TOWARDS NATIONAL FINANCING STRATEGIES FOR SUSTAINABLE FOREST MANAGEMENT IN LATIN AMERICA

Overview of the present situation and the experience in selected countries

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Project:
Financing strategies and mechanisms for sustainable use and conservation of forests
Phase 1: Latin America (GCP/INT/953/NET)
FAO/IUCN/CCAD/LNV-DK

Programme:
Sustainable use and conservation of forests and biodiversity in the Amazon region
ACTO-DGIS–BMZ/GTZ

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ROME 2009

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For quotation:
Dijk, Kees van & Herman Savenije. 2009. *Towards national financing strategies for sustainable forest management in Latin America: Overview of the present situation and the experience in selected countries*. Forestry Policy and Institutions Working Paper 21. FAO, Rome.

Title of the original Spanish document:
Dijk, Kees van & Herman Savenije. 2008. *Hacia estrategias nacionales de financiamiento para el manejo forestal sostenible en América Latina - Síntesis del estado actual y experiencias de algunos países.* FAO Documento de Trabajo sobre Política e Institucionales Forestales, no 21. Roma, 2008. ISBN number 978-90-51130-89-8.

Both documents can be accessed at: www.tropenbos.org or www.fao.org/forestry/finance/en/

This publication has been made possible with the financial support of the ACTO/DGIS/BMZ-GTZ regional programme *Sustainable use and conservation of forests and biodiversity in the Amazon region*, Tropenbos International and Ministry of Agriculture, Nature and Food Quality of the Netherlands.

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Editing of original version in Spanish	Montserrat Blázquez Domingo
Translation and editing in English	Leslie Wearne Duncan
Design and layout	Janny Beumer and Cor Kruft
Photographs	Tropenbos International, Herman Savenije & ESS (Emiel Roes, Greetje de Wolf and Rutger de Wolf)
ISBN	978-90-75789-17-1

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Abbreviations and Acronyms

ACTO	Amazon Cooperation Treaty Organization	IDB	Inter-American Development Bank
ALFA	Amazonian Forest Law Application Initiative	IFA	International Fund for Agricultural Development
BMZ	Federal Ministry of Economic Cooperation and Development of Germany	IFC	International Finance Corporation
CABEI	Central American Bank for Economic Integration	ITTO	International Tropical Timber Organization
CAF	Andean Development Corporation	IUCN	International Union for the Conservation of Nature
CAFTA	Central American Free Trade Agreement	KfW	German Credit Institution for Reconstruction
CATIE	Tropical Agriculture Research and Training Centre	MERCOSUR	Common Market of the South
CBD	Convention on Biological Diversity	MIF	Multilateral Investment Fund
CCAD	Central American Commission for the Environment and Development	NFFS	national forest financing strategy
CDM	Clean Development Mechanism	NFP	national forest programme
CER	certified emission right	NFP Facility	National Forest Programme Facility
CI	Conservation International	NLBI	non-legally binding instrument on all types of forest
CIAT	International Centre for Tropical Agriculture	NWFP	non-wood forest product
CIFOR	Centre for International Forestry Research	REDD	Reduced Emissions from Deforestation and forest Degradation (or “avoided deforestation”)
EIA	Environmental Initiative for the Americas	SFM	sustainable forest management
ERU	Emission Reduction Unit	TNC	The Nature Conservancy
FACE	forest absorbing carbon dioxide emissions	UNCCD	United Nations Convention to Combat Desertification
FAO	ood and Agriculture Organization of the United Nations	UNDP	United Nations Development Programme
FLEG	forest law enforcement and governance	UNFCCC	United Nations Framework Convention on Climate Change
FLEGT	Forest Law Enforcement, Governance and Trade (EU Action Plan)	UNFF	United Nations Forum on Forests
FSC	Forest Stewardship Council	UNIDO	United Nations Industrial Development Organization
GEF	Global Environment Facility	WCS	Wildlife Conservation Society
GTZ	German Agency for Technical Cooperation	WTO	World Trade Organization
HIVOS	Humanist Institute for Development Cooperation	WWF	World Wide Fund for Nature
ICRAF	International Center for Research in Agroforestry		

Foreword

Since the start of the 1990s, sustainable forest management (SFM) has been promoted as a fundamental element in the protection of environmental services of major ecological value and as a support in the pursuit of national and local objectives. However, the adoption of SFM has come up against a large number of challenges, including the need to increase its competitiveness and appeal to investors.

The question of how to broaden and diversify the financial basis for SFM has recently been receiving special attention at both national and international levels. For example, the United Nations Forum on Forests (UNFF) considered in 2009 how to help finance the implementation of a non-legally binding instrument concerning sustainable management of all types of forest, in line with an undertaking given at the seventh session of the forum in 2007, after it was identified as a priority in the course of regional discussions.

It was in this context that the Food and Agriculture Organization of the United Nations (FAO) and the Amazon Cooperation Treaty Organization (ACTO) – acting in association with the Ministry of Agriculture, Nature and Food Quality of the Netherlands, the Central American Commission for the Environment and Development (CCAD), the International Union for Conservation of Nature (IUCN) and the German Agency for Technical Cooperation (GTZ), and with the support of the National Forest Programme (NFP) Facility, the Federal Ministry of Economic Cooperation and Development of Germany, the Ministry of Foreign Affairs of the Netherlands and Tropenbos International – carried out an analysis of existing forest financing mechanisms in Latin America, a region that has become the leader in the development and implementation of innovative forest financing mechanisms. The analysis led to a better understanding of the range of existing resources and mechanisms available for the financing of SFM, the possibilities of finding alternative forms of financing and the steps to be taken in order to maximize the effectiveness of existing ones.

The present study provides a synthesis of the information and experience obtained, followed by a resulting series of key messages. First, national forest programmes (NFPs) and their financing are important in achieving a more appropriate use of national resources, and in linking forest and economic development, especially in poor rural areas. Second, it is becoming clear that forest financing strategies have to focus on an SFM that encompasses the multifunctional nature of forests and takes account of the wide range of those involved in forest management. It covers policy-making, the promotion of a diversification of financing sources and mechanisms, suggested measures to improve the investment environment and develop the market, and reflection on a participatory process of dialogue, negotiation and agreement that includes all the parties concerned. Lastly, the added value of such steps should be increased by establishing links between the forest sector and other sectors, especially that of finance.

This study is intended to provide a useful point of reference for the formulation of capacity-building initiatives that FAO, ACTO and other institutions are thinking of offering with regard to forest financing. It thus complements the range of resources, knowledge and skills that FAO and its partners have developed and are offering in this connection. In terms of individual countries, we hope that the work will be of particular help to NFPs in promoting dialogue and collaboration among actors and sectors with a view to developing sustainable solutions regarding forest financing. At the international level, we hope that it will make a major contribution to reopening international dialogue and processes concerning this very important topic.

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Acknowledgements

This document is the outcome of a joint effort during the past year on the part of a number of individuals and institutions, without whom it could not have been produced.

First of all, we wish to express our gratitude to the FAO/IUCN/CCAD project *Financing strategies and mechanisms for sustainable use and conservation of forests – Phase 1: Latin America* and the ACTO/DGIS/BMZ-GTZ regional programme *Sustainable use and conservation of forests and biodiversity in the Amazon region* for all the support we have received in the various phases of our study.

We should like to express our appreciation to the authors of the 19 national documents (a complete list of which is found at the end of this publication among writings consulted for the study), especially the authors of the nine selected country studies that formed the main basis for the study:

- Esteban Guida, Argentina
- Fernando Aguilar and Jaime Terán, Bolivia
- Santiago Barros and Karin Gauer, Chile
- Xavier Izco and Doris Cordero, Ecuador
- Axel Gómes and Roberto Cáceres, Guatemala
- Sergio Sánchez Segovia and Rosario Ambrogi, Nicaragua
- Dimas Arcia and Jorge Muñoz, Panama
- Damiana Mann and Victor Vidal, Paraguay
- Alberto Fossati and Eduardo van Hoff, Uruguay

Many of the observations, texts and specific cases included in the boxes that illustrate the progress and diversity of the various countries have been taken (sometimes verbatim) from their reports. In such cases we have given a reference to their respective reports. We do not claim – nor did we intend – to give a digest of all the wealth of information found in the national studies. The present work is more in the nature of a complementary analysis and is intended as a reference document.

We are also very grateful for the work of Marieke van Dijk, who collated and processed the information from the national studies included in the study, producing a cross-referenced database that made our analysis much easier.

While the document was being prepared, two expert workshops were organized to discuss and validate its content and conclusions, one in July 2007 in Ecuador and the other in December 2007 in Guatemala. These two meetings proved illuminating, and indeed vital, enabling us to produce the final work. We acknowledge the significant constructive and creative contributions of Carlos Aragón of ACTO, Doris Cordero of Ecuador, Axel Gómez of Guatemala, Eduardo van Hoff of Uruguay, Jorge Muñoz of Colombia, Jaime Terán of Bolivia, Ignacio Bustos of FAO, Alberto Salas of the IUCN Regional Office for MesoAmerica, and Eduardo Mansur and Marco Boscolo, both of FAO. We should like to point out that our joint form of working is very similar to that of a “community of practice”.

This document was originally produced in Spanish, and we thank Manuel Paveri for his work on the intermediate version, a job that streamlined it and gave the content a clearer structure. In addition, we gratefully acknowledge the constructive contributions of Arend Jan van Bodegom of Wageningen International and Monica Pinhanez (Consultant) regarding the semi-final version. We should also like to thank Montserrat Blázquez Domingo for her excellent work in revising and editing the final text in Spanish. We thank Leslie Wearne Duncan for her outstanding translation of the Spanish document into English.
Lastly, we should like to express our gratitude to the organizations for which we work, Tropenbos International and the Ministry of Agriculture, Nature and Food Quality of the Netherlands, for all their support and assistance in the preparation of this study.

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Executive Summary

Background

1. In recent years the question of how to broaden and diversify the financial basis of sustainable forest management (SFM) has been receiving increasing attention in the formulation and implementation of forest policies and research agendas, both in individual countries and at the international level.

2. One of the main challenges facing countries in their efforts to reduce forest degradation and deforestation is the need to *make good forest management more competitive and make forests themselves more economically attractive*, thus promoting investment in management and in payment for the goods and services produced by forests, and also ensuring that total earnings are a fair reflection of the real costs and benefits of their sustainable production.

3. In the face of this situation, the study recommends that the region's countries should formulate comprehensive national forest financing strategies (NFFSs) as part of their forest policies and national forest programmes (NFPs).

