics make investment financing more complex than in most other sectors. According to Moura et al. (1999), forests have long gestation periods (from 6 to more than 100 years), which is a source of risk for forest management. Moreover, benefits are not necessarily reaped by the owner of the resource, but may be passed on to the next generations. For-

ests are also characterized by the uneven distribution of benefits and costs over time. Initial investment outlays can be large and annual management costs relatively small; yet, while most of the revenue occurs at the end of the rotation period (typical in afforestation and reforestation activities). Non-market benefits or public goods are important in this sector (particularly through environmental services provided by natural forests), and investors have been unable to capitalize on these benefits.² The poor definition of rights as well as conflicts in the use of forest products and services may also make investment a complicated and risky exercise (e.g. Kaimowitz et al. 1999).

These characteristics make forestry different from other land uses, particularly agriculture, where similar problems of long-term financing are not encountered. In particular, the link between investor and beneficiary is direct in agriculture and non-market benefits play no role or only a limited one. However, there are also important similarities such as maintenance of landscape values.

Concept and Profitability of Sustainable Forest Management

Forest management is a multipurpose activity, aimed at producing a desired set of forest products and services that respond to market demand. Goal setting is a political process where stakeholder priorities are balanced with each other. The concept of sustainable forest management has been introduced to guide management practices to ensure that the economic, ecological and social values of forests are maintained. The International Tropical Timber Organization (ITTO), which has 10 members in the Latin America and the Caribbean region, has defined SFM as follows (ITTO 1999):

² Some investors may capture environmental services, e.g. through carbon trades.

Sustainable forest management is the process of managing forests to achieve one or more clearly specified objectives with regard to the production of a continuous flow of desired forest products and services without undue reduction of its inherent values and future productivity and without undue undesirable effects on the physical and social environment

It is important to note that the definition of sustainable forest management *depends on current societal values, which are defined through the political process*. As these values change over time, what is meant by sustainable forest management in operational terms also changes. However, the main economic principle of sustainability remain; namely, that the costs and benefits of forestry activities should be equivalent over the long term. This means that sustainable forest management must be profitable if it is to be undertaken on a long-term basis.

There is little comprehensive information on the profitability of sustainable forest management in Latin America. Most recent studies have focused on the issue of sustainable timber management *vis-à-vis* conventional logging in natural forests. Pearce et al. (1999) has compiled a useful summary of these studies which leads to the following main conclusions:

- (i) Conventional logging in natural forests can be highly profitable, but wide variation in local conditions means that this is not always the case.
- (ii) Conventional logging tends to be financially much more attractive for private investors than sustainable timber management by a factor of 1.5 to 4.
- (iii) Returns to conventional logging are high in the short term but tend to disappear, while sustainable timber management provides lower initial returns, but they are sustained or may increase over time.

Plantation forests cover about one percent of the total forest area in the region.³ They have been mainly established with fast-growing exotic species (*Eucalyptus*, *Pinus*) and more recently with native species. Plantations are mostly for industrial uses and they are economically viable but their initiation has in many cases required extensive public sector subsidy programs. Justification for such support has derived from important benefits to local communities and improved environmental conditions (Keipi 1999a).

The concept of sustainability broadens the scope of forest management beyond timber, encompassing the social and environmental benefits of forests. As long as forest owners and managers do not capture these benefits, they fall outside the scope of the economic analysis. However, these benefits may bridge the gap between unsustainable and sustainable forest practices and, as soon as they can be realized, investors will switch to sustainable forestry.

Currently, deforestation and unsustainable forest practices appear more profitable in the short term because they emit “wrong” signals (i.e. negative externalities are not incorporated into prices) from the market. This needs to be rectified by reducing the opportunity costs of forest management in order to make unsustainable forestry less attractive and by countering extra-sectoral policy constraints. This is not an easy endeavor because investments in sustainable forestry are different from those in most other sectors given their significant externalities and long time horizons (PROFOR 1999).

Benefits from carbon sequestration, biodiversity and water supply are examples of services which occur at global, regional, national and local levels and which have the potential to be internalized through market or other mechanisms. Such payments can be arranged administratively (GEF, pollution abatement subsidies) or through the market. Environmental externalities may be taken as a valid justification for long- or medium-term subsidies, provided that their efficiency and distributional impacts are desirable or acceptable.

³ Regional estimates of the area of plantation forests vary from 8 million to 11.1 million ha (Keipi 1999a).

Experience suggests that market measures require adequate policy guidelines and regulatory measures. Incentives are generally more cost-effective than regulation but they need to be supported by an adequate level of regulation (Richards 1999; PROFOR 1999). The relevant incentives have to be applied not just within the forest sector, but also in any other sectors that have spillover effects on forests (Pearce et al. 1999).

The Roles of the Public and Private Sectors in Financing Forest Projects

Public and private financing have distinct but complementary roles in the forest sector. The purpose of public sector financing is to achieve public goals, whereas private capital generates wealth and creates markets (and is placed at risk). Public funding will increasingly be targeted at leveraging private investment. These distinct roles, however, become less clear-cut as they are extended to take advantage of the new opportunities offered by the “commoditization” of the environmental services of forests, the application of market-based instruments and the effect of other incentives on sustainability.

The change in roles is coupled with the change in flows. While private financial flows to the region’s forestry sector have been increasing (Gentry 1998; Joshi 1998, cf. also section 3.2), the public sources have been losing their relative importance. This emphasizes the need for leveraging private investment through public funding.

Another switch in the role of the public sector is to move away from direct involvement in management and production toward addressing institutional constraints by creating enabling environment for private investment (World Bank 2001). Financing for sustainable forestry will have to come mainly from private sources. In the past, private actors have paid little attention to environmental and social issues. However, awareness of the environmental risks caused by unsustainable operations is changing the attitudes of foreign and institutional investors. Ethically oriented investors also emphasize sustainability and equity as selection criteria for their portfolio. These trends are opening new potential sources of financing for

sustainable forestry management, provided that such investments can also be economically viable.

The problem to be overcome is often the up-front costs of infrastructure, research and information, and human resources development that the private sector cannot be assumed to bear. In addition, high apparent risks involved in the transition from unsustainable to sustainable forestry, coupled with the lack of understanding of forestry investments, also act as barriers to private investment in sustainable forest management. Private-public sector partnerships are essential in solving these issues. To make such partnerships work in practice, there needs to be an alignment of interests for sustainable forest management. While the public sector should ensure that private capital is used in a socially and environmentally responsible manner, the private sector needs to influence the government so that the enabling conditions for sustainable forestry are established, including up-front investments and risk mitigation. Partnership modalities need to be tailored to local situations. This is a rapidly evolving field in Latin America (see next Chapter).

For the purposes of the IDB, forestry projects could be divided into three main categories according to their *primary objectives* (while recognizing that multiple outputs are almost always targeted):

- (i) *Production/commercial forestry projects* in natural forest management and plantations are implemented for profit by the private sector. Outputs are usually timber and non-timber forest products but can also include services such as ecotourism. Despite the profit seeking motivation of investments, strict adherence to environmental precautions should be required and due consideration should be given to the protection of indigenous peoples’ rights and other social issues.
- (ii) *Socially targeted projects* may contribute significantly to alleviating poverty and improving social equity through the generation of income and employment. Forestry activities are typically integrated into farm production systems (agroforestry and silvopastoral systems). These projects can be targeted

at entire communities (and their organizations) or individual farmers, and they can also address the cultural and spiritual values of forests. The term “social” is used here in a broad sense including all types of forest activities with social goals.⁴

- (iii) *Environmental forestry projects* are aimed at providing public goods through the environmental services of forests. These include such activities as watershed protection, biodiversity conservation, and carbon sequestration. The resulting benefits may be reaped at global, regional, national or local levels.

The incremental costs of productive forestry, which are necessary to meet the environmental and social requirements of sustainable forest management, are a key barrier during the transition from unsustainable to sustainable practices. Concessionary public financing could exercise substantial leverage to remove these barriers. It could finance enabling activities such as forest invento-

ries, the preparation of management plans, training, and research and the introduction of improved technologies such as reduced impact logging. In addition, concessionary funding could play a role in ensuring the market and non market-based valuation of the full range of forest goods and services (Moura et al. 1999).

International Agreements Related to Forests

The objectives of several *regional* cooperation mechanisms are relevant to the promotion of sustainable forest management (SFM). For example, they provide useful frameworks for developing appropriate mechanisms for financing of sustainable forestry. The most far-reaching instrument is the Central American Forestry Convention, which successfully mobilizes subregional and national action for the promotion of SFM (see Box 1).

The countries of the Amazon Cooperation Treaty agreed in 1995 on a proposal that set criteria and indicators for sustainability of Amazonian forests.

Box 1. Central American Forest Convention

Several important political and legal instruments have been established in Central America to promote environmental conservation and sustainable development. One of them is the Regional Convention for the Management and Conservation of Natural Forest Ecosystems and the Development of Forest Plantations (1993), also known as the Central American Forest Convention (CAFC). Its main objectives are to (i) promote national and regional mechanisms to prevent changes in land use in areas under forest cover with forestry potential, (ii) rehabilitate deforested areas, (iii) reorient settlement policies on forest lands, (iv) create disincentives for actions which lead to forest destruction, and (v) promote a process of land use planning with sustainable options.

The Convention not only deals with forest loss, but goes further by enabling a regional policy that creates new land tenure and use options in areas earmarked for forestry and protection. The aim is to shift from a predominantly agrarian focus to conservation and the sustainable use of forests. CACF also contributes to the objectives of broader poverty alleviation strategies.