4. The work considers that the challenge lies in learning how to design an NFFS, identifying the objectives, principles, elements and those involved in the process, and also addressing the question of how formulation and implementation can be improved. All this must be done while bearing in mind the guiding principles of sustainable management, which cover institutional, social, economic, financial, technical and environmental aspects because of the multifunctional nature of forests.

5. The work seeks to offer a synthesis of experience in 19 Latin American countries (see Box 4), after which some initial achievements and experiences are presented concerning the financing of forest management in Latin America, based on the joint work of two initiatives: the FAO/IUCN/CCAD project *Financing strategies and mechanisms for sustainable use and conservation of forests – Phase 1: Latin America* and the ACTO/DGIS-BMZ/GTZ regional programme *Sustainable use and conservation of forests and biodiversity in the Amazon region* (see Box 3).

6. The present work is intended to make the information generated by the national studies more accessible and to share the experience, ideas, doubts and conclusions that have been expressed, while also highlighting the importance of formulating and implementing NFFSs that are comprehensive and properly structured. An effort is also made to identify some issues requiring special attention at both national and international levels.

7. The aim is to help build up a comprehensive overview of the countries, based on their individual situations, features, needs and potential, and to show the range of choices and ideas emerging from the studies and their analysis.

8. It is basically an attempt to address the issue of the financing of SFM in an inclusive, comprehensive manner, considering *the financing of investment and of payment for goods and services as a single whole*, bearing in mind that they are part of investment source and instrument chains and of processing and marketing chains respectively, in which each stage has its own (pre)financing systems with their own dynamic rules and mechanisms. Analysis of the processing and market chain is beyond the scope of the present work.

Conceptual framework

9. One of the main problems of SFM, and one that is common to many of the countries, is that *revenue from the use and/or conservation of existing forests is not a sufficient incentive to bring about an SFM that is competitive with other uses and attractive to investors, mainly because of a failure to capitalize on all the goods and services produced by forests*. The present work took the following as its thesis or starting point:

   When forests do not have a high enough financial value or an opportunity cost satisfactory to producers, they tend to disappear.

10. *The problems* hampering adequate financing of forest management are complex. Chief among them are the failure to appreciate the multifunctional nature of forests, with the sole focus being on timber as the source of

income, inequity in the distribution of costs and benefits along the production chain, the long time frame of the forest management and production cycle, low cost-effectiveness and the high perceived risk. Forest management practices tend to be implemented without any clear criteria of sustainability, using obsolete approaches and little technology, with consequent low productivity and efficiency. The difficulty in gaining access to existing financing mechanisms under reasonable conditions, combined with the defective and unstable political, legal and institutional environment of the forest sector, hampers governance and hence worsens the general image of the sector. All this helps to create a fairly unfavourable climate for forest investment and business.

11. At the same time, there are *opportunities and challenges* that can help to improve the situation. There is a growing awareness that traditional views, policies, sources and amounts of forest financing have been insufficient and inefficient in achieving SFM. The potential role of innovative market arrangements is the object of growing attention, while a range of promising new financing sources, instruments and mechanisms (especially regarding payment for environmental forest services) and capital market instruments is now appearing, which can help to generate additional financial resources. It is also increasingly being realized that stand-alone financing mechanisms are less effective and sustainable than those set within a broader and more reliable institutional and policy framework.

12. On the basis of the results of the national studies and the successive compilation of problems and opportunities, a diagram was developed for use as the *frame of reference or conceptual framework* to correlate and illustrate the main components and interrelations that must be taken into account when analysing forest financing and formulating a comprehensive strategy in a given country (see Box 7).

13. The diagram distinguishes *six main elements*:
    - *SFM:* the central focus or lynchpin;
    - *investment financing mechanisms:* the set of sources, instruments and operators needed to finance and incentivize SFM and reduce investment and operating risks;
    - *payment mechanisms for goods and services* produced through SFM: the set of sources, instruments and operators needed to produce adequate payment to forest managers or administrators;
    - *the enabling environment* needed in order to promote the effective operation of investment financing and payment mechanisms;
    - *the NFFS:* the set of criteria, guidelines, actions and arrangements needed to formulate and implement an adequate and effective financing system for SFM in a country;
    - *the NFP:* the comprehensive framework and multiactor process for SFM into which an NFFS must be integrated.

Main conclusions

Each chapter in this document has a section on lessons learned and another on specific conclusions, while Chapter 9 sets out the general conclusions. The main conclusions and lessons are summarized below.

“One size does not fit all”

14. The general picture of forest financing today as presented in this synthesis is variegated, with major differences among countries and their individual contexts. Although every country has some type of financing system, the levels of advancement of these systems vary widely in terms of scope, focus and how they actually operate. This fact confirms how important it is to take *the specific features of each country*, with its history, present situation and experience of forest financing, as the starting point for developing the latter. The major value of sharing knowledge in this connection among actors, countries and regions is also clear.

Forest financing currently focuses mainly on (unsustainable) harvesting

15. The most widespread allocation of private and public financing today is to the large-scale market-oriented production of timber (pulp and paper conglomerates and large companies harvesting timber from natural forests), while insufficient attention has been paid to:
    - small-scale producers and small and medium-sized enterprises;
    - sustainable management of natural forests;
    - inequities among the various actors in the investment financing and payment chains;
    - informal financing systems;
    - the formalization, institutionalization and scaling up of validated and promising financing mechanisms;
    - linkages among sectors, especially between the finance and forest sectors;
    - restoration of degraded forest areas, rehabilitation of degraded and logged-over forests and management of secondary forests.

16. The present lack of sufficient information and a failure to appreciate the whole range of forest functions prevent a proper appreciation of the real contribution of forest activities and forests to the national economy (in terms of GDP) and society as a whole.

Private money: the main future source of forest financing

17. Private sources are growing fast, both in volume and in the range offered. Major possibilities of additional new resources can also be expected through the development of (a) instruments and conditions giving access to the capital market (institutional, business and private capital) and (b) local, national and international mechanisms regarding payment for forest services, combining or bundling these with risk-mitigation instruments. There is evidence that the financial sector has the dynamism, creativity and flexibility needed to take advantage of the opportunities presented by any given economic sector – and this would include the forest sector.

18. Payment for forest services is still an innovative instrument in the countries of the region, with clear potential for providing additional revenue for forest management. Procedures and regulations for such payment have yet to be established and institutionalized. Schemes have so far tended to be implemented on an experimental or pilot scale and are often dependent on international incentivization subsidies, so that they seldom operate as payment for services in the true sense of the term. There are issues requiring clearer definition: voluntary payment as against obligatory payment; "commoditization"[1] and the fair pricing of services; project design; effective demand; and the willingness to pay. It would seem that the role of the free market in establishing payment for services is still being overestimated.

Lack of money is not always the main problem

19. The main problem with regard to finance for forest management is not always the lack of sufficient financial resources for forest development. The factor that acts as the greatest constraint on investment and the payment for goods and services is the conditions offered by the forest sector and the country for the supply of and access to these resources. A specific problem, and one that has to be solved almost as a precondition for obtaining additional resources, is the lack of security and clarity regarding the tenure of forest land and rights to forest resources, in other words the absence of a reliable legal, political and institutional environment with transparency, stability and long-term security – or what is referred to as an "enabling environment".

20. Existing forest legislation and policies should in principle provide a sufficient basis for increasing forest financing. NFPs or similar instruments provide an institutional framework that is also in principle adequate for designing comprehensive financing strategies. However, the determining factor is the political will of decision-makers to promote a sustainable and economically healthy forest management, applying corresponding legislation and policies.

21. The "enabling environment" refers mainly to factors concerned with governance and effective institutions within the individual country and the forest sector, such as the level of trust, transparency and accountability, the elimination of illegality and corruption, the existence of stable laws and policies, a well-defined land tenure system, and access to reliable information. It can be concluded that in the long term, investing in a secure, stable political, institutional and legal environment for forest financing can be more effective and sustainable than the development of mechanisms as such – and is at least equally important.

The national forest financing strategy: a comprehensive process facilitating improved financing

22. The conclusion of this work is that comprehensive perspectives and strategies must be adopted, encompassing the financing of investments (including incentives), payment for goods and services, and risk-mitigation mechanisms.

23. An NFFS has criteria of *conditionality* (incorporation of criteria of sustainability and responsible business practices), *additionality* (creation of additional revenue and improved access to financing for investments and risk-mitigation systems), *functionality* (creation of mechanisms that are effective and have an impact for the various target groups) and *equity* (a fair distribution of the costs and benefits of SFM along value chains and among the various actors in the sector) both nationally and internationally.

[1] Commoditization: the turning of an (intangible) forest service into a product or commodity that can be verified, measured, transferred and sold.

24. The strategy is not simply a document. Rather, its effectiveness is enhanced to the extent that it is seen more as a multiactor participatory process of dialogue, coordination, collaboration and negotiation, with the strong long-term commitment and accountability of the various parties involved.

The national forest financing strategy: a challenge for all concerned

25. A national strategy must take into account the wide range of actors in the sector and the various levels on which development of the sector takes place. It is part of the NFP, is integrated with national development strategies, and recognizes the importance of the tangible products and also the intangible services of forests. Account must also be taken of the whole range of types of forest, types of administrator, use and management objectives, environmental and socio-economic conditions, and the specific solutions that these various aspects may require.

26. National governments have a leading role in creating the environment and supplying institutional resources. A strong long-term State commitment toward the forest sector and its adequate financing is vitally important.

27. The private sector (both large and small enterprises) is still – and, indeed, increasingly so – the driving force behind forest development and its financing, constantly seeking opportunities within the environments created. Society is also increasingly calling on the sector to demonstrate its "licence to act" by meeting criteria of sustainability and responsible business in its daily practices.

28. It is recognized that NGOs, both environmental and social, have played a major role in the development of forest management and its financing. And their role in the development and implementation of NFFSs is still crucial, always bearing in mind their particular mandates and constituents.

The role of international cooperation: support, scaling up and facilitation

29. Bearing in mind the conclusions of this study, international development cooperation and/or a voluntary international mechanism or framework for forest financing can include in their portfolios financing for such functions as facilitation, brokering, advice and technical assistance, and also serve as platforms for exchange and incentivization.

30. Countries can benefit from international support in the following spheres:
    - the design, development and implementation of a ***national forest financing strategy***;
    - ***the creation of an enabling environment for investment and payment***, including governance, functioning institutions and transparency;
    - the development and implementation of ***innovative investment instruments and mechanisms*** and their administration;
    - ***the development of a fair market for forest goods:*** the creation and boosting of a national and international environment of equitable competition (with differentiated prices), promoting the legality and certification of SFM;
    - the development of ***payment mechanisms for forest and environmental services***, including the design and application of international payment mechanisms for global services (such as carbon fixation and biodiversity conservation);
    - the design, organization and financial structuring of a ***portfolio of projects***, programmes and "business cases" for forest investment and payment, promoting new partnerships (for example, community-business, private-public and national-international associations);
    - ***the building up of the regional, national and local capacities*** of the various actors and sectors with regard to forest financing;
    - promotion of better coordination, consistency and collaboration among donors contributing to forest development and conservation and the implementation of an NFFS.

Part 1

Background and main principles

1 Introduction

1.1 General background

The Millennium Ecosystem Assessment (2005) demonstrated the local, national and worldwide importance of forests and other ecosystems for human well-being, socio-economic development, poverty reduction, biodiversity and environmental conservation, and achievement of the Millennium Development Goals. Despite this, only 5 percent of the world's tropical forest ecosystems are under responsible management (ITTO, 2006), while such ecosystems tend to be overexploited, degraded and gradually eroded, resulting in losses and abrupt and sometimes irreversible changes in their functions and functioning. Two fundamental goals to be pursued are the elimination of obstacles to the expansion of forest areas under responsible management and a halt to the unsustainable practices that are affecting forests today. However, the current situation of forest financing can clearly be seen as a constraint,[2,3] affecting not only the financing of a more efficient use of existing (natural) forests, but also the management of secondary forests, rehabilitation of degraded areas of forest origin, and reforestation.

The expansion and diversification of financial resources for sustainable forest management (SFM) has been receiving increasing attention in the development and implementation of research policies and agendas, both nationally and internationally. During the seventh session of the United Nations Forum on Forests (UNFF) in April 2007, it was decided to design and study a worldwide financing mechanism with a comprehensive or "portfolio" focus, with a view to its approval at the eighth session in 2009. Moreover, the similar global mechanisms being developed in such international environmental agreements as the Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification (UNCCD) and the United Nations Framework Convention on Climate Change (UNFCCC) have implications for forest financing (see Box 1).

Within the subregion,[4] the member countries of the Amazon Cooperation Treaty Organization (ACTO) and the Central American Commission for the Environment and Development (CCAD) have included this topic as a priority on their work agendas, as have the countries of the Southern Cone.

One of the major challenges facing the countries in the task of reducing forest degradation and deforestation is the need to make sustainable forest use more competitive and economically attractive in order to encourage investment in it and in payment for the goods and services produced, ensuring a due balance between the costs and benefits of sustainable management.

In the face of this situation, the countries of the region need to formulate more comprehensive financing strategies within their forest policies and national forest programmes (NFPs, see Box 2). However, in many countries of the world, including those of Latin America, comprehensive national strategies do not yet exist, or are only provisional or partial, thus restricting their scope and implementation. The challenge is to design a national forest financing strategy (NFFS) with objectives, principles and procedures that make it possible to improve the formulation and implementation of forest financing policies, programmes and projects, always using the principles of sustainable management as the frame of reference, encompassing institutional, social, economic, financial, technical and ecological elements in view of the multifunctional nature of forests.

[2] A discussion of the reasons for this is beyond the scope of the present work, for there are many other works treating the topic exhaustively (for example, Sabogal *et al.*, 2006; Putz *et al.*, 2000; Contreras-Hermosilla, 2000; and Geist and Lambin, 2002).

[3] An analysis of NFPs in the countries of Latin America was carried out under the Puembo II Initiative, identifying ten priority issues for promoting sustainable forest use in the region. These include aspects of the governance and institutional capacity of intersectoral relationships, forest valuation and financing mechanisms, and the national implementation of international agreements (see Puembo, 2007).

[4] The term "subregion" is used for the subregions of Amazonia, the Southern Cone, Central America and the Caribbean, while "region" refers to the Latin American region as a whole.

This work seeks to take existing experience and achievements as a basis in order to offer an overview of the financing of forest management in Latin America, as emerged from the joint efforts of two initiatives: (a) the FAO/IUCN/CCAD project *Financing strategies and mechanisms for sustainable use and conservation of forests – Phase I: Latin America*, financed by the Netherlands; and (b) the ACTO/DGIS-BMZ/GTZ regional programme *Sustainable use and conservation of forests and biodiversity in the Amazon region*, also cofinanced by the Netherlands. Box 2 provides a summary of these initiatives. The present work is based mainly on studies carried out in 19 Latin American countries to review the current state of forest management financing.

Box 1: Financing sustainable forest management: international conventions and agreements

The following descriptions show the importance attributed to the various international conventions in the expansion and diversification of financial resources and their appropriate management in the sustainable use of forest systems. Major challenges for these efforts are how to achieve a greater consensus among the various international conventions and agreements, and how to ensure that the functions and procedures developed at this level are then applied within the actual conditions and according to the needs of the individual countries, supporting their financing policies and strategies for the sustainable management of forest resources.

Convention on Biological Diversity (CBD). In the Eighth Conference of Parties (CoP-8, Decision VIII/13), articles 20 and 21, on financing resources and financing mechanisms respectively, call on "the Executive Secretary, in consultation with Parties, Governments and relevant partners, to explore all options for resource mobilization including innovative financial mechanisms and to develop a draft strategy for resource mobilization in support of the achievement of the objectives of the Convention, taking into account the elements of the in-depth review, and to present a report on these options and the draft strategy to the ninth meeting of the Conference of the Parties (CoP-9) through the Ad Hoc Open Ended Working Group on Review of Implementation of the Convention."

United Nations Forum on Forests (UNFF). The seventh session of the forum, in April 2007, decided to "develop and consider, with a view to adopting at the eighth session of the Forum, a voluntary global financial mechanism/portfolio approach/forest financing framework for all types of forests, aiming at mobilizing significantly increased, new and additional resources from all sources, based on existing and emerging innovative approaches, also taking into account assessments and reviews of current financial mechanisms, to support the implementation of SFM, the achievement of the global objectives on forests and the implementation of the non-legally binding instrument on all types of forests." It also decided that "the Forum should, within existing resources, convene before its eighth session an open ended ad hoc expert group meeting to develop proposals for the development of a voluntary global financial mechanism/portfolio approach/forest financing framework, and invites the Collaborative Partnership on Forests to assist in the development of these proposals." At UNFF-8 in April 2009 the importance of a comprehensive approach to forest financing was reiterated, but a decision on the international architecture to enhance new and additional financing has been left to the next UNFF session in 2011.

United Nations Framework Convention on Climate Change (UNFCCC). This convention was developed under article 21 of the Kyoto Protocol or the Clean Development Mechanism (CDM), which establishes that until 2012 only afforestation and reforestation are eligible for financial compensation because of their direct contribution to carbon fixation. However, the conditions and procedures (still preliminary) are sufficiently complex to allow the substantial incorporation of the activities proposed in the CDM. At present various promising proposals and prospects are being advanced in order to include "reduced emissions from deforestation and forest degradation in developing countries" (REDD, otherwise known as "avoided deforestation") under forest conservation and sustainable management. This proposal will come into force in 2012 and will bring with it the payment of economic contributions in exchange for a global environmental service. The Conference of Parties of UNFCCC, held in Bali, Indonesia, in December 2007, adopted a resolution on this initiative (see Decision 2/CP.13, "Reducing emissions from deforestation in developing countries: approaches to stimulate action"). A decision is likely to be taken in December 2009 at COP-9 in Copenhagen.

United Nations Convention to Combat Desertification (UNCCD). In the unofficial report of the meeting of the Committee for the Review of the Implementation of the Convention (CRIC-5), held in Buenos Aires in March 2007, affected parties are invited to "mobilize innovative and additional resources, both national and international, public and private, for sustainable land management, including planting and sustainable forest management."

Box 2: National forest programmes in Latin America

All the Latin American countries are at some stage in the process of drawing up and implementing their NFPs. Although these programmes may have other titles – "forest strategy", "forest action plan", "national forest development plan" or "national forest agenda" – and although their objectives and scope may vary from country to country, they are internationally known by the term "national forest programme".

Through a process in which all the actors in a country's forest sector must participate, an NFP provides a comprehensive definition of how forest resources are to be administered, ensuring their conservation and sustainable management, within the country's development and policy framework and in line with international agreements on forests. NFPs represent a process of dialogue, coordination and collaboration between the government and those involved in the forest sector. The main features or focuses of an NFP include sovereignty and national leadership, consistency with national sustainable development policies, recognition of the multifunctional nature of forests, equity, actors' participation and co-responsibility, transparency and joint accountability, and a holistic, intersectoral, iterative approach. National and regional dialogue panels have been set up in a number of countries to facilitate interchange and coordination among the actors.

Ensuring adequate financing for forest management, rehabilitation, reforestation and conservation is seen as a key factor in the implementation of NFPs and forest policies.

For more information on NFPs and their situation in Latin American countries, see the NFP Facility: www.nfp-facility.org/home/en/; also FAO, 2006; and Savenije, 2001.

Box 3: Brief description of the joint initiative on financing strategies and mechanisms

The initiative was a collaborative effort of two projects.
The project *Financing strategies and mechanisms for sustainable use and conservation of forests – Phase 1: Latin America*, begun in 2005 and ended in December 2007, was carried out by FAO in collaboration with IUCN and CCAD, with financing from the Netherlands.

In 2007, the theme of forest financing was also incorporated into the ACTO Action Plan as an essential part of activities concerning the preparation of a common agenda for the forest sector, with support from the ACTO/DGIS-BMZ/GTZ regional project *Sustainable use and conservation of forests and biodiversity in the Amazon region*. The aim of the Amazon project is to formulate and implement regional policies for the sustainable management of natural resources in the Amazon region, with forest and biodiversity conservation as the central focus.

The main objectives of the joint initiative on financing strategies and mechanisms are:

- identification and participatory analysis of financing mechanisms capable of fostering the sustainable use and conservation of forests in Latin America;
- an increase in the capacity of NFPs in Latin American countries for the participatory development of national strategies to finance SFM.

The reason behind these initiatives is that current financial receipts from forest management and instruments to promote investment are in general insufficient to make it sustainable and competitive with other land uses, including unsustainable forest practices.

Forest owners' income comes mainly from forest production (the sale of forest products), while other functions, such as biodiversity conservation, water control, soil protection, carbon fixation and ecotourism, have not to date generated much revenue. The initiatives described are a response to the need felt in many countries in the region to expand and diversify SFM financing mechanisms, taking the multifunctional nature of forests as their starting point. By developing and strengthening instruments and mechanisms to attract, internalize and combine the financial values of all forest functions, they seek to generate adequate payment (through market mechanisms or other instruments) for the consumers, owners and administrators of the forests that produce these values. They also seek to create an appropriate combination of financing instruments and mechanisms, together with favourable conditions to promote investment and minimize risks, thus turning investment in SFM into an attractive option for private, public and institutional sectors at both national and international levels.