The Central American Council on Forests (CCAB) was created to implement the Convention. Close links have been built in for coordination with the regional instruments and activities related to biodiversity, environment and sustainable development. A regional strategy to mitigate the impact of forest fires and create a regional market for carbon sequestration certificates is being developed.

So far, implementation of the Convention has been satisfactory, although not perfect. A major achievement is that the implementation process involving fundamental changes in land-based development strategies has started and will continue. New challenges include the incorporation of environmental and sustainable use issues in the regional commercial agenda, among others. As a whole, the experience gained has been positive.

Source: Aguilar & Gonzalez 1999

⁴ Social forestry is often used in a narrow sense to refer only to community forestry.

The Tarapoto Protocol attempts to promote the sustainable development of Amazonian forests? to make use of their environmental, economic, cultural and social potential, while recognizing the national sovereignty of the member states. The criteria were established at three levels: local forest management unit, national, and global. The proposal includes provisions for broad participation and consultation, especially at the local level. It forms a useful subregional instrument for harmonizing the normative framework in the forestry sector. Its effectiveness, however, will depend on its adoption and application in the member states (Simula, 1999).

There are a number of *international* instruments that regulate many of the functions of forests, but only a few have been designed for the purpose of promoting sustainable forest management. Many mechanisms focus on a particular aspect of forests, or their regulation has a direct or indirect effect on how forests are managed and utilized. Some of the main goals of some of these agreements are, for example, environmental conservation, sustainable development, trade regulation and economic integration. Only two instruments, the UNCED Forest Principles of 1992 and the 1999 Proposals for Action of the Intergovernmental Panel of Forests (IPF, which is the predecessor to the United Nations Forum of Forests UNFF), take a comprehensive view covering all types of forests and various elements of sustainable forest management as a holistic concept. Unfortunately, both are nonbinding.

Of the existing multilateral environmental agreements (MEAs), the one with the broadest scope from the forestry point of view is the Convention on Biological Diversity (CBD). Its objectives are essential for the forestry sector: (i) conservation of biodiversity is a precondition for sustainable forest management, (ii) sustainable use of the biological diversity of forests is an element of SFM, and (iii) promotion of the fair and equitable use of the benefits derived from the use of genetic resources would directly benefit resource owners. The United Nations Framework Convention on Climate Change (FCCC) is perhaps the most

promising new financial mechanisms for the conservation and protection of natural forests and the establishment of forest plantations in Latin America. Argentina, Belize, Costa Rica, Ecuador, Guatemala, Honduras, Panama, Paraguay, Mexico and Bolivia have entered into joint implementation (JI) projects even though it is still in its pilot phase.

The mechanisms envisioned in the Kyoto Protocol, however, not yet operational and many issues need to be resolved. Nevertheless, the Central American nations, with CCAD leadership and FAO support, are preparing for the future use of these mechanisms through by developing a Central American Forestry Strategy for Mitigating Climate Change. One of the objectives of this project is to identify the regional and national potential for the implementation of projects of to mitigate the impact of climate change (Blas Zapata 1999).

The Convention to Combat Desertification (CCD) takes a holistic, locally driven approach in which the sustainable management of forests and other natural resources is an integral part of measures to combat desertification. The impacts of the Convention cannot be assessed as yet because its financing mechanism has only recently become operational. Leveraging other sources of financing is one of the key elements of the CCD strategy, which opens the door to cooperation possibilities with the IDB.

The International Tropical Timber Agreement (ITTA) is a commodity agreement to facilitate the trade in tropical timber and ensure exports from sustainable sources. ITTA seeks to balance environmental and economic interests, a characteristic that makes it different from other commodity agreements. A large number of reforestation, forest management, forest industries and economic and market information projects have been financed in Latin American member countries. This is currently one of the most tangible benefits to forest managers from the Agreement.

Financing Instruments for Sustainable Forestry

Taxonomy of Instruments

During the last few years, the IDB has carried out several studies on the assessment and development of new financing instruments for environmental investments. This section looks into such instruments from the viewpoint of their applicability for financing forestry and discusses how they could be made more effective.

Several classifications have been proposed for financing instruments applicable to the forestry sector and conservation projects (e.g., Bayon et al. 2000, Best & Jenkins 1999, Moura et al. 1999, Panayatou 1994a, Pearce et al. 1997), but it ap-

pears difficult to suggest an all-embracing taxonomy for sustainable forestry financing instruments. However, for the purposes of this analysis, instruments have been divided into five groups: (i) credit lines and project financing, (ii) environmental and forestry funds, (iii) market development instruments, (iv) private capital market instruments, and (v) grants provided by or through philanthropies and NGOs (Table 1).

The issue of direct financial *subsidies* used in government supported programs and through environmental and forestry funds in Latin America, has been particularly controversial (Vaughan 1995). The current view suggests that such incen-

Table 1. Examples of Financing Sources and Instruments for Private Forest Management Investments

Instrument	Production Forestry	Social Forestry	Environmental Forestry
Credit Lines and Project Financing			
? bank credit lines (including SME and micro-credits)	X	X	
? targeted grants	X	X	X
? project loans grants from international agencies	X	X	X
? debt-related instruments (debt-for-nature swaps)			X
Environmental and Forestry Funds			
? national forestry funds	X	X	X
? environmental funds		X	X
? conservation trust funds			X
Market Development Instruments			
? forestry-based carbon offset payments			X
? water resource use charges		X	X
? tradable development rights/extraction quotas	X	X	X
? tradable protection right paymentst			X
? bioprospecting fees		X	X
Private Capital Instruments			
? venture capital funds	X		X
? securitization	X	(X)	X
? guarantees (policy guarantees, forest business guarantees)	X		(X)
Grants by Philanthropies, NGOs			
? conservation grants			X
? research and development grants	(X)	X	X
? nonreimbursable social development financing		X	
? sustainable forest business development grants	X	(X)	

Key: X applicable, (X) applicable but with limitations

tives may be used if justified as compensation for positive externalities of forest investments that cannot be reaped by landowners. For example, payment for environmental services that can be identified and, if possible, quantified would qualify. Haltia and Keipi (1999), who provide a comprehensive review of the subject, suggested that if direct financial incentives are used, they should be cost-effective and targeted (only the marginal cost of adoption that compensates for the opportunity cost).

The following discussion focuses on examples of market development instruments and the mobilization of private capital and philanthropies for financing sustainable forest management and conservation in Latin America and the Caribbean. The specific issues related to public-private sector partnerships and packaging, which are involved in many of the individual instruments identified, are reviewed at the end of this section.

Market Development Instruments

Carbon Sequestration

During the last ten years, forestry-based carbon offsets have evolved from a theoretical idea into market-based instrument for accomplishing the global environmental objectives of the Framework Convention on Climate Change. The most important aspect of the subsequent Kyoto Protocol is the adoption of legally binding commitments by 37 developed countries and economies in transition (collectively called the “Annex 1 countries”) to reduce their greenhouse gas (GHG) emissions by an average of 5.2 percent below 1990 levels (the “baseline”) by the years 2008-2012. Forestry and land-use change activities were included among the recognized strategies that countries could use in meeting these GHG reduction commitments.

The Latin America and the Caribbean region has spearheaded joint implementation of carbon sequestration projects. By 1998, there already were 27 projects in various phases of implementation, in spite of the fact that formal agreements on how such projects could qualify for meeting the emission reduction targets had not yet been reached. Costa Rica has the most extensive and sophisticated program in this field (including other envi-

ronmental benefits of forests) while Argentina, Belize, Bolivia, Colombia, Ecuador, Guatemala, Honduras, Mexico, Panama and Paraguay are implementing individual projects in order to gain experience (Roveda 1999). In relation to forestry (including renewable energy projects), two of the financing mechanisms provided by the Kyoto Protocol (the Joint Implementation and the Clean Development Mechanism) are potentially important to the mobilization of resources for SFM activities (Moura et al. 1999). Additional financing for carbon sequestration could make many marginal reforestation projects profitable.

Water Resource Use Charges

The value of forests in watershed management has been widely recognized. A large number of projects have been financed for this purpose, including by the IDB. However, only recently has attention been given to the wider use of water charges paid by the hydro energy sector or water consumers (including urban communities, industry and irrigation farmers) to pay for the services that forest management can ensure. It is also recognized that upstream management is often more cost-efficient than heavy investment in infrastructure or the maintenance of downstream water canals and reservoirs.

Resource use charges for water are designed to correct market failures in order to make upstream farmers choose environmentally desirable investments that protect the water supply to downstream populations. Compensation is provided to induce environmentally benign practices. Water fees and tariffs are adjusted to pay for such measures.

In Colombia, a law requires the hydroelectric power companies to transfer 3 percent of their gross sales to regional autonomous corporations, and another 3 percent to the municipalities where watersheds and reservoirs are located. The former are used for protecting the watersheds, while the latter go for environmental improvement (Rodriguez and Ponce 1999). In Costa Rica, the water and power companies are charged annual fees of \$6 million and \$3 million respectively. The fees are used to finance the conservation of some 1.3 million ha of forest in the watersheds supplying water to the city of San Jose (Heindrichs 1997).

Another recent example is the Watershed Conservation Fund (FONAG) established in Quito, Ecuador by the municipal government and the private sector, with the assistance of The Nature Conservancy (TNC). Funding is raised from water charges paid by electricity companies and private water users as well as the public water authority. Grants and loans are then provided to upstream individuals and communities to help them conserve the watershed through tree planting, protection, erosion control, and development of alternative livelihoods. The concept brings new elements to financing conservation by means of water charges by relying on a participatory approach and entrusting implementation to NGOs.