The main purpose of the programmes was to inventorize and analyse financing instruments and mechanisms, both traditional and innovative, in 19 Latin American countries, assessing their strong and weak points and their effectiveness, and to promote knowledge-sharing and capacity-building among the countries. The hope is to foster the development of NFFSs in the participating countries, within the framework of their NFPs. Nineteen national studies were carried out; in addition, a few regional syntheses were produced, based on an overall analysis of the country studies. Detailed information on these various studies can be found on the web page www.fao.org/forestry/mecanismosfinancieros or www.fao.org/forestry/finance/en/

The present work is intended to make the information from these national studies more accessible, sharing the experience, ideas, doubts and conclusions expressed, and highlighting the importance of planning and implementing NFFSs that are comprehensive and well structured. It also seeks to identify some issues requiring special attention at both national and international levels, and to involve as many professionals as possible in formulating these strategies, so as to stimulate debate, receive pertinent observations and build up better and wider knowledge on this subject, which has been insufficiently studied and put into practice, both nationally and internationally.

1.2 Objectives, methodology and scope

Background
This work is based on a review of the reports prepared by the initiative, including national reports, memoranda on subregional workshops and subregional syntheses (see Annex 1).

In the first place, four national studies were undertaken – in Brazil, Colombia, Costa Rica and Mexico – as a pilot experiment. These were then discussed at a workshop in Guararema, Brazil, at the end of 2005, and the conclusions adopted became the basis for drawing up the terms of reference for studies in the remaining countries. Since the FAO/IUCN/CCAD project lacked sufficient funds to cover all the countries in the region, it was decided to form a partnership with the ACTO/DGIS-BMZ/GTZ regional project *Sustainable use and conservation of forests and biodiversity in the Amazon region* to carry out the studies for the Amazon countries (see Box 3); the programme thus carried out a number of studies, using the same terms of reference.

A total of 19 national studies were carried out (see Box 4) by joint teams of forest and financial consultants from each country. The aim was to draw up an inventory and analyse the overall national situation of forest financing in each country. The reports were submitted for discussion at national validation workshops attended by representatives of the various groups of actors from each country's forest sector, in coordination with the NFP focal points. They were then presented at subregional workshops (for the Southern Cone, Amazonia and Central America), at which major conclusions and recommendations were adopted.

The national studies and other project documents are listed in Annex 1 and are available on the FAO/IUCN/CCAD project web page: www.fao.org/forestry/mecanismosfinancieros

Although the reports vary in content and scope (as will be seen below), as a whole they constitute a broad base of information, experience and ideas on the current situation and future outlook for financing the sustainable management of Latin American forest ecosystems. Significant lessons and conclusions can be drawn from this for the development and formulation of NFFSs, together with an agenda of priority issues and lines of action for national and international interchange and collaboration.

Box 4: Countries covered by studies under the initiative

Argentina	Colombia	**Guatemala**	**Paraguay**
Belize	Costa Rica	Honduras	Peru
Bolivia	Dominican Rep.	Mexico	**Uruguay**
Brazil	**Ecuador**	**Nicaragua**	Venezuela
Chile	El Salvador	**Panama**	

The nine countries in bold typeface form the main basis for the present study.

The abundance of information led to a decision to make a general collateral analysis based on the national studies. Since preparing a synthesis of 19 studies would have been such a major undertaking, it was decided to start reflection with the nine national studies of Argentina, Bolivia, Chile, Ecuador, Guatemala, Nicaragua, Panama, Paraguay and Uruguay, seeking in this way to obtain a representative coverage of the whole continent. However, in view of the importance of all the 19 national studies, the analysis was supplemented with information and examples drawn from the remaining studies, especially those of Brazil, Colombia and Costa Rica.

Objectives
The work seeks to describe a series of qualitative components that can provide guidelines for the development and improvement of an NFFS, with a view to achieving sustainable exploitation of forests (including their conservation and the rehabilitation or reforestation of degraded and secondary forest areas).

The ***specific objectives*** are:

- to develop a conceptual framework to identify and analyse the current situation of forest financing in the countries;
- to give an overview of current financing mechanisms and those being developed in the countries of the region, where possible analysing their working, limitations, strong points, effectiveness and prospects within the particular context of each country;
- to identify the conceptual basis, priorities and main components needed in developing an NFFS and its subsequent implementation;
- to recommend actions that take into account both the national and international spheres for the development and effective application of NFFSs.

The aim is to help develop a global vision common to the various countries, based on their particular situations, features, needs and capacities, and showing the range of options and initiatives emerging from the national studies and their analysis.

The ***target group*** for this work is therefore broad, including the following professional categories:

- decision-makers regarding the forest and financing policies of Latin American countries;
- officials and experts working in the development and implementation of forest policies and in SFM and its financing (government, NGOs, the private sector and the spheres of education, agriculture, finance, tourism etc.);
- representatives of national, subregional, regional and international organizations, conventions and initiatives involved in developing projects and promoting the sustainable management of forest resources and its financing.

Methodology

The nine national studies selected for the first phase of analysis were analysed using special software[5] that sorts, collates, cross-references and analyses their content. This generated a properly organized, cross-referenced database. In order to ensure that no essential details were lost, the original texts and ideas of the studies were retained, in many cases copied word for word. As part of this endeavour, a record was kept of the practical examples given in the studies. The resulting database served as the starting point in preparing the present work.

A conceptual framework was designed on the basis of the assembled studies and their initial evaluation in order to provide a structure for the subsequent analysis, incorporating all the financial sources, instruments and operators existing or operating in the various countries, as described in Chapter 2.

Once an initial analysis had been carried out, it was referred for comment and observation to a group of forest and financial experts who had taken part in preparing the national studies. These technical contributions were fine-tuned and ratified by the same experts at two joint working sessions, held in Quito in July 2007, and Guatemala in December of the same year.

[5] The ATLAS.ti programme.

Focus, scope and limitations

The basic aim was to address the financing of SFM in an inclusive, comprehensive manner, *treating the financing of investment and of payment for goods and services as a single whole*, within the framework of a proposed NFFS, highlighting the key elements and the necessary steps in its formulation.

However, in order to assess this work from an appropriate perspective in terms of its focus, scope and limitations, the following points should be noted:

- For practical reasons, the main focus is basically on analysing the financing of SFM, in other words the mechanisms for direct investment and direct payment for forest goods and services, although it is recognized and stressed that the situation is in practice more complex because of the close interrelations and links that exist concerning both investments and payments. We are aware that investment with regard to forests forms part of a chain of investment processes and mechanisms, and also that forest products form part of a processing and marketing chain; moreover, each stage in these chains has its own systems of (pre)financing, with their own dynamic rules and mechanisms. In any case, analysis of product chain financing lies outside the scope of the present work.
- All the national studies had difficulties obtaining reliable, quantitative information in order to produce a detailed diagnosis of the situation of forest financing in the individual country, although it should be pointed out that the main objective of these national studies was not to obtain precise data. This lack of data, combined with the general nature of the studies, logically had implications for the breadth and depth of the analysis. Even so, a series of valuable questions and observations emerged, in many cases leading to new questions that the present work has identified as starting points for much broader discussions or further studies exploring the topic in greater depth. The national reports should thus be considered a first approach and a good indicator of the current state of forest financing in the countries of the region, providing a useful initial basis for future work. The analysis presented in this work can therefore be seen as a preliminary exploration of a situation little known in detail and in terms of its real importance.
- The national studies show the major differences among financing mechanisms in the various countries, and also the variation within individual countries, with regard not only to objectives, operation, target groups, types of forest, and management goals, but also, importantly, to the specific conditions in which they operate. This analysis seeks to highlight the variety and special features found in each of the countries, and also the fact that not all the financial mechanisms can be applied to each and every country; in other words, *one size does not fit all*.
- Together with the national and subregional workshops, the national studies show that in a broader and more comprehensive perspective forest financing is a relatively new topic and one that is unfortunately not properly taken into consideration by many professionals and

decision-makers. In general, interaction among the forest, finance and other related sectors is only just beginning, mainly because of a widespread lack of mutual understanding and knowledge. The present work hopes to meet the need for a general frame of reference on the subject, providing information, guidelines and motivation for the forest and finance sectors, in order to help all the sectors involved to understand one another, work together and communicate in the same language, using the same terminology to promote a shared interest. The work takes the form of a narrative, including a glossary of terms and definitions relating to the subject, and is not a summary as such of all the wealth of information contributed by the national studies. Rather, it is an analysis complementing the national studies, to be used as a reference document.

1.3 Structure and reading guide

This work is divided into three main parts:

Part 1: Background and main concepts
Following this introductory chapter, which deals with the background, context and objectives of the study, Chapter 2 presents the conceptual framework and a summary of the main definitions, concepts and ideas that are used – and that we too have used in analysing the national reports. The main components of an NFFS are given in the diagram in Box 7, and these then serve as a guide for the other chapters.

Part 2: Overview of the countries
Chapters 3 to 6 describe the main components of financing mechanisms (as seen in Box 7): the sources of financing, the operators and methods of investment, and the instruments. The sources of payment and those of investment are treated in a single chapter, as are the institutions operating them, inasmuch as it is often hard to make a clear distinction between investments and payments with regard to the sources and operating institutions. All the various sources of financing are analysed in Chapter 3, while the operators and means of financing are treated in Chapter 4. Chapters 5 and 6 describe the instruments of investment financing and the instruments of payment for goods and services respectively.

Each chapter gives a general description of what is found in the national reports, illustrated with specific examples and descriptions in boxes. It also contains a section on the lessons learned, in the form of a series of comments, observations and questions arising from reflection on the studies, and closes with another section summarizing the main conclusions.

Chapter 7 analyses the main conditioning factors that make up the enabling environment needed if financing mechanisms are to operate efficiently.

Part 3: Towards an NFFS and main conclusions
On the basis of the information, lessons learned and conclusions of the preceding chapters, Chapter 8 offers some pertinent reflections on NFFSs and their components, together with a proposal as to steps for developing and implementing them.

The final chapter (Chapter 9) summarizes the main conclusions of the analysis and offers some reflections for future follow-up, particularly with a view to further progress in the formulation and implementation of NFFSs.

Annexes
The work ends with three annexes. Annex 1 summarizes the documents generated by the project, while Annex 2 contains a list of other bibliographical sources used and Annex 3 contains a glossary of financial and forest terms

2 Definitions and basic concepts

This chapter gives an overview of the main definitions, concepts and considerations used in the present work concerning the financing of SFM. It also presents the general framework (see Box 7) used as the conceptual frame of reference in collating and examining the information drawn from the national reports. The framework shows the main components of an NFFS and the links between these.