Further conceptual development could be done in commoditizing watershed conservation services through landowner certification, as already practiced in Costa Rica. This kind of approach is likely to work best in clearly defined watershed areas that protect the supply of fresh water to urban centers. A large number of such cases could be identified in the countries of the region.

Mobilization of Private Capital and Philanthropies

The private capital markets could play a much more significant role than at present in financing SFM-based activities if the institutional and operational barriers to such investments were reduced. Several instruments in commercial private sector financing that could be applied to forestry are detailed below.

- (i) *Debt financing* through banking system can be used both for forestry or the forest industry. Targeted credit for forestry has been rare in Latin America and the Caribbean.
- (ii) *Venture capital funds* are expected to fill a much-needed void in the provision of risk capital to emerging biodiversity-based business, including forestry as one of the priority sectors (Moura et al. 1999) (Box 2).
- (iii) *Securitization* (the process of turning an asset, debt, obligation or aggregation of these into marketable security such as stocks or bonds) is an example of conventional fi-

ancing instruments that could be used in an innovative way in forestry.

- (iv) The first forestry sector-specific policy *guarantee* has been planned for the Russian Federation (World Bank 1998b).

Best and Jenkins (1999) have identified grant funding from philanthropies and NGOs as one of the key sources for strategic investment in forest conservation. In general, their goal is to expand the preservation of forest ecosystems. In addition to public conservation projects, philanthropies have started to seek to leverage the early stage development of forest land acquisitions that can accomplish public goals by the commercial private sector. Such investments can also take the form of conservation easements or the establishment of forest conservation funds.

The scope of NGO-financed activities is also in the process of change. The notion is to increase effectiveness by joining forces with other sources of financing and governments. This represents a gradual shift from traditional grant-funded local social or environmental projects toward more effective interventions in the development of policies and financing mechanisms by the NGOs. TNC's work on water resource charges, IUCN's involvement in the development of national environmental funds, and WWF's support to the development of certification under the Forest Stewardship Council are examples of such new approaches. This makes them potential partners for the IDB and other sources of international financing in Latin America and the Caribbean.

Public-Private Partnerships

Public-private partnerships (PPPs) have become a common mechanism in financing (mainly) infrastructure investment all over the world. They refer to "a form of collaboration or joint endeavor between the public and private sector for the purposes of implementing a major project, whereby the resources, strengths and capabilities of each are brought together" (United Nations 1998). Often, partnership brings the private sector capital and business management capabilities together with the public sector's potentially stronger risk

Box 2. Venture Capital Funds for Sustainable Forest Management

Private sector forestry investment funds function like other sectoral investment funds, matching forestry's characteristic investment profile to the needs of potential investors. The attractiveness of forestry as opposed to other sectoral investments includes protection against inflation, possible tax advantages and the insulation of stock growth from market fluctuations.

Private sector forestry investment funds are relatively common in the developed world, particularly in the United States, Australia, and New Zealand. Increasingly, opportunities are also being realized in the plantation estates of the developing world (e.g., Chile and Argentina). One specific example is Xylem Investments Inc., an international timber investment management firm, which makes private equity investments in international publicly traded plantation-based forestry companies based on expectations of a significant appreciation of forest assets (generally). Nominal rates of return are 15 percent.

Forestry investment funds are likely to focus on the establishment and management of plantations and the downstream wood products industries. In this regard, the short rotations with associated cash flows attainable in the tropics make such funds potentially highly replicable. However, this assumes that necessary preconditions are in place, such as efficient capital markets, available information, political and macroeconomic stability, etc.

Biodiversity venture capital funds are another example of equity or quasi-equity instruments. Their investments are generally considered to be inherently high risk. Reduction of the risk barrier is their main justification. Therefore, sector investment programs or funds have been designed to address the special need of biodiversity-based businesses. A recent example is the *Terra Capital Fund*, supported by the MIF, which has been set up to bring together investment management expertise (Banco Axial, Environmental Enterprises Assistance Fund, Sustainable Development Inc. and IFC), advanced sector know-how, and local and foreign capital. Another example of relevance is the *MIF/TNC Environmental Enterprise Fund* known as EcoEnterprises Fund (Fondo EcoEmpresas) which will have \$10 million available for venture capital and technical support to environmentally responsible business projects (Bayon et al. 2000).

Priority given to forestry will be highly dependent on the expected return of projects. The funds are likely to finance natural forest management and utilization, emphasizing non-timber forest products. If they do not become significantly involved in timber harvesting operations based on SFM, for which there is a large potential in several Latin America and Caribbean countries, their role is likely to remain limited to biodiversity-specific activities. The slow start of Terra Capital indicates that the establishment of these ventures is a complex exercise.

bearing capacity for long-run investments with public benefits.

Typical public-private partnership contracts include:

- (i) *Contracting out or management contracts*, where the private sector provides a service or manages a project for an agreed period and fee without assuming the risk of financing or profitability (e.g., contractual harvesting in government-owned forests).
- (ii) *Joint ventures*, where the public and private sectors jointly finance own and operate a project (e.g., partial public ownership in forest industries).
- (iii) *Leasing*, where all or a substantial part of the risks associated with funding, developing, managing and operating a project are

transferred to the private sector, which pays a lease payment for the use of the facility provided by the project (e.g., management of ecotourism facilities).

- (iv) *Build Operate Transfer (BOT)* is the most common form of partnership. A project may be developed by the private sector, which takes the primary responsibility for funding, planning, building and operating the project for a sufficiently long period of time to service and repay the debt raised for this purpose and earn an adequate profit. Control of the project is then transferred to the public sector, which retains permanent ownership of the assets. There are many variations of BOT; forest concessions are a typical example.

- (v) *BOO (Build Own Operate)*, where neither control of the project nor ownership of its assets is transferred back to the government, but remains in private hands. Privatization of state-owned forest industries is an example of this type of contract.

The benefits that PPPs may offer participants can be grouped into five categories (United Nations 1998):

- (i) *Fiscal benefits* could be obtained as a result of easing budgetary constraints, optimal risk allocation by sharing, accurate costing, and obtaining private sector expertise and know-how at reasonable costs.
- (ii) *Economic benefits* may derive from speed of delivery, increased responsiveness to demand, reliability of services, efficiency in implementation, access to international funding and fostering of local capital markets.
- (iii) *Technological benefits* could include transfer of technology, training and access to innovation.
- (iv) *Social benefits* result from meeting people's needs, raising living standards, improving the environment, and balancing social and commercial priorities. The potential for allocating freed public resources to health, education and other essential areas could contribute an additional benefit.
- (v) *Political benefits* may arise from the redefinition of the government's role toward supervision and regulation and the attraction of private sector funding. These types of partnership may contribute significantly to stable investment climate.

PPPs are particularly suited for promoting the development of the forest sector in cases where the government is reluctant to give up its controlling power to private enterprises. Overall government control over the management and use of forest resources can be ensured through the negotiation of contracts. The negotiation may facilitate public sector understanding of key bottlenecks created by

current policies and regulations and encourage it to take the necessary steps to eliminate them. Indeed, one of the key objectives of PPPs is to remove barriers to sustainable forestry ventures in a coordinated and cost efficient way to enable the private sector to bring capital and expertise to the implementation of investments.

Partnership concepts are present in many of the financial instruments described earlier. They are expected to become increasingly common in all efforts aimed at promoting sustainable forest management and conservation. The key requirement is the alignment of private and public interests in such ventures, which has been often overlooked by the parties involved. In the forestry sector, this tends to involve a lengthy process of consultation and negotiation where the role of "champions" on both sides is crucial.

Public-private partnerships have been essential in developing the concept of payment for environmental services in Costa Rica. This experience could be replicated in other countries. In doing so, however, it is important to bear in mind that conditions in Costa Rica were particularly advantageous for the success of this scheme (Moura et al. 1999). Costa Rican public opinion was widely concerned about the environment, and the country had a long tradition of democratic collective action entrepreneurship. In addition, the Costa Rican tourism sector depends on the value of the country's ecosystems. In turn, the country's economy is dependent on tourism as a source of foreign exchange. International organizations helped conceptualize development opportunities, and landowners and farmers were effectively organized. Finally, secure land tenure significantly reduced the risk of investments in forestry.

Packaging Forest-Based Investments

The instruments and mechanisms discussed earlier may be used to combine the benefits available from forests. This is necessary as forest owners and managers try to optimize their overall production function based on the various benefits obtainable from forest resources. In doing so, they will also have to project how the value of their forest property is likely to change in the future. The conventional production function that maxi-

mizes net revenue from timber is expanded by introducing other products and services, each having with its own price and cost. There are trade-offs between these outputs. The landowners attempt to choose an optimum combination in their specific situation.

Packaging of investments becomes a useful and practical way to convert opportunities into financial flows and revenues, which can be used to pay the cost of capital involved in the operations. The Costa Rican experience shows how water user fees and carbon sequestration benefits can be combined into a service package provided by forest owners. In this pioneering arrangement, funds are raised from beneficiaries of forest goods and services and channeled to public and private forest owners and managers. The system has raised a lot of interest at national and international levels, but a full assessment is not yet possible because it is not yet fully operational (see Box 3).

The FONAFIFO concept in its present form represents only a first approximation for packaging

environmental services to pay for them. This approach keeps sustainable forest management as the main goal, rather than focusing on an individual service (water, carbon, biodiversity, natural beauty, etc). A blunt approach by dividing the compensations to landowners into three categories is probably initially a pragmatic one, and it could later be adjusted by type of forest management activity and its capacity to produce various environmental benefits (Heindrichs 1997). The payments made to landowners must be based on services provided and should not be a transfer payment. This provides a strong motivational aspect for the scheme and is also financially attractive.

In the packaging approach the various benefits need to be weighted to provide a single “product” of intangible forest benefits. The various types of project interventions provide different outputs. These are naturally site specific.

Box 3. Financing through Costa Rica’s National Forest Fund

The Costa Rican government established a National Forest Fund (Fondo Nacional de Financiamiento Forestal, known as FONAFIFO) to compensate forest owners and managers for reforestation and conservation activities in natural forests. According to the law, the Fund receives its resources from a gasoline tax, revenues from selling CO₂ certificates to international buyers (joint implementation), and the emission of forestry conservation certificates. There are also a host of other national and international sources of funds that could be made to pay for the environmental services provided by forests.

FONAFIFO can use its funds to pay private landowners for reforestation (currently \$492/ha), forest management (\$329), and forest protection (\$49). By the end of 1997, a total of \$14 million had been disbursed, creating 79,000 ha of protected forest areas, 10,000 ha of sustainably managed natural forests, and 6,500 ha of reforestation. The demand has exceeded the supply and there is reported to be a backlog of applications.

The new concept of payment for environmental services replaced the earlier approach that relied on issuing certificates that benefited applicants by granting them tax breaks. This approach put small forest owners at a disadvantage and the focus was given to forestation. The earlier system also lacked transparency and the main source of funds was the government, thus creating a drain on the budget. The new concept aims at shifting the financial burden from the state to the private sector and the beneficiaries of forest services.

The establishment of payment fees is based on three types of activities (reforestation, forest management and protection), which may be considered the first approximation at the initial stage. There is a possibility to develop a more differentiated classification of forest management types, and assigning for each type a rating of the various environmental services based on its “production potential.” The different environmental services could also be weighted in relation to each other to arrive at a total score for the valuation of environmental services in a specific forest area as a whole. The compensation to forest owners carrying out in different types of forest management activities could then be established based on the total score.

Sources: Heindrichs 1997, Bayon et al. 2000

Financing Potential and Funding Flows in Forestry

Financing Potential

The overall financing potential of the region's forest sector for the period 1998-2010 is estimated at \$88.2 billion or \$6.8 billion per year (Table 2, see also Box 4). About 72 percent of this total (\$63.7 billion) would be in the industrial forestry sector, including production facilities and additional industrial plantations for raw material procurement. The cost of the management of natural forests (including protected areas) accounts for 28 percent of total sectoral investments, amounting to \$24.6 billion in 1998-2010 or \$1.9 billion annually.

services provided by forests are not available to allow similar estimations.

The data presented in Table 2 must *not* be taken as an investment plan or project proposals. The purpose is to demonstrate the magnitude of investment opportunities in sustainable forestry. Individual projects are naturally to be designed separately and implemented by the private sector, public sector and international financing institutions. However, it is important to have an overall view of the sector's investment prospects to raise awareness among investors and decisionmakers of the potential offered by the forest sector.

Table 2. Financing Potential in Forestry and Forest Industries in Latin America and the Caribbean 1998-2010

Activity	Total period	Average annual
	(In billions of US dollars)	
Industry	62.3	4.8
Plantations	1.4	0.1
Subtotal	63.7	4.9
Natural forest management	16.3	1.3
Protected areas	8.3	0.6
Subtotal	24.6	1.9
Grand total	88.2	6.8

Table 2 focuses on wood-based forest products and protected area management. The estimates are based on projections of demand and supply of industrial forest products and net trade estimates. Industrial investment estimates were obtained separately for new capacity and reinvestment by applying unit investment coefficients and asset service life assumptions. The projected increase in wood is assumed to come entirely from plantations. Their investment needs are estimated based on unit investment coefficients. Indicative targets have been established for the areas of sustainably managed production in natural forests and protected areas to which the unit management cost coefficients are applied. Adequate data on non-timber forest products and the environmental

These estimates do not cover all the forestry activities. No comprehensive estimates are available of the investment requirements in the various fields of social and environmental forestry. The activities quantified in Table 2 would also contribute very significantly to social objectives, given that the goal of all forest investment should be sustainable forest management and conservation. In the same way, timber will be an output of many projects whose primary goal is social (e.g. agroforestry) or environmental (e.g., watershed management, carbon sequestration). That timber may partly be used for industrial purposes.

The estimated global volume of funds associated with the flexible mechanisms for meeting the

emission targets of the Kyoto Protocol is very large, reaching billions of U.S. dollars annually (Roveda 1999). This is expected to provide significant new funding for forest management activities for those Latin American nations that are well prepared when the protocol becomes operational.

Funding Flows to Forestry

The difficulties involved in obtaining reliable data on financial flows in the forestry sector are widely recognized (e.g., Joshi 1999). The present analysis draws on available data from a variety of sources that were complemented by a survey of donor agencies and multilateral financing institutions.

Multilateral Public Sector Financing

The total rough estimates of commitments on ongoing and planned projects financed by the IDB, the World Bank, and the GEF was \$2.7 billion for 1999. The World Bank is clearly the largest source of financing (72 percent), particularly because of its contribution to forest development in Brazil and the other large countries of the region. The IDB contribution reaches 20 percent. Brazil is the largest recipient of multilateral financial flows (43 percent), followed by Mexico (9 percent), Peru (6 percent) and Colombia (6 percent).

The IDB has the largest number of projects (60), compared to the World Bank's 50 projects. The GEF is reported to have 11 major projects related to forestry in the region. The average size of projects is largest in the case of the World Bank (about \$40 million). The comparable figure for the IDB is only \$11.5 million. The GEF average contribution to projects is even smaller (\$8.7 million).

The World Bank portfolio is heavily concentrated on Brazil (50 percent of the regional total) and the commitments in six other countries are in the range of \$100 million or more (Chile, Colombia, Haiti, Mexico, Peru and Uruguay). The largest IDB commitments are in El Salvador, Mexico, Venezuela and Brazil. The IDB portfolio also contains a large number of small projects, in the range of few million U.S. dollars. The main GEF contributions are allocated to Brazil, Argentina and Panama.

In addition to the multilateral development banks, several other international sources provide funding for forestry projects in the Latin America and the Caribbean region. The ITTO has provided financing for 35 projects in Latin America valued at \$25.7 million. The FAO is implementing 14 projects with a total cost of \$38.6 million financed by various donors (ITTO 1999, www.fao.org/Regional/LAmerica/proyecto). The ITTO and FAO are also implementing several pre-project activities and small technical cooperation projects.

Bilateral Public Sector Financing

Data on bilateral sources is limited to seven donor agencies (EU, CIDA, DFID (UK), DIDC (Finland), GTZ, NORAD and USAID).⁵ The European Commission is financing the largest number of projects (125), with a significant amount going to small projects with an average size of \$1.1 million. Great Britain (DFID) and Germany (GTZ) have the next largest project portfolios in Brazil (67 projects), Bolivia (24), Ecuador (22) and Peru (21). These four countries have been the most successful in attracting bilateral donor grants.

Private Sector Financing

Detailed comprehensive statistics on private sector forestry financing in the region are not available. However, there is an increasing amount of scattered information available from various sources. *Commercial private sector* flows, both foreign and domestic, are generally divided into direct and indirect investments. *Direct investments* are generally for capital goods (e.g., equipment, land, etc.) or services (e.g., training), while *indirect investments* take the form of either debt (e.g., commercial bank loans) or equity (e.g., common and preferential stock, portfolio investment, venture capital).

Domestic *non-commercial private sector* flows tend to be implicit investments in the form of labor, equipment, technical knowledge or assistance. At the international level, financial re-

⁵ Several other donor agencies are supporting forestry in the region, but data could only be obtained for these seven.

sources are mobilized through grants or concessionary financing (e.g., environmental sinking trust funds) by the NGO community and philanthropies (Best and Jenkins 1999).

Foreign private capital flows into forest-based investments increased in the 1990s. There are three main channels for private capital flows: foreign direct investment, portfolio equity investment and commercial bank loans.

Foreign direct investment (FDI) is carried out by companies, often through joint ventures with local firms. Typically, FDI in forestry takes the form of investment by a multinational company in the shares of a local company. In the case of *portfolio equity investment*, individuals and institutional investors purchase publicly traded stocks and bonds on local capital markets. *Commercial bank loans* are the most traditional form of private capital flow. It takes a variety of forms, including loans from commercial banks to public and private investors, as well as revenues from the sales of publicly or privately issued bonds in the capital markets. Private debt covers a wide spectrum of investments, from those that resemble FDI, to those that are more akin to portfolio investments.

Foreign private capital, particularly FDI, is not only an important source of financing, but is also essential in acquiring technology, know-how, and management skill. FDI is less volatile than portfolio investment and it tends to have a long-term horizon with regards to returns. FDI is also attractive because it does not require fixed repayment and does not increase the nation's debt burden (Gentry 1998).

According to UNCTAD (1999), FDI flows to the wood and wood products sector in Latin America and the Caribbean were estimated at \$120 million in 1997 and \$242 million 1998, corresponding to 0.3 percent and 3.2 percent of total FDI during those two years. However, the data corresponds to investments from five OECD countries only and excludes some important investors in the sector

(the Nordic countries, Malaysia, New Zealand and the Republic of South Africa). In addition, intraregional FDI, which is significant in Latin America, is not included. Therefore, the actual level is likely to be much higher, probably closer to \$500 million. In view of the region's forest resource potential and economic growth prospects, FDI is likely to increase in the medium term.