2.1 Main definitions

As already indicated, there is as yet no common knowledge or language regarding forest financing in either the forest or financial sector. Most forest experts are unfamiliar with the world of finance, while financial experts are similarly unfamiliar with appropriate forest uses. This work therefore includes a glossary explaining the most relevant terms with regard to forest financing (see Annex 3).

The most important terms used in this analysis are listed and defined below.

Sustainability means the characteristic or state in which the needs of the present local population can be satisfied without compromising the capacity of future generations or that of the populations of other regions to satisfy their needs (Millennium Ecosystem Assessment, 2005). It should be stressed that SFM and sustainability are normative concepts with ecological, technological, political, institutional, social, economic and financial dimensions. Their interpretation depends on the present values and demands of society, which are often multiple – with opposition between those of various actors[6] – and which must be made operational through transparent, participatory political processes and with the involvement of various sectors.

According to the International Tropical Timber Organization (ITTO), **sustainable forest management (SFM)** is "a consistent process in managing a forest in order to achieve one or more clearly defined management objectives with regard to the production of a constant flow of desired forest products and services without unduly reducing its inherent values or future productivity and without causing any undesirable effect in the physical and social environment" (ITTO, 2005). Such terms as "good forest management" and "responsible management", also used in the context of this definition, are all more or less synonymous, inasmuch as they cover sustainable management of all the functions of forests, including conservation, with the aim of optimizing the contribution of forests to sustainable development and the well-being of society.

Within this framework, the terms **forest** and **forest management** are defined in their broadest sense, in other words as including the various types of ecosystem with trees, such as natural forests, forest plantations and agroforestry systems. Degraded and secondary forests are also included, as is the rehabilitation of forest land, even if it has no forest cover at present, taking into account that such areas are managed under varying circumstances and by various operators who have varying motives for such management.

The term **forest sector** covers both the actors involved and their activities. It is often used to refer to the individuals in the sector who are involved in the business of timber production. In the present work, bearing in mind the multifunctional nature of forests, which generate goods and services, and also the actors involved, we use the term in a broader sense, defining it as the combination of economic, social and environmental activities in forests that are carried out by communities, NGOs, businesses and governments, linked to the knowledge, conservation, management, use, harvesting and manufacture of the goods, services and values generated by forest ecosystems. Although the definition includes the actors and activities connected with the transport, processing and marketing of forest products, the present work focuses basically on the activities and parties directly connected with forests, while recognizing the interrelations that exist in the production chain.

[6] For example, the use of forests by an indigenous community is often very different from the values and uses of a logging company.

National forest programme (NFP) is a generic concept, internationally defined as the overall framework for development and implementation of a country's SFM policies. It is defined as "a generic expression for a wide range of approaches for national policy, planning and implementation" (FAO, 2006), stressing that each country must decide on the precise form of its own commitment to SFM, promoting the contribution of forests to the country's well-being and development. Box 2 describes the concept of an NFP and gives fuller details regarding the present situation of NFPs in Latin America.

A financing mechanism is defined as an institutional arrangement that produces a transfer of financial resources between a provider and a beneficiary. In this work the term "financing mechanism" covers all the **investment mechanisms** and **payment mechanisms** for forest goods and services, made up of *sources, instruments and operators or means of distribution*. These terms are defined in the relative chapters.

This work addresses investment financing and payment for forest goods and services together. **Investment** is defined as "the application of financial resources with the objective of obtaining revenue within a specified period". It encompasses all the costs that must be covered – or the necessary investments – in the production process (including operating costs, infrastructure and equipment) in order to achieve a series of specific goods and services. **Payment for goods and services** refers to all the income received by producers for the sale of goods and services resulting from the production process for which the investment was made.

A national forest financing strategy (NFFS) is the set of measures and arrangements to create the institutional, political, legal, socio-economic and financial framework (the enabling environment) agreed with the actors most closely concerned both within and outside the forest sector. It establishes criteria and guidelines for obtaining and channelling financial resources, and identifies, develops and puts into operation financing mechanisms (composed of sources, instruments and operators) that promote investment and payment for forest goods and services. It covers the public and private sectors, and the local, regional, national and international levels, pursuing the objectives of the NFP and in general of the forest management of the various target groups, in a sustainable manner.

2.2 Sustainable forest management and the multifunctional nature of forests

Forest use and management were in the past mainly confined to the production of timber for construction, paper, fuel etc. – activities generally carried out in a purely commercial perspective, ignoring the sustainability of forests and their contribution to socio-economic development. In the past ten years, the world has started to recognize and appreciate the wide range of functions fulfilled by forests (socio-cultural, environmental and economic) and their contribution to society and human well-being, aspects that go far beyond the direct production of wood and include:

- the production of a wide range of goods, such as non-wood forest products (NWFPs) – fruit, resin, game etc.;
- the production of such services as:
  - biodiversity and habitat for a range of species;
  - regulation and conservation of water cycles and quality;
  - carbon fixation and (micro-)climate change mitigation;
  - tourism, scenic beauty and landscape amenities;
  - soil conservation;
  - human habitat;
  - cultural and spiritual values.

Forests are a renewable natural resource and represent ecosystems that ensure their continuing functions when sustainably managed. The special feature of forests and other ecosystems is that they are both the productive base and the product.[7]

Forests can in principle be managed with multiple objectives, incorporating the simultaneous production of a specific combination of goods and services, as mentioned above. For example, if a forest with the main function of wood production is well managed, it can also provide a range of other products and services as secondary functions, such as NWFPs, soil and water conservation, recreation, carbon fixation and biodiversity conservation. Similarly, a forest that is managed with the main objective of conservation implicitly produces a series of environmental services and can sometimes also allow small-scale productive activities. However, not all combinations of functions are in practice possible, inasmuch as there is an inherent opposition between productive and conservation functions, and indeed a mutual exclusivity between certain productive functions. Definition of management objectives (in terms of primary and secondary functions or uses) in a specific place depends on the type and state of the forest, the type of land tenure and rights of use, local environmental conditions, local and national socio-economic needs and interests, and national forest and development policies, ideally within a framework of comprehensive land-use planning (in which forest use is planned in relation to other land uses and values and as a part of the whole landscape).

2.3 Problems and challenges to be addressed

According to FAO (2007), forest cover in Latin America was estimated at 859 million ha in 2005, meaning a loss of 64 million ha since 1990, or an annual loss of almost 0.5 percent. However, ITTO (ITTO, 2005) observed that the area of tropical forest under responsible management, including that in Latin America, had increased substantially since 1988 – although, even with this increase, such areas barely amount to 5 percent of the total area of forest. Nevertheless, the continent still contains very large areas of natural forest that are relatively intact. As a result of the steady forest conversion and degradation that have been going on in almost all the countries for many years now, there are also vast deforested and degraded areas today, while the areas in danger of conversion or degradation are also large. Many of these areas are basically of forest aptitude or "vocation", and therefore require not only protection but also rehabilitation and/or reforestation as essential steps toward placing them under sustainable management with all the financial implications of such a move.

One of the main problems of SFM, and one common to many of the countries, is that the current income from the use and/or conservation of forests does not constitute a sufficient incentive to implement an SFM that is competitive and capable of attracting investors, mainly because of the failure to capitalize on all the goods and services provided by forests.

This work has taken the following statement as its starting point:

> *When forests do not have a high enough financial value or an opportunity cost satisfactory to the producer, they tend to disappear.*

In financial terms, it can be said that the internal rate of return does not cover – or, better, does not exceed – the opportunity cost as compared with any other activity over a similar period of time. Starting with the assumption that countries and the world in general need forests and wish to maintain them, this starting point means that it is necessary to seek a sound financing strategy for SFM that: (a) generates a sufficient livelihood for forest owners; (b) stimulates investment; (c) makes it more competitive in comparison with present and alternative uses, such as unsustainable (and illegal) felling, agriculture, livestock rearing on forest land and mining; and (d) seeks partnerships with other sectors, especially those of finance and agriculture.

The basic problems hampering the adequate financing of forest management can be summed up as follows:

- Society has ignored and undervalued the multiple functions of forests.
  - In many tropical countries, the value of standing forests (growing stock) is not recognized and forests are still seen as a resource to be extracted, with a residual value diminishing to zero.
  - Forests have been mainly valued for their direct economic functions, as a source of wood and as contributing to GDP,

[7] In economic terms it can be said that the ecosystem is the natural *capital* and the goods and services it generates are the *income*. If the income is to be sustained, investment must be made in appropriate management of the natural capital and its productive capacity. Deforestation and degradation can be seen as a loss of natural capital, entailing a reduction in its capacity to produce an adequate income. In many cases, in order to achieve sustainable management of forests and ensure their continuing functions, an additional investment is first needed in the rehabilitation and restoration of degraded forests to reconstitute the natural capital.

although recently a generalized awareness has been growing of the fact that the multifunctional nature of forests generates goods and services with a significant value for society as a whole and a broad range of users. The latter generally obtain these goods and services free of charge, and in exchange those who maintain and manage their sources receive no financial compensation or proper remuneration. The real value of forests and their functions for society are not yet properly incorporated into price structures, markets and other mechanisms.

- Recognition of wood as the sole asset coming from forests – and only in terms of its commercial and financial value – means that forest management (a) is dependent exclusively on its sale to generate resources, and (b) balances costs solely against the prices of wood, without taking possible income flows from other functions into account.
- Generally speaking, the real costs of forest management are not properly incorporated into the balance sheet of costs and benefits of the commercial operation. For example, in the case of the harvesting of trees in natural forests for timber, almost the only costs taken into account are those of felling, transport and processing, while those of the management required for present and future sustainable production (for example, regeneration, maintenance and protection activities) are ignored.
- In addition, costs and benefits are not equitably distributed along the production chain. Transporters and middlemen normally receive the lion's share of economic benefits, while forest owners are not fairly compensated – and not to any extent that would allow them to continue to manage their forests sustainably.
- The previous problem is the partial reason why, under present circumstances, forest management does not bring in a large enough return to cover forest owners' production costs, and why total revenue is lower than that normally expected from a commercially competitive business. The low income received is not a sufficient incentive for the owner and/or producer to adopt SFM practices, but, on the contrary, represents a disincentive.
- Moreover, the complex biological, financial, regulatory and political aspects, combined with the long-term nature of forest activities, mean that the financial sector considers such activities as high-risk propositions, partly as a result of inadequate knowledge and partly because of a sometimes inaccurate view of the forest sector in general. There is clearly a disjunction between the two sectors.
- The long-term nature of the forest management and production cycle, its high initial and ongoing costs, requiring a series of investments throughout the life of the forest, and the fact that any profit is for the most part obtained at the end of the productive cycle in the case of plantations (although not in the case of indigenous forests, which generate immediate cash flows) tend to cause serious cash-flow problems for owners, leading to a clear need for bridging loans or start-up money. This factor is fairly incompatible with the tendency of many decision-makers – whether politicians, investors or financial managers – to allow immediate results to prevail over collective and long-term interests.
- Forest owners, especially smaller ones, tend to have a very limited capacity for self-financing and capital accumulation, resulting in a need for financing from outside sources. This problem is compounded by their difficulty in gaining access to any financing mechanisms that might be available at reasonable rates.
- Forest management practices tend to be carried out without clear criteria of sustainability, productivity and efficiency, or using obsolete or insufficient technology, which contributes to higher operating costs and partially explains their low cost-effectiveness.
- Moreover, conditions in the political, legal and institutional environment of the forest sector are often defective and unstable, making governance difficult and worsening the general image of the sector, thus contributing to an unfavourable forest investment and business environment (see Box 5).
- Lastly, SFM suffers from unfair competition because of such factors as illegal logging and misguided subsidies and policies that favour the alternative use of forest land for agriculture or livestock rearing. Decisions to convert forests areas to other uses are not always based on the real value of forests, but on the apparent present value of their products in comparison with the quantifiable and recognized market value of agricultural and livestock products.