Traditionally, international forestry investments were mainly related to logging concessions in natural forests. Table 3 provides information on some transnational logging companies with major concessions in Latin America. The role of Malaysian companies is striking among the firms.

The available information on *international and cross-border investments* in forest plantations and forest industries in Latin America shows a heavy concentration in Brazil, Argentina, Mexico and Chile. The largest group is foreign investors, mainly multinational companies in the pulp, paper and timber business, that invest in the region as part of their raw material or marketing strategies. Some new players have recently come into the picture. They include timberland investors who specialize in investments in forest plantation projects worldwide drawing their resources mainly from institutional investors; and environmental investors who seek projects in forest conservation and carbon sequestration, etc.

Less information is available on *foreign portfolio investment* in the Latin American forestry sector, but it has obviously increased its role in forestry and forest-based industries as in other sectors.

International capital markets have started to recognize the potential and characteristics of forestry investments (particularly fast-growing plantations). Well-informed investors rightly perceive many such investments as relatively low-risk long-term opportunities, with positive real rates of return that complement traditional portfolios (FORM 1999).

Table 3 Some Transnational Logging Companies with Concessions in Latin America 1999

Company	Country of Origin	Host Country	Holdings (hectares)
Berjaya Group	Malaysia	Suriname Guyana	300,000 760,000 ^a
Equatorial Resources	United States	Brazil	600,000
KTS Group	Malaysia	Brazil	415,400
Kwitaro	Malaysia	Guyana	760,000 ^b
Mafira Group	Malaysia	Guyana	760,000 ^c
Mitsubishi Group	Japan	Brazil	34,710
MUSA	Indonesia	Suriname	800,000
NV Tacoba	Malaysia	Suriname	150,000
Primegroup Holdings Ltd.	Malaysia	Guyana	800,000
Rimbunan Hijau Group	Malaysia	Brazil	53,997
Samling Corporation	Malaysia	Guyana Brazil	1,690,000 993,694 ^d
Solid Timber Sdn Bhd	Malaysia	Guyana	760,000
Tenaga Khemas Sdn Bhd	Malaysia	Guyana	793,354 ^e
WTK Group	Malaysia	Brazil	313,719
Total			9,984,874

Source: Sugal and Mittermeier 1999

Conclusions

Despite of the difficulties in obtaining reliable data of financial flows in the forestry sector, especially on the private sector financing, there are certain general conclusions that can be made on the basis of the literature (Gentry 1998, Best and Jenkins 1999):

There has been a rapid shift in financial flows to the region's forestry sector away from the public toward the private sector as part of the broader privatization processes in forest resource management and utilization. At least in the short run, "green" sources of financing in the private sector are likely to exceed the available supply of projects that meet the profitability and environmental criteria.

If the Kyoto Protocol becomes operational, unprecedented amounts of financial flows may become available for environmental forest management in Latin America and Caribbean. Philanthropic financing seldom appears in the readily

available financial flow statistics. From the country case studies prepared for this paper it is evident, however, that it has an important role both in social and environmental forestry, and often employs innovative instruments.

Overseas development assistance has been declining in recent years but it continues to have an important role in the forestry sector. Unfortunately these flows have been scattered among a large number of small projects. Large programs with a potential for addressing forestry problems on the required scale are few. There is significant potential for leveraging private sector investment both through international development assistance and public funding in the country level. Currently, this potential is not being fully utilized. Foreign direct investment and other commercial private flows (including intraregional investments) are increasing rapidly. There is a concern that these investments may lead to environmental degradation or adverse social impacts, but the industry is taking a series of actions to address these concerns.

The Role of the IDB

A Review of IDB Loan Financing in Forestry

Since its establishment in 1959, the Bank has financed a large number of forestry and related projects. In the beginning, they were mostly directed at industrialization, timber plantations and training. In the 1970s and early 1980s, the focus shifted to social and community forestry with strong social development objectives. Gradually, institutional strengthening and forestry as a component of rural and agricultural development projects gained more weight. In the late 1980s and the 1990s, soil and water protection as well as biodiversity conservation received increasing importance.

The IDB's financial commitments to forestry started to increase in the late 1980s, reaching a peak in 1992 when the level IDB investment amounted to \$130 million. Toward the end of the 1990s, commitments dropped to \$20 to \$40 million. These figures should be interpreted with some care because forestry sector activities are not easily identifiable in Bank statistics. Forestry activities are implemented under a number of different budget items within various types of projects and these items may or may not be classified under forestry heading.

A total of 27 forestry projects financed by the IDB or the Inter-American Investment Corporation (IIC) in 15 countries were analyzed for this study. All the projects were implemented in the 1990s. The total value of the projects was \$1 billion. The average project size was \$38 million and projects ranged from \$1 million to \$132 million. Local counterpart financing averaged 30 percent of project cost. Ten projects were co-financed by international partners indicating the sector's potential for leveraging overseas development assistance (ODA) funding from other sources.

In most of cases, forestry represented a component of larger programs carried out in the environmental, rural development or agricultural sector. Full-fledged forestry loan projects were fi-

nanced in Ecuador, Guatemala, Nicaragua, Uruguay and Venezuela. However, in the case of some watershed management projects, the overwhelming majority of investments were in forestry (e.g. the El Cajon project in Honduras). On the other hand, the Mexico City Ecological Conservation Program (\$200 million) was originally conceived as an urban forestry project, but in the final design, direct forest investments amounted to only \$85 million. During the 1990s, more than one forest project was financed in Brazil, Colombia, the Dominican Republic, Ecuador, Guatemala, Honduras, Mexico, Nicaragua and Panama.

Financing for these projects was justified based on environmental (44 percent), economic (33 percent) and/or social criteria (23 percent). In most projects the target group was the rural population/farmers. However, the needs of city dwellers were also been addressed in watershed management and urban forestry projects. More than half of the projects clearly also benefited public sector organizations, whereas slightly fewer supported the strengthening of private sector entities.

The Multilateral Investment Fund (MIF) window offers significant potential for financing relatively small-scale private forestry projects. It has financed two forestry and biodiversity projects in the past and provided equity capital to four environmental enterprise funds, which invest in profitable small- and medium-scale enterprises.

The potential for IIC financing of private investment in forestry is significant, particularly in plantations and forest industries. However, there is very limited awareness among potential beneficiaries in the sector about the availability of this window. As a result, the IIC funded only three forest operations in the 1990s.

Various incentives (typically subsidies for afforestation) have been the most common financing mechanism to reach farmers or other target beneficiaries. In some cases revolving funds and small-scale loans have been used as instruments to en-

sure the sustainability of financial flows and reach beneficiaries. Almost half of the projects have provided support to strengthen public sector institutions.

The IDB's Mandate and Comparative Advantages

The Eighth Replenishment of Resources (1994) gave the Bank a clear mandate to finance *sustainable management and the conservation of forests in the Latin America and the Caribbean region* (IDB 1994). The crosscutting nature of forestry, straddling economic, social and environmental objectives with linkages to many sectoral policies and strategies makes it easier to comply with the mandate.

The IDB has many comparative advantages in forest sector financing in Latin America and the Caribbean. The institution has a good image and high profile in its member countries, as well as a strong capacity to bring various stakeholder groups together to address difficult policy issues. Its many successful interventions have also given the Bank a good track record in the forestry sector. The Bank has been the largest single source of international public funding in forestry in a number of smaller countries in the region during several years in the 1990s. In addition, the institution has a good outreach capacity made possible by its extensive network of country offices, which allow frequent contacts with national partners.

As a result of its presence in the field, the Bank has acquired excellent regional and national knowledge, which facilitates informed decision-making. The Bank's role in policy development at the regional level contributes to coordinated approaches and makes it a natural partner in cross-border projects. Finally, the Bank's innovative environmental financing can be easily expanded to sustainable forest management projects in general. Access to GEF grant financing could be linked with IDB loans for biodiversity conservation projects with global benefits.

The Bank has a further advantage of possessing various types of financing mechanisms, each serving different types of financing needs applicable in forestry. In addition, the Bank has access to

grant resources from donor trust funds, which can be used for project preparation.

In spite of the Bank's good track record in support of forest financing as a component of larger programs, it has not been particularly successful in the amount of lending to forest projects in recent years, although this is true also for the World Bank (World Bank 2001). A key reason for the low lending level appears to be lack of clarity on what forestry projects can encompass and how they can be effective instruments to further the Bank's objectives of reducing poverty, and increasing social equity, competitiveness and environmental conservation. In addition, emphasis has recently been placed on environmental projects undermining the potential offered by industrial and social forestry projects.

The main issues in forestry financing have been the *perceived low rates of return and high risks*. Conventional lending does not fit well with these sectoral characteristics. However, limited forestry components have successfully strengthened various *environmental and rural development programs*. This is especially true for watershed management projects, which have been a key element in the Bank's environmental portfolio. But, at the same time, the perception of forestry has been reduced to a supplementary activity rather than an object of lending on its own right for developmental and social goals. Funding for biodiversity conservation suffers from the same problem of often being on the margin (Bayon et al. 2000). On the other hand, there is significant, unutilized revenue generating potential in sustainable forestry. This would make the sector easier to finance than pure environmental conservation activities such as biodiversity preservation.

Based on this background, it is proposed that the Bank adopt the following mission statement for financing sustainable forest management:

The Bank seeks to promote conservation and the sustainable management of forest resources in Latin America and the Caribbean through improvements of its existing instruments and adoption of new and innovative financial mechanisms, capitalizing on the economic, social and environmental

values of forests, drawing on public-private partnerships and participation of stakeholders (including the civil society, indigenous people and the private sector), as well as capacity building.