All these factors form a vicious circle, in which the shortcomings in institutional and market-related policies concerning the forest sector at both national and international levels in turn hamper the adequate financing of forest management. The conversion and degradation of forests take place precisely because they seem more profitable and because the forest administrator's costs and benefits are different from the costs and benefits perceived by society at the local, national and international levels (Moura Costa, 2005).

Box 5: Sectoral and national practices and conditions hampering an enabling environment for forest investment and business

In many countries, the forest sector, which focuses basically on logging, is marked by low productivity, efficiency and investment levels and by the use of obsolete technology, which is a further reason for its low profitability. Forests are in practice seen simply as a cheap source of timber, which is harvested using unsustainable, inefficient and sometimes illegal and questionable practices, with an eye to a quick profit and without any incentive for reinvestment in order to allow fresh production in the future.

The negative environmental and social effects associated with these practices are not included in the business costs. In this situation, the financing of forest management consists basically of the sale of timber, sometimes complemented by a series of government incentives, such as subsidies, subsidized loans, and economic and fiscal instruments, for example tax exemption, in order to reduce capital costs and certain operating costs. Such instruments have focused mainly on commercial plantations, and to a much smaller extent on indigenous forests and community forestry activities. In this essentially timber-based type of forest economy, income has generally been insufficient to turn forest management into a profitable and environmentally effective business proposition. Producers do not receive adequate compensation for the social and environmental effects they generate, particularly forest and environmental services.

In the long term, an enabling environment for forest business depends to a large extent on macroeconomic and political stability and on legal security of tenure of resources – elements that are very precarious in Latin American countries. Current shortcomings regarding governance and effective institutions in the sector and in the countries in general, such as bureaucracy, corruption, instability of management rules, and the lack of transparency, participation, legitimacy and public trust have been identified as factors increasing the risk and uncertainty of forest activities. Very often, only part of the sums collected from timber is reinvested by the government in forest management. Moreover, there is little coordination among the various financing mechanisms, leading to loss and inefficiency in their use. Rights of access to forest resources (formal and customary or traditional) are often not clearly defined, leading to situations of conflict. Insecurity of tenure and situations of open access to forests tend to foster the maximization of immediate profit rather than encouraging long-term planning and investment, a situation that hampers sustainable forest business.

In addition, there are conflicts with certain policies promoting other sectors (for example, agriculture or mining), a defective public forestry institutional structure, and scant or belated control over the proper use of incentives granted for forest investment.

However, there are also ***opportunities and challenges*** that can help to improve the situation:

- In recent years, there has been a general trend toward a stagnation of public and private financing for SFM, including that from international aid agencies (Gutman, 2003), while there is also a lack of integration of the forest sector into the capital market and limited access to private capital, although private financing already exceeds that from the public sector (Canby and Raditz, 2006). Awareness is growing that previously accepted views, policies, sources and volumes of forest financing have been insufficient and inefficient in achieving SFM, and that modifications are needed.
- Traditional regulation, control and incentive instruments (basically those of the State) are defective and have not improved the situation. This has led to a view that SFM should not be the sole responsibility of the government, but of society in general, and that modified and/or new financial mechanisms to promote it are needed.
- On the other hand, the multiple values of forests are increasingly being recognized. For example, the role of forests in mitigating the effects of climate change is now widely recognized and can provide a real opportunity for additional income in the near future (see Box 6). Ecotourism, water and biodiversity can offer similar opportunities.
- The potential role of innovative market arrangements is also receiving increasing attention, leading to the appearance of a variety of promising innovative financing sources, instruments and mechanisms, particularly with regard to payment for environmental forest services, and also capital market instruments that can help to generate additional revenue, thus making forest investment more attractive and sustainable forest management more possible.
- It is increasingly being realized that financing mechanisms are less effective and sustainable on their own, and need to be set within a broader and more solid institutional and political framework. Moreover, as a result of globalization, national aspects are increasingly being incorporated into international policies, agreements and markets.

Conclusion

In order to break the vicious circle of problems, meet the challenges and take advantage of the opportunities to bring about a better financing situation for SFM, wide-ranging, comprehensive approaches and strategies are needed, which should include measures concerning forest

administrators, financing mechanisms and the various aspects of the general environment.

Our thesis is that a broader, diversified financing basis, which is desirable with a view to implementing SFM, has the objective of *increasing the competitiveness of forest management and the attractiveness of investment and payment for goods and services, by upholding the multifunctional nature and sustainability of forests.*

Box 6: Is climate change an opportunity for sustainable forest management?

In the context of the current debate on climate change, the impact of the loss of forests (through fire and deforestation) on the level of greenhouse gas emissions seems clear. On the other hand, the conservation and expansion of forests through planting and regeneration produce positive effects by fixing and storing large amounts of carbon. At the most recent UNFCCC Conference in Bali, Indonesia, in December 2007, a resolution was adopted calling on the parties to express their views on issues to be addressed in order to include "the reduction in emissions caused by deforestation and forest degradation" within the terms of the convention after 2012 (Decision -/CP.13, "Reducing emissions from deforestation in developing countries: approaches to stimulate action"). The multifunctional nature of forests and the results of discussions regarding climate change can constitute a major opportunity to capitalize on forests. They should also generate diversified income through payment for the whole range of functions (goods and services) they produce, both through the creation of markets for these and also through other voluntary or compulsory instruments that may be established, based on the principle that "the beneficiary pays". It can therefore be concluded that SFM may become self-financing by taking advantage of the wide range of possibilities and packaging or bundling finance.

2.4 Conceptual framework

Background
On the basis of the national studies carried out by the project, prior compilation of problems and opportunities, and other works on the issue, a general diagram or chart was drawn up that was then used as the frame of reference or conceptual framework to organize the main components and interrelations that must be taken into account when analysing forest financing and developing a comprehensive strategy for the countries. The

diagram is given in Box 7. It is clear that it is a simplification, inasmuch as it is hard to identify and indicate all the possibilities, situations and dynamics that must be taken into consideration in a single diagram. However, it is intended to guide the way through the labyrinth of existing and possible financing mechanisms and the factors affecting them, and also to illustrate the structure of the present work.

The diagram, seen in Box 7, has ***six main elements***:

1. sustainable forest management, as the central focus or lynchpin;
2. investment financing mechanisms: the set of sources, instruments and operators to finance, incentivize and mitigate investment and operating risks with regard to sustainable forest management;
3. payment mechanisms for forest goods and services produced by sustainable forest management: the set of sources, instruments and operators to provide adequate payment to forest managers or administrators;
4. the enabling environment that is needed in order to promote the effective functioning of investment financing and payment mechanisms;
5. the national forest financing strategy: the set of criteria, guidelines, actions and arrangements for the formulation and implementation of an adequate and effective financing system for sustainable forest management within a country;
6. the national forest programme, as the comprehensive framework and multiactor process for sustainable forest management, which should encompass a national forest financing strategy.

1. Sustainable forest management as central focus or lynchpin

Analysis of the diagram must start with the figure (the "tree") in the centre, which represents the group of forest owners or the bodies or people who manage the various types of forest for various purposes; this group must be the main focus and target group of any NFFS. The common denominator of the target group (the end beneficiaries) is its need to make the business of forest management profitable, attractive and sustainable, increasing income through better prices, a diversification of sources, an increase in forest production through the use of improved forest practices, and a reduction in costs and risks. In other words, investment must be made in improving the productivity, efficiency and effectiveness of forest operations and management, while seeking access to the most economical financing possible.

The *target group* is very varied, with a wide range of features, conditions and objectives in the use and management of the forest resource. It includes:

- small-farming communities;
- small and medium owners, in some cases grouped into associations or organizations;
- NGOs managing conservation areas;
- private businesses, in many cases vertically integrated with plantations and natural forests;
- the State.

There may be joint ventures involving the various categories (for example communities and businesses or NGOs, or the State and businesses or communities).

The parties involved in the forest sector operate under varying conditions and with varying types of forest (natural forest, which may be primary, secondary or degraded, moist or dry, plantations, protected areas, agroforestry systems, areas that are accessible or isolated, rich or poor, forests with varying types of tenure, etc.). They also vary widely with respect to their primary or secondary use and management objectives (for example, conservation or production, sale on the local or international market). An owner's forest involvement may be partial, as one of the elements of the holding – the commonest situation in the case of small-scale producers – or total.

This diversity in the situations, conditions and objectives of the target groups leads to a diversity in the flow of costs and income and in the need for solvency and liquidity among the various groups of actors, and even within a single group, and also in the type of outside financing required, stressing the need for specific investment financing and payment mechanisms suited to each situation, and an environment that fosters their effective operation.

So far as SFM financing is concerned, the central figure is linked to:

- financing of costs (operation and/or investment), on the left-hand side;
- payment for the sale of the goods and services produced, on the right-hand side.

2. Investment financing mechanisms

The left side of the diagram, under the title "Investment mechanisms: financing, stimulation and risk mitigation regarding investment and operating costs", is divided into two cells.