Financing Forests by Bank Subregion⁶

As already indicated, the overall financing potential in the forest sector of Latin America and the Caribbean was estimated at \$88.2 billion in the period 1998-2010, or \$6.8 billion per year. The countries that make up the Bank's Region 1 have the largest investment potential because of their strong industrial base and extensive forest resources (see Annex 1). It is estimated that their total financing potential is \$64.3 billion, or 73 percent of the total. Region 2 countries could account for \$10.9 billion, and Region 3 for \$13.1 billion. The breakdown of the financing potential by type of activity is somewhat different. Industrial investment requirements dominate in Regions 1 and 2; while in Region 3, the financing potential in natural forest management is more important than in industrial activities.

Financing Forests with Different Functions

As in most other sectors, the Bank's role in forestry is, to a large extent, to act as a catalyst for additional investment. With its extensive professional and financial resources and its regional coverage, the IDB has the capacity both to explore new avenues in financing and to take more risks than the national governments or private investors. In particular, new opportunities for forest financing can be found in the commercialization of various forest-based environmental services, including investments through private-public partnerships.

It is emphasized that unless policy and market failure problems are tackled, it is unrealistic to

expect large-scale private investment in sustainable forest management. Consequently, the IDB's support for *policy and institutional reform* through loan projects targeted at the creation of enabling environments for profitable business and sustainable development in forestry should be given the first priority. Of particular importance in policy reform is the development of improved concession systems for natural forest management in countries where concessions are used. The example of Bolivia is a useful reference on how the structure of industrial forestry can be overhauled through a policy reform involving new rules for concession allocation.

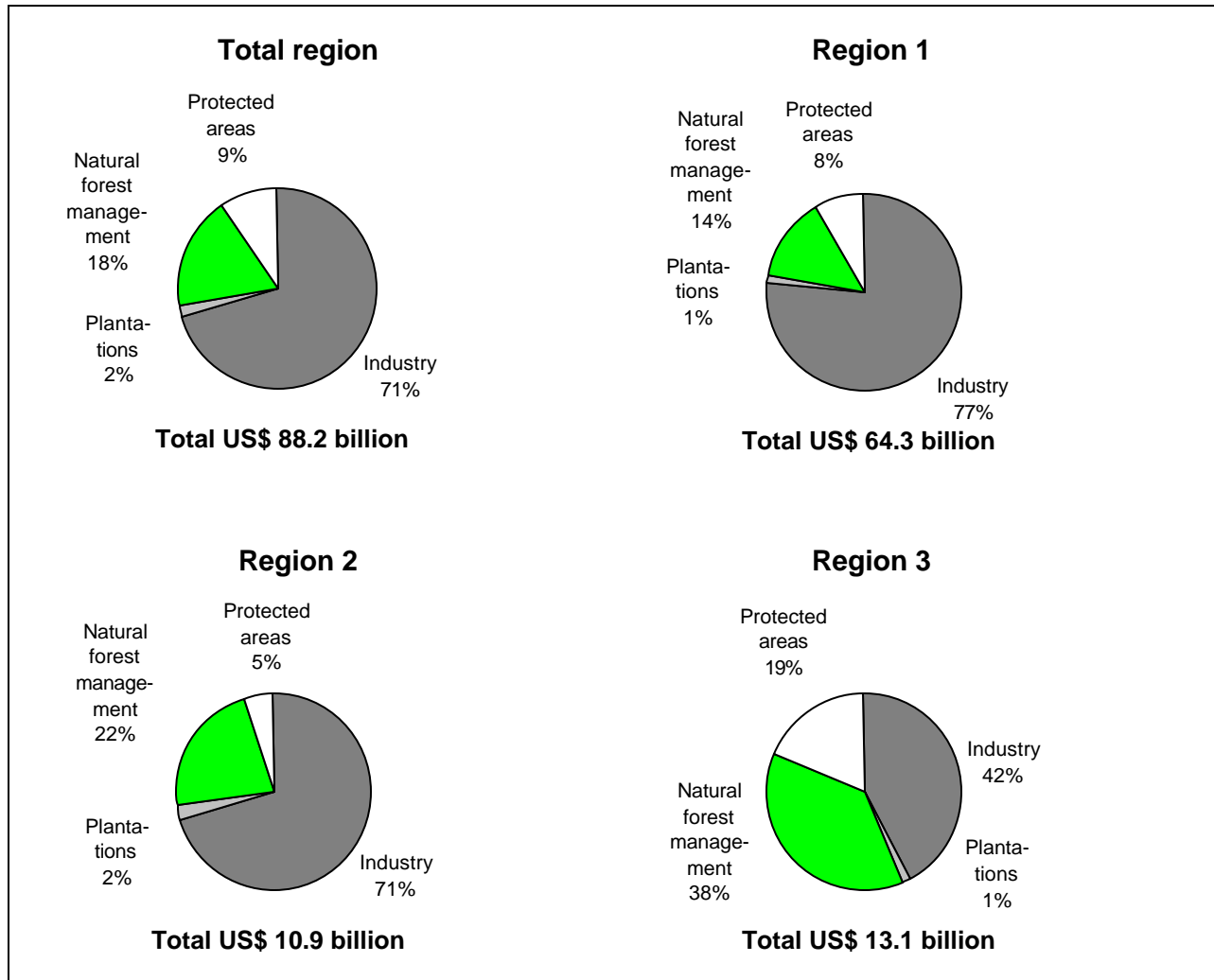
Production Forestry

In production forestry, the Bank's current instruments are well targeted to complement funding from the capital markets, the main source of financing for private investment. Direct support for pilot and pioneer projects can play a particularly important strategic role. The growing of trees for industrial uses can take place on lands suited for forestry or in fertile soils that could also be used for agriculture. The distinction is important as the latter areas tend to fall under the jurisdiction of agricultural authorities and typical tree crops include fruit trees or rubber. In addition, on forestlands, tree growing has to take into account externalities such as biodiversity conservation, a concern that has no bearing on the use of agricultural lands.

Brazil, Chile and Uruguay present important success stories in plantation forestry in Latin America. Several other countries have tried to replicate these experiences with fewer results. The main bottlenecks have been found in macroeconomic stability and poorly defined property rights. In these cases a critical mass of the resource base was created also with the assistance of public sector subsidies. As shown by Haltia and Keipi (1999), in the future such subsidies should be applicable if they meet criteria related to efficiency (see the first chapter of this study).

⁶ Region 1 includes Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay. Region 2 includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Dominican Republic and Haiti. Region 3 includes Bahamas, Barbados, Colombia, Ecuador, Guyana, Jamaica, Peru, Suriname, Trinidad and Tobago and Venezuela.

Figure 1
Financing Potential in Forestry and Forest Industries
in Latin America and the Caribbean by IDB Region, 1998-2010^{a)}



While the pulp and paper industry would require large areas of concentrated plantations to allow large-scale investments in processing, there is also a trend to promote tree planting by private farmers as one productive option for lands where crop production or grazing may be no more profitable (e.g. in Brazil). Such schemes involve participation of the industry in the landowner's investment and may also include advance payments of the harvest to address the issue of long gestation periods (Indufor and STCP 1998). These schemes can easily integrate social aspects in industrial forestry.

Certification of forest management is a promising sustainability tool because it contributes to internalizing social and environmental costs. The Bank could support certification efforts in sector work as a complementary policy instrument to reach SFM at the national level, including development of certification criteria and local capacity to implement them through improved management practices.

It could also finance sectoral investment programs where certification is an essential element to ensure effectiveness and to reduce environmental

and other risks. Under certain conditions, independent certification could serve as an appropriate element of loan conditionality linked with supporting private investment in forestry.

Some Latin American countries are already advanced in the development of certification (notably Brazil and Bolivia), while many others still need assistance to build up capacity.

Social Forestry

Social forestry contributes both indirectly and directly to social sector reforms. The direct contribution to poverty alleviation in rural areas can be observed through sustainable natural resource management and utilization. Welfare and social security networks are improved with increasing incomes and the diversification of the rural economy, which can be achieved partially by forest-based activities. Social forestry is a particularly valuable element.

Social forestry loan projects could be targeted at rural income and employment creation through such activities as agroforestry and farm forestry, NTFPs and various other community-based forest activities. Even though the short-term benefits of social forestry projects may be positive (e.g., increased self-sufficiency, reduced risk to livelihoods), these investments should also be considered in the long-term strategic context: are they leading to production systems which can be profitable enough to maintain rural populations with an adequate level of income in the long run? The answer to this question will decisively influence the project design, not only in forestry but also in social services.

Forests contribute to natural disaster prevention and mitigation by providing both physical and economic shelter against unforeseen events. This is an important consideration because the poor are most vulnerable to the negative impacts of natural disasters both in urban and rural communities.

Environmental Forestry

In environmental forestry, traditional loan project interventions in watershed management, estab-

lishment and maintenance of forest protected area networks, urban forestry and environmental conservation will remain relevant. Institutional strengthening and policy development will also be needed to build up member countries' capacity to design and implement new and innovative schemes for the *commercialization of environmental services* from forests. This is crucial for achieving an improved valuation of forest resources, which should have a positive impact on the profitability of forestry projects. Such schemes and projects include the establishment of user fees for downstream water users to protect upstream watersheds, forest-based nature tourism/ecotourism, carbon sequestration, and biodiversity prospecting.

It is, however, recognized that, with the exception of carbon sequestration, these activities tend to be location specific. They may be locally important but, in view of the magnitude of forestlands in the Latin America and the Caribbean region, they will only play a complementary role for forest owners and managers to take better care of their forest resources than in the past. From their point of view, appropriate mechanisms should be developed for compensating entire bundles of services that their forests can generate under different management regimes. An important criterion in this context is whether beneficiaries will be urban or rural communities. It would be much easier to develop mechanisms for payment/compensation of environmental services for urban communities.