The first cell on the left defines the sources and instruments that help to reduce costs, provide liquidity and mitigate risks. These elements include the owner's own financial resources (reinvestment of savings from business operations) and resources that may be received from outside in the shape of (a) incentives (subsidies and tax exemptions), (b) bank loans or economic development loans, (c) capital market instruments (shares, bonds, seed money, commoditization, venture capital etc.) and (d) insurance, guarantees etc. Financing comes from a wide range of sources, including self-financing and local, national and international sources (the State, international and financial aid, institutional investors, NGOs, banks etc.). There are often links, and sometimes resource flows, among these sources. It should be noted that forest investment mechanisms do not operate in

isolation, but are part and parcel of the complex of local, national and international financial chains. In section 3.2 (Sources of investment financing) and Chapter 5 (Investment financing instruments), this aspect is examined in detail, with descriptions of concrete situations taken from the national studies.

The second cell defines investment operators or their means of distribution, including the State, banks, NGOs and informal money-lenders. In several countries, special distribution systems have been created, particularly in the form of special funds for the financing of investments and payments (the National Forestry Financing Fund [FONAFIFO] in Costa Rica, the National Fund for Nature Conservation [FONACON] in Guatemala, the National Forest Development Fund [FONADEFO] in Nicaragua, the Forest Development Promotion Fund [FONDEBOSQUE] in Peru and the National Forest Development Fund [FONABOSQUE] in Bolivia). Such funds may have specific objectives, or a number of objectives that entail the concurrent use of a variety of sources and instruments. Their focus is on facilitating the link between those supplying the financing and its beneficiaries or users (forest owners and/or managers). For further information, see section 4.2 (Investment operators).

Three challenges have been identified with a view to expanding and promoting the financing of investment, and reducing the risk and uncertainty of SFM. These concern "responsible investment":

- obtaining and recording a real picture of the economic and financial needs of the relevant parties in each case, together with clear, precise information as to resources and possibilities;
- defining an appropriate combination of mechanisms and enabling conditions required in the face of the diversity of needs of the various target groups;
- defining how to incorporate and ensure the inclusion of sustainability criteria in applications for financing, for SFM must be a mandatory condition for the granting of such financing.

3. Payment mechanisms for forest goods and services

On the right of the diagram, under the title "Payment/purchase mechanisms for forest/environmental goods and services", there is then a division into two cells: (a) payment sources and instruments, and (b) operators and means of payment.

The objective of the delivery of financial resources under payment mechanisms is very different from that under investment financing mechanisms. While investment is intended to help finance production costs (financing of inputs), payment corresponds to remuneration for the goods and services produced (payment for outputs). Basically, payment is made for the sale of a product, which may be a service provided or a product delivered.

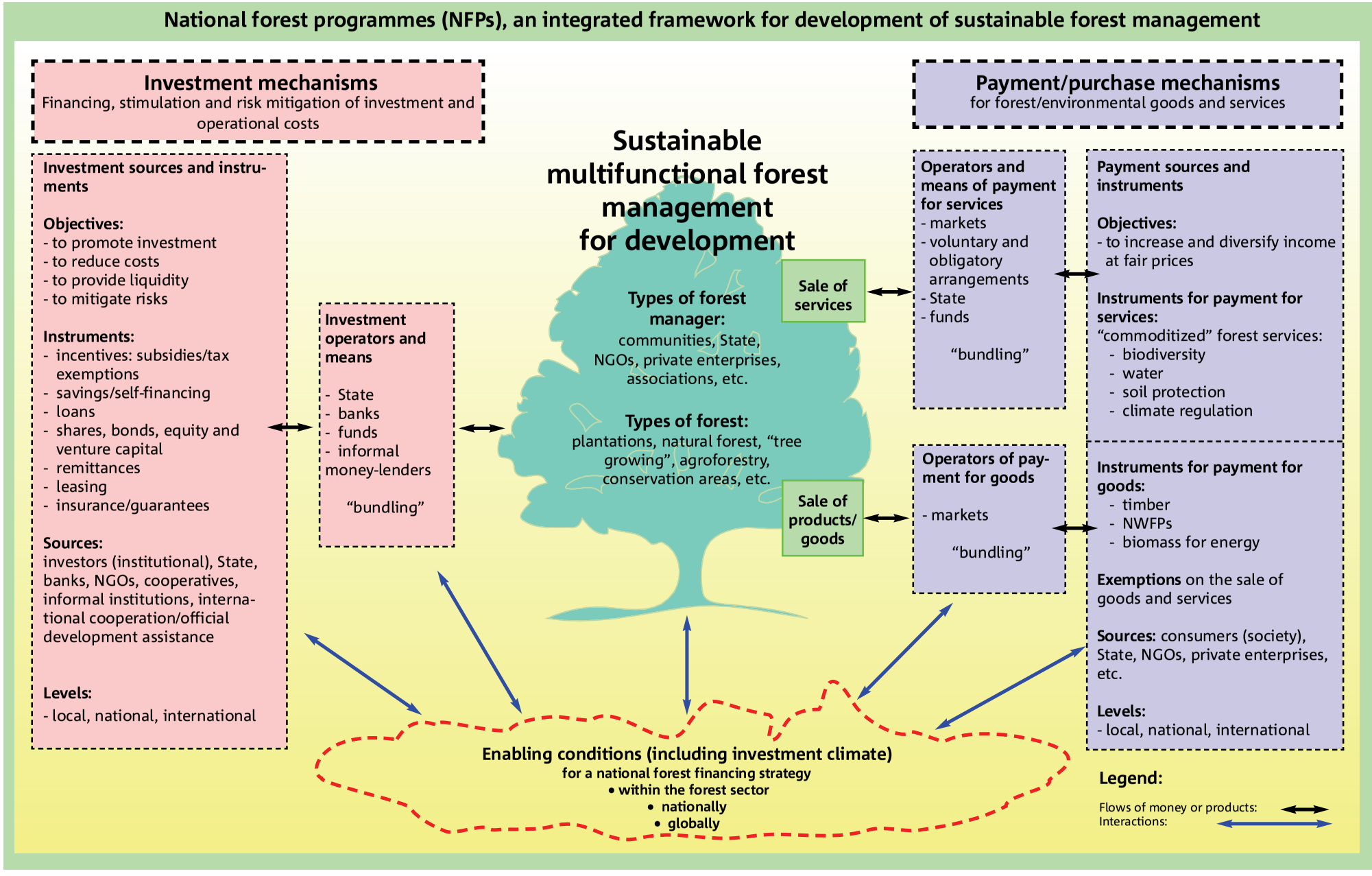
The diagram also distinguishes between (a) payment mechanisms for goods and (b) payment mechanisms for services, in view of the distinct features and procedures involved. The two elements differ as to their state of development, their operationalization, the type of purchaser or source, the instruments used to make the payment and their position in their value chain.

- *The sale of products*, especially wood, generally takes place with direct payment and in accordance with already established markets that are relatively well organized and integrated into the national and international markets, through a system of existing production, processing and marketing chains.
- *Payment for services* is an innovative activity that is coming to the fore but is still far from being fully developed and established. In view of the particular features of the various services and beneficiaries (ranging from local to international), it seems clear that a range of operators and arrangements is needed, going well beyond the direct payments made by voluntary markets, as is usually the case for goods. In the case of a number of forest services, the market does not seem the most appropriate way of establishing an adequate payment system; rather, negotiated or obligatory arrangements are needed, based on State intervention, with the definition of tariffs and the relative legal mechanisms, or on international conventions. There is a particular problem with the sale of services and the need to turn them into a saleable product (commoditization), inasmuch as such products are generally not clearly defined and often appear to be simply by-products. The *output* therefore needs to be defined more clearly in terms that can be measured.[8]

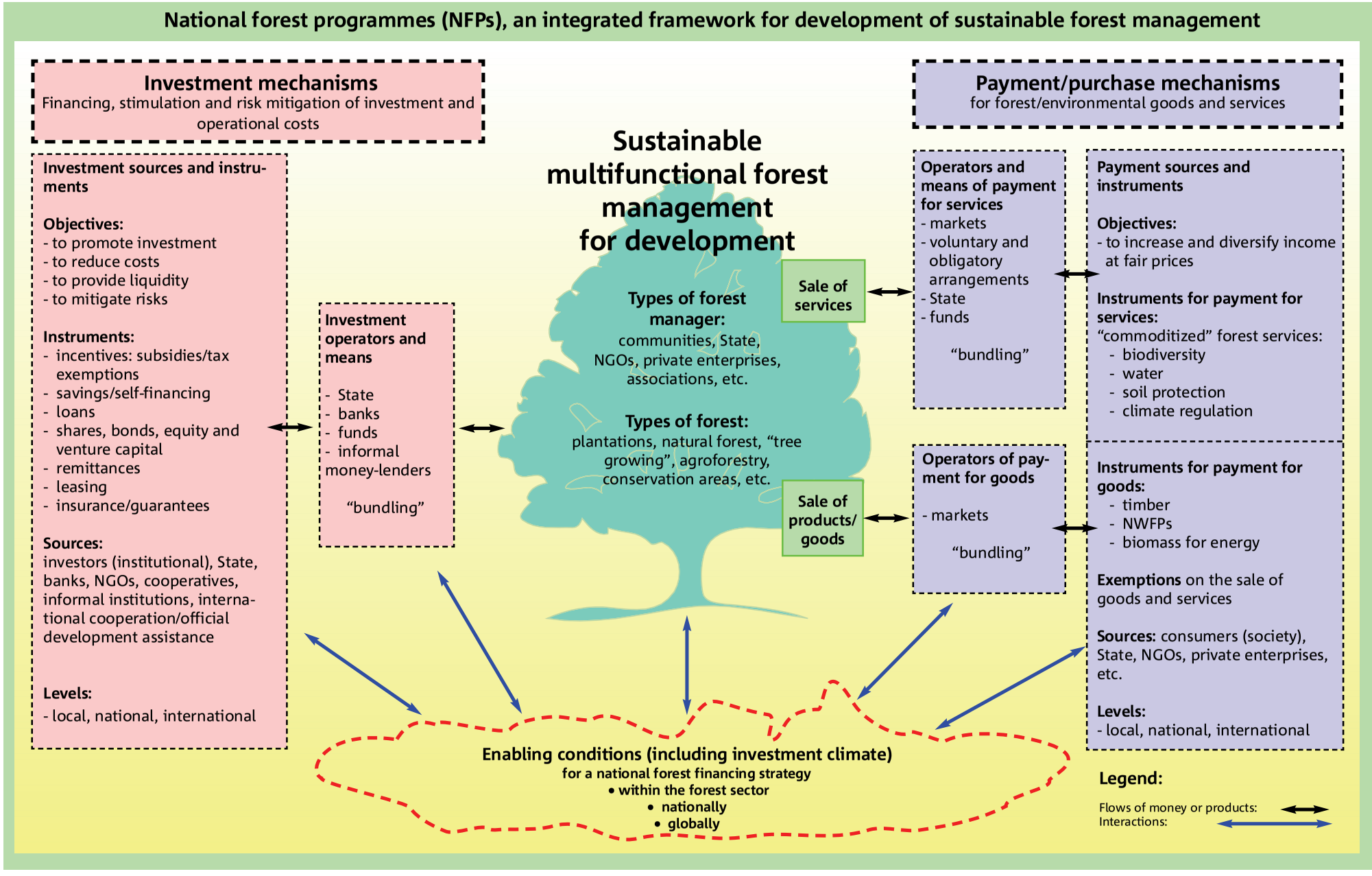
The "Payment sources and instruments" cell gives the objectives as "increasing and diversifying income at fair prices". The instruments are divided into payment for goods – timber, NWFPs, biomass for energy etc. – and payment for services – biodiversity, tourism and recreation, water conservation, soil protection, climate change mitigation (carbon fixation, avoided deforestation) etc. The sources of payment also vary, ranging from consumers (society) to the

[8] For example: How is the service of "soil conservation" defined? How is a product quantified? What should be the basis for making the payment and monitoring the impact?