The IDB could play a pioneering role in this work, which is currently spearheaded by philanthropies and NGOs with limited resources, building on their experience and cooperation. As already discussed, number of preconditions should be in place before these mechanisms can work in practice. In spite of the various limitations, compensation or commercialization of environmental services to forest owners offers major possibilities to generate financing for sustainable forest management.

Measures to Promote Demand for Forest Financing

The Bank's most important client is the public sector of its member countries. Therefore, actions

to increase the demand for Bank financing should focus on national governments. Lending to forestry in the public sector is, however, changing in scope as the implementation of forest management shifts to the private sector.

The problem of limited demand for lending to forestry does not lie with national forestry authorities that are responsible for the conservation and utilization of forests. The bottleneck is the lack of awareness and understanding of the opportunities offered by forests in the sustainable development of nations among decisionmakers in the ministries of finance, national planning agencies, national financial institutions, etc.

In order to induce demand, both external and internal issues should be addressed through interventions that put forestry financing on a level playing field with other sectors. The complexity of the problem cannot be used as an excuse to shy away from the support that the countries of Latin America and the Caribbean need to achieve SFM. The following lines of action are proposed:

- (i) Create adequate awareness among macro-level decisionmakers of the forestry sector's potential in contributing to sustainable development in the Latin America and the Caribbean countries.
- (ii) Use national forest programs as entry points to the Bank's financing within an appropriate institutional framework.⁷
- (iii) Contribute to, and distill the implications of the international forest policy processes in meeting the needs for assistance by Bank members.
- (v) Pioneer and promote the use of new financing instruments for sustainable forest management.

⁷ FAO, the Netherlands, and several other bilateral donors are supporting the development and establishment of national forest programs. Two such programs in Colombia and Nicaragua, generated large investment programs for IDB financing in 1993 and 1996.

- (v) Facilitate and support private sector investment in forestry, which will also create internal pressures for policy reforms and institutional strengthening.
- (vi) Strengthen existing and develop new strategic alliances at national and international levels within the region.

In addition to these proposals, there is a need to strengthen the Bank's own capacity to deliver financing to forest program, including specialized staffing, training of staff in country representations and backstopping capability from headquarters.

Raising Awareness of the Investment Potential of Sustainable Forest Management

As already mentioned, there is lack of recognition in Latin America and the Caribbean that sustainable forest management is a profitable and ethically attractive investment. However, decisions on investments, and consequently the demand for financing, largely depend on expected profitability. Consequently, the most important measure to create demand for financing, in broad terms, is making it clearly understood how forestry sector operations could be made profitable and competitive with other sectors. The purpose is not to expect special treatment (lower interest rates and other softer terms, lower profitability requirement, etc.) for forestry investments but a fair judgment. Because of the strong role of positive externalities present in many forest investments, there is a need to broaden the view of profitability assessment beyond the traditional financial measures and to make an effort to quantify all the benefits.

Raising the level of demand for forest financing so that it corresponds with its potential contribution to socioeconomic development and environmental conservation requires raising awareness at the country level on the developmental and environmental potential of forests. In particular, this should be geared to the decisionmakers responsible for resource allocation (finance, national planning, etc.).

Integrating sustainable forest management considerations and components into investments in sus-

tainable agriculture, biodiversity conservation, mitigation of climate change, rural development, natural disaster prevention, and other larger programs would require further work on the identification of linkages between sectors so that the potential of forestry interventions is duly considered in program and project design. The Bank's positive experience on watershed management projects shows how such understanding can lead to lasting significant results. The role of the Bank's Sustainable Development Department in identifying these opportunities should be strengthened.

National Forest Programs as the Bank's Entry Point

The Bank has a major opportunity in participating in the design and implementation of *national forest programs* as the broadly endorsed approach for sustainable forest development (UNDESA 1997, World Bank 2001). These programs provide an early entry point to project pipeline for the IDB both for policy reform and project financing, rather than waiting for these processes to result in requests to the Bank.

Well-structured national sectoral planning exercises can create demand for financing feasible actions. The review of the Bank's earlier work in technical cooperation and loan projects revealed a high correlation: when the IDB supported national forest sector planning exercises, a loan project followed (e.g. Colombia, Nicaragua). The United Nations Forum of Forests has adopted these programs as the generic concept to organize participatory, country-driven policy and program processes. In such support, cooperation with other sources of ODA would be highly desirable. Although some past efforts to develop and implement national forest program in the Latin America and the Caribbean region have suffered from political changes and accountability problems, there has been a marked improvement in their quality. The IDB could benefit from this effort and provide funding for the resulting investment programs.

In the Latin America and the Caribbean region, 14 countries are in various phases of national forest program implementation, and 12 countries are in the process of revising their programs. Six coun-

tries are still in the planning phase (FAO 2000). A recent example is Brazil, which is in the process of preparing a national forest program the first time in the country's history. Earlier efforts have focused on individual states or the Amazon region. Mexico is in the process of launching a forest development strategy (Plan estratégico 2001).

National forest program processes will also involve the preparation of *national financing strategies for sustainable forest management*. These exercises are particularly relevant for the IDB's participation because they could result in the design of nationally applicable financing instruments and measures for fund-raising and investment promotion. The strategy prepared with partial IDB funding for Mexico could result in Bank funded investment programs (Plan Estratégico 2001).

There are also other policy frameworks related to forestry, which would be useful entry points for the IDB. These include national biodiversity strategies and national environmental programs. They would be important in countries where the environmental values of forests are more important than their economic role.

Cooperation with the Private Sector and Promotion of Private Investment

Even though the Bank's main clients are member governments, the private sector is expected to play an increasingly important role in the future development of the Latin America and the Caribbean region. In the forestry sector, there is a clear shift toward the private sector in the implementation of forest management, while normative functions remain the government's role.

The key measures to promote private sector investments in forestry are the reduction of barriers to sustainable forest management resulting from an inadequate policy framework or operational constraints (skilled labor force, information on production potential, participation of stakeholders, markets, etc.). However, it is stressed that the development of an enabling business environment does not mean *laissez-faire*. Adequate forest management standards need to be in place and enforced to ensure sustainability.

The private sector also has an important role to play in creating the demand for public sector financing. Without strong requests from the productive sector, it is difficult to convince ministries of finance and other public agencies responsible for resource allocation of the need for government investments in capacity building to create enabling conditions for private operations. This kind of leveraging could be achieved particularly through national forest program exercises at the country level, but also through the private sector's own initiative. The actions of the wood industry association in Bolivia are a good example of these efforts.

The Bank could undertake the following actions in the area of cooperation with the private sector and promotion of private investments in sustainable forest management:

- (i) Assistance to governments to create enabling conditions for private sector investment in forestry, including appropriate regulation combined with incentives.
- (ii) Support through technical assistance to strategic private sector organizations in forestry and the forest industry.
- (iii) Support private sector cooperation and business development through the organization of business meetings (involving investors and foreign buyers of forest products) and workshops. Such events could play a role in promoting appropriate technologies for sustainable forest management as well.

Pilot and promote public-private partnership-based investment in sustainable forestry; apply certification as an instrument to ensure sustainability provisions in forestry financing.

Participation in International Policy Development to Promote the Demand for IDB Financing

Financing of sustainable forest management in developing countries has been one of the key topics in international policy debate since the UNCED in 1992 (Joshi 1999). Continued progress in policy development has been made under the

Intergovernmental Panel on Forests (IPF) and its successor bodies, the Intergovernmental Forum on Forests (IFF) and the United Nations Forum of Forests (UNFF).

The problem of finance for sustainable forestry is closely related to the other elements of the international agenda, notably institutional arrangements and trade and the environment. The debate has focused on the establishment of an international forest convention and its financing mechanism. Many countries in Latin America and the Caribbean have been reluctant to commit themselves to new obligations without firm indications about the necessary financial assistance from developed countries. For their part, developed countries have been reluctant to make such commitments due to past decisions to reduce official development finance in recognition of substantial financial flows from the private sector to developing countries.

The Bank needs to be actively involved in the development of international forest policy as it affects its member countries. International forest policy will also shape the future framework for financing the forestry sector at the multilateral development banks. The IDB should remain abreast of policy developments to help analyze their implications for its member countries and foster strategic alliances with other partners. The IDB's participation in the international and regional forest policy processes is essential for creating a demand for Bank financing. This involves participation in the work of the United Nations Forum on Forests to achieve and finance sustainable forest management in Latin America and the Caribbean; participation in the International Forestry Advisors' Group to exchange experience and promote co-financing arrangements with bilateral and other donor agencies operating in the region; and supporting regional and subregional policy and cooperation processes (such as the Consejo Andino de Medio Ambiente, CAAM0, and the Consejo Centroamericano de Bosques y Areas Protegidas CCAB-AP).

Strategic Alliances

There are a large number of organizations working to promote sustainable forestry in Latin

America and the Caribbean. Some of them, like IDB, take a holistic view, while others focus on a particular aspect or activity. Many of these organizations could be useful Bank partners in creating the necessary demand for lending, raising concessionary funding, and implementing projects. From the IDB's point of view, strategic alliances should preferably lead to co-financing and coordinated implementation of activities. Alliances should leverage the competitive strengths of participants.

Natural Bank allies include such regional bodies as the Economic Commission for Latin America and the Caribbean (ECLAC), the Andean Development Corporation (CAF), the Amazon Cooperation Treaty, and CCAB-AP in Central America, among others. Research organizations like CATIE could also be useful partners for the IDB because they possess in-depth knowledge for the transfer of technology.

An existing cooperation agreement with the FAO Investment Centre has not been used for the preparation of forestry projects in any significant way. However, the FAO regional office and country representatives have good knowledge of the sector and established, continuous contacts with and access to sectoral authorities. FAO would be a useful ally for the IDB in developing program and project financing since it is coordinating the technical preparation of national forestry programs in the region.

ITTO is financing a large number of pilot forestry projects in reforestation and forest management, forest industries and economic information and market intelligence in the region. ITTO projects are generally smaller than those financed by the Bank and focus on providing technical assistance. Many of these interventions should be followed up or implemented in parallel with investment projects; but direct linkages for such purpose have often been lacking. Different decision-making procedures and project cycles make full coordination difficult. Nevertheless, ITTO and the IDB could play complementary roles in financing and cooperate more closely than at present. ITTO is an especially valuable potential ally for the IDB because it is one of the few international organiza-

tions that support the development of the forest industry based on sustainably managed forests.

The World Bank is also an important potential partner for the IDB, despite of the fact that both organizations have similar comparative advantages. There are several examples of fruitful cooperation between the two organizations at the regional, national and project levels (e.g., Colombia, Nicaragua, etc.). The Revised Forest Strategy of the World Bank also emphasizes the importance of improved donor collaboration (World Bank 2001). The UNDP Program on Forests (PROFOR), which is being transferred to the World Bank, has contributed significantly to the recent conceptual development of financing mechanisms for SFM and is putting these concepts into practice in countries such as Costa Rica and Guyana.

Several bilateral donors are active in the Latin American forestry sector and many of them have made co-financing with institutions like the IDB a priority. Concessionary funding provided by them is particularly valuable in social and environmental forestry projects. Co-financing arrangements could make IDB-supported projects palatable for ministries of finance in member countries.

The recent opening of GEF financing through the IDB is an important milestone for increasing concessionary funding to environmental projects. The GEF guidelines emphasize leveraging private sector investment, providing its windows in different forms, through direct project and program financing, and through specialized funds. While financing biodiversity protection is one of the principal activities of GEF, a few policy issues continue to limit the GEF's role in funding SFM for productive investments. The IDB could contribute to the GEF dialogue about how to resolve these issues as they apply to Latin America and the Caribbean.

In the area of forestry, the Bank has worked with private sector organizations on a project-by-project basis only. They represent, however, another potential ally, carrying political weight in the national decision-making process by participating in setting priorities and defining policies. National associations of farmers, landowners, industry, contractors, and others should be made

aware of the IDB's as a potential source of financing for sustainable forest management. Bank technical cooperations could be allocated to help these organizations improve their capability to assist their members in shifting from unsustainable to sustainable forest practices.

Finally, but not least important, closer cooperation with NGOs is apparently a still largely unexplored opportunity. Alliances in this area may take some time to mature but it is likely to lead to long-term benefits for both parties. Much of the conceptual development in promoting sustainable forest management is taking place in pilot projects and research efforts carried out by NGOs and philanthropies. The IDB could help put many of these new ideas into practice on a larger scale. The track record of such organizations as the Nature Conservancy, Conservation International and WWF proves that, while pursuing their own goals, NGOs can be strong partners for multilateral development institutions. The cooperation with the IUCN in the area of analysis of financial instruments for biodiversity conservation is a good example of this type of partnership (see Bayon et al. 2000).

Strategic alliances can be useful tools for creating a demand for IDB financing and partnerships for implementation. Discussions with potential allies for this study revealed a considerable interest in such cooperative undertakings. The Bank is often expected to take the initiative. To do so may involve organizing joint seminars, workshops and conferences with potential allies; carrying out consultations on parallel or co-financing possibilities; involving potential allies in project identification, preparation and implementation; providing technical assistance to national bodies that can later work with the Bank to create a demand for forestry lending; and consulting with potential allies in the development of the Bank's policies and strategies.

Conclusions

Deforestation and the unsustainable use of forests are issues that have been accorded increasing priority on the global development agenda. A number of international, regional and country processes are underway to formulate appropriate re-

sponses to the problem. These efforts stem from a concern that neither political decisionmakers nor the markets adequately recognize or account for the positive externalities of forests and the negative externalities of unsustainable forest management. Policy and market failures lead to the sector's underperformance in terms of measured economic, social and environmental benefits.

Although the Bank recognizes the need to act on these issues, lending volumes to the forest sector have been on the decline. One of the reasons is that the Bank may underrate the investment potential of the sector. There is a lack of awareness of the full range of investment opportunities available in the forest sector, and there is inadequate clarity on what kind of activities the Bank could or should finance as stand-alone forestry projects, or as components in projects with broader objectives. There is a risk that this will result in the suboptimal allocation of resources since, as closer scrutiny indicates, the Bank's global priorities are highly relevant and applicable to forest sector operations.

The Bank's focal areas include social sector reforms; stronger growth, enhanced competitiveness and environmental sustainability; governance, modernization and reform of the state; and regional integration (IDB 2000). In each of these areas the forest sector is able to make a significant contribution. Forestry has remarkable potential to enhance the well-being of rural residents as well as their environmental and social security. The sector can also significantly expand its output and strengthen the competitive advantages of the region as a forest producer. Forests and their management are essential to the environmental sustainability of the region. The responsibility for the production of forest-based public goods and services can be increasingly shifted to the private sector, promoting the objectives of modernizing the functions of the State. Regional integration in forest-related policies, particularly trade and investment, are essential to allow individual countries to achieve sustainable forest management.

However, there are technical barriers that hinder the Bank's activities in the forest sector. Fully tapping existing investment opportunities will require diversification of the financing instruments

currently in use in the forest sector. The traditional *public sector loans* extended by the Bank will remain important in the environmental and social sectors, with typical applications in watershed management, biodiversity conservation and rural development. In industrial forestry their role is mainly to establish enabling conditions for private investment through policy development, human resource development, research, and similar activities. These loans can also be used for other activities to promote private investment in SFM.

Given the significance of externalities in the forestry sector, the Bank is in a position to contribute to the introduction and expansion of the use of *market development instruments* such as carbon offsets, water use charges, and venture funds. These are a new group of instruments that seek to create, promote, or develop new markets for services and products provided by sustainable forest management activities, and which may not be recognized as tradable commodities or services by the existing markets. Commoditization of previously non-marketable products and services (market creation) has a potentially high impact both on

economic and social development as well as on natural forest conservation. These are strategic instruments in promoting the shift from unsustainable to sustainable forestry practices, and providing an economic justification for many protection measures. The transaction costs of the use of such instruments could be reduced by packaging various, previously non-marketable forest benefits into a single “product.”

The forest sector does not have a strong image among key decisionmakers in the member countries and in the Bank. Special efforts are needed to win recognition for the development potential of the forest sector. In the member countries, *awareness-raising* efforts need to target key institutions at the highest level of political decision-making, including ministries of finance and national planning agencies. There is also a need to *strengthen the Bank's own capacity* to deliver financing to sustainable forest management, including specialized staffing, staff training in country representations and backstopping capability from headquarters.

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Key Forestry Indicators By Countries In Latin America And The Caribbean

	Forest cover area	Percentage of land area	Natural forest area	Annual change	Production of fuelwood and charcoal	Production of industrial roundwood
	1 000 ha	%	1 000 ha		1 000 m ³	
IDB1						
Argentina	33 942	12.4	33 395	-89	4 498	6 220
Bolivia	48 310	44.6	48 282	-581	1 419	892
Brazil	551 139	65.2	546 239	-2 554	135 652	84 711
Chile	7 892	10.5	6 877	-29	9 984	21 387
Paraguay	11 527	29.0	11 518	-327	6 524	3 877
Uruguay	814	4.6	658	n.s.	3 050	1 043
Sub-total	653 624		646 969	-3 580	161 127	118 130
IDB2						
Belize	1 962	86.1	1 960	-7	126	62
Costa Rica	1 248	24.4	1 220	-41	3 440	1 651
El Salvador	105	5.1	101	-4	6 809	211
Guatemala	3 841	35.5	3 813	-82	13 328	795
Honduras	4 115	3.8	4 112	-102	6 038	664
Mexico	55 387	2.0	55 278	-508	16 731	5 914
Nicaragua	5 560	4.8	5 546	-151	3 786	267
Panama	2 800	3.6	2 794	-64	969	118
Dominican Republic	1 582	32.7	1 575	-26	976	0
Haiti	21	0.8	13	0	13 328	239
Sub-total	76 621		76 412	-985	65 531	9 921
IDB3						
Bahamas	158	15.8	158	-4	0	117
Barbados	0	0.0	0	0	0	5
Colombia	52 988	51.2	52 862	-262	18 062	2 703
Ecuador	11 137	40.2	11 092	-189	5 474	5 514
Guyana	18 577	94.4	18 569	-9	21	468
Jamaica	175	16.2	160	-16	6 305	43
Peru	67 562	52.8	67 378	-217	7 315	1 546
Suriname	14 721	94.4	14 713	-12	19	103
Trinidad and Tobago	161	31.4	148	-3	22	34
Venezuela	43 995	49.9	43 742	-503	918	1 366
Sub-total	209 474		208 822	-1 215	38 136	11 899
Sub-total IDB1+IDB2+IDB3	939 719		932 203	-5 780	264 794	139 950
Other Latin American and Caribbean	10 318		10 070	-27	2 638	673
TOTAL	950 037		942 273	-5 807	267 432	140 623

Source: FAO 1999