Box 7: Conceptual framework for a national forest financing strategy - a multiactor process based on conditionality, additionality, functionality and equity



Box 7: Conceptual framework for a national forest financing strategy - a multiactor process based on conditionality, additionality, functionality and equity



State, private enterprises and NGOs,[9] and have varying reasons (see Chapter 3). The services and their users or beneficiaries may be of local or global significance, and this is reflected in the variety of possible instruments to be established (see Chapter 6).

"Operators and means of payment for services" are defined in a second cell. The main function of operators is to connect the supplier/seller of products, generally the forest administrator or owner, with the users or beneficiaries of the good or service (the purchasers).

The flow or rhythm of income may vary depending on the particular situation, and this has implications for cash flow and outside financing. In the case of plantations, there may be intermittent payments for goods (wood), depending on thinnings, but the main harvest takes place at the end of forest activity. Cycles are different in the case of the use of natural forests, in that income is produced at periodic intervals (depending on production cycles: several years for timber, each year for certain NWFPs such as Brazil nuts). On the other hand, payment for environmental services can be made in a regular flow throughout the life of the natural or planted forest, for example monthly, annually or at specified intervals. Those involved in forest management will seek to combine the various sources of income, optimizing production of a range of goods and services from the same area. Ideally, in order to achieve a regular cash flow, such income should be combined with investment financing.

All the foregoing also confirms the need for an appropriate combination of payment arrangements and regulatory conditions for the payment for goods and environmental services, in order to meet the needs of the various target groups and situations, and also to ensure fair, adequate payment to cover the costs of their sustainable production (see Chapter 6).

Payment operators are often the same as those for investments. In particular, the funds used for payments and subsidies are combined, thus forming a concrete bundling instrument. The sources may also be the same, for example aid agencies. The present work examines the sources of both investments and payments in Chapter 3, and the operators of both investments and payments in Chapter 4.

[9] For example, actors in the forest sector may pay for conservation of the resource on the basis of the value of the existence of forests, a type of payment that is still rare, but may become more widespread in the future in view of global environmental problems.

4. An enabling environment for financing mechanisms

An enabling environment is formed by the combination of factors or conditions that promote (or influence) the functioning, effectiveness, equity and impact of financing mechanisms, together with the attractiveness of practising SFM, investing in it or paying for it. It includes factors that operate within the sector, the country and the international context.

Within the context of the individual country, these factors concern mainly the legal, political and institutional framework. This takes into account the macroeconomic situation with a view to making it more favourable and stable, and other aspects concerning governance (see Box 5).

Many of the calls for sustainable production of goods and services from tropical forests come from the international community, as a consequence of globalization. The use and price of such products are increasingly determined by international conventions and agreements (UNFF, the CBD, UNFCCC, ITTO, the Convention on International Trade in Endangered Species of Wild Fauna and Flora [CITES], the World Trade Organization [WTO], the EU Action Plan for Forest Law Enforcement, Governance and Trade [FLEGT] etc.) and international markets (a result of certification and other market instruments that encourage more responsible forest enterprises). The international context must thus be seen as an important element in the analysis and development of what an enabling environment in an NFFS should be.

Chapter 7 summarizes and analyses the main results of the national studies. Here stress is laid on the major importance of an enabling environment in order to improve the prospects of forest financing and the context of forest business.

5. National forest financing strategies (NFFSs)

Taking the previous explanations as a starting point, we can return to the definition of an NFFS. The combination of investment and payment mechanisms sets the financial scene for SFM with regard to forest owners and administrators/managers, and these mechanisms are therefore the most tangible and visible components of a country's forest financing strategy. However, they are not sufficient on their own, because if they are to function effectively and sustainably, a comprehensive view of the sector's financing (whether the financing is of public or private origin) is needed, together with the creation of an environment of enabling conditions. An NFFS must be based on criteria of *conditionality* (for example, those of sustainability and of what a responsible enterprise should be), *additionality* (for example, the creation of additional revenue and improved access to financing for investments and risk-mitigation

systems), *functionality* (the effectiveness and impact of mechanisms) and *equity* (a fair division of the costs and benefits of SFM along value chains and among the various actors in the sector), in both the national and international contexts.

Chapter 8 focuses in greater detail on the principles, objectives, elements and steps that must be contained in an NFFS, its formulation and its implementation. These components were partially developed during the workshop held in Guararema, Brazil, in 2005, attended by the consultants and focal points of NFPs, and have now been further expanded on the basis of information from the national studies and synthesized in the present work.

6. National forest programmes (NFPs)
At the Guararema workshop and also at the meetings of experts in Quito and Guatemala, it was stressed that an NFFS must not be developed in isolation, but must be an integrated component of the national forest policy, encompassing the objectives and aims of the NFP. While adequate financing is of course necessary, it is not on its own capable of ensuring the success of SFM, inasmuch as its effectiveness and impact are reduced when it is not well anchored in the other instruments to promote SFM. Similarly, the principles of an NFP, seen in Box 2, must also be the principles of an NFFS.

2.5 Summary

In line with the view and concepts noted above, an inclusive, comprehensive focus with respect to forest financing must be adopted when formulating an NFFS, so that the strategy takes account of the whole range of actors in the sector and the various levels at which development of the sector takes place, and also so that it is coordinated with the NFP and national development strategies. It is also necessary to recognize the importance of both the tangible products and the intangible services of forests, as well as the wide range of types of forest, types of forest administrator, use and management objectives, environmental and socio-economic conditions, and the specific solutions that these aspects may require. On the basis of this conceptual framework and the information provided in the national reports, the current situation and future prospects for forest financing in Latin America are analysed in the following chapters.

Part 2

Overview of the countries

3 Sources of financing

3.1 Introduction

The *source of financing* refers to the origin of the financial resources used to underwrite the investment and pay those who carry out forest management. The sources contribute directly to the distribution operator (see Chapter 4) and often form part of a chain of sources in which one source contributes to another. This chapter refers individually to the initial and intermediate sources in the chain. In general, it answers the question of where the money comes from both to finance the investment and to pay for forest goods and services.

In the analysis given below, the following sources of financing are distinguished:

1. sources of financing for investment purposes:
   - national public sources (centralized and/or decentralized/local);
   - bank loans, multilateral development funds and international loans;
   - private sources;
2. sources of financing for the payment for goods and services;
3. international grants.

Sections 3.2 (investment) and 3.3 (payment) provide an overview of the general situation of the countries in this regard. The national studies indicated the difficulty of generating, finding and/or gaining access to precise data on the volumes of the various sources (and their origin and focus). The following chapter is therefore basically concerned with quality. International grants are treated in a separate section, inasmuch as they contribute both to investment and to the payment for goods and services (3.4), and include social development projects that affect forests or their vicinity. A summary of lessons learned is given in section 3.5, followed by a conclusion (3.6).

3.2 Sources of investment financing

National public sources

The national studies indicate that the countries have a variety of public sources to finance (a) the activities of forest policy bodies (indirect investment) and (b) the promotion or incentivization of forest management (direct investment).

In general terms, indirect investment focuses on financing official forest bodies and other organizations acting under a State mandate. Resources from the State treasury are allocated to these bodies and organizations in the national budget so that they can carry out their activities of establishing, managing and conserving forest resources.

Direct investment resources used by public bodies and organizations to promote forest management also generally come from the State treasury. However, various supplementary sources may exist – for example, resources accumulated from payments for the right to use forest resources or resources from bilateral and multilateral official cooperation.

Income from the harvesting or use of forest resources is a combination of the following:

1. payments for licences, fees and taxes on areas or volumes of wood harvested and/or on the circulation of such harvested wood;
2. taxes (VAT, export duties, wage contributions etc.);
3. fees collected for the allocation of land, forests and contracts to harvest timber and plant and animal wildlife, fees for forest concessions, payments for felling permits, licences and stamp duty for the transporting, processing and marketing of wood etc.;

4. imposition of fines, confiscation and damages for infringements of the law
5. sale of plants and plant material from nurseries and other forest products;
6. issuing of tour operators' licences for national parks and other similar permits;
7. sale of hunting licences or licences to harvest and market plant and animal wildlife;
8. entrance fees paid by visitors to protected natural areas etc.

Fees paid for rights of use are to varying degrees ploughed back into forest management. In this case, the State converts payment for goods and services into a source of investment, returning such monies to the financing circuit. However, they do not always return directly to forests and in some countries become part of the unified State treasury that finances the national budget and are not allocated directly to forest management and conservation.

Apart from the public resources listed above, there are also – to varying degrees, depending on the country's level of development – resources from bilateral or multilateral cooperation, and possible soft loans from multilateral banks (as will be seen below).

The national studies indicate that the public resources invested are now basically used to fund:

1. the operation of public forest institutions and in some countries also for forest research and education, representing an important contribution to the creation of an enabling environment, as described in Chapter 7;
2. the promotion of planting and productive forest management through various kinds of incentive (subsidies, tax exemptions or subsidized loans), as described in Chapter 5;
3. management of the country's protected areas, either by public forest and biodiversity conservation bodies or by NGOs, to which the necessary resources are transferred as grants.

Box 8 gives examples from Bolivia, Guatemala and Ecuador of how the collection, investment and spending of revenue from forest activities operate.

Box 8: Examples of public sources for forest activities

Bolivia: system of forest licences

The Forest Law lays down the official fees to be paid for permits to carry out various forest activities. In Bolivia these are called *forest licences* and are the source of national resources connected with the forest sector. Since 1996, the Forest Law has laid down the fees to be paid to the State for two types of forest licence:

- *a logging licence*, with a fee calculated on the basis of the area under forest management;
- *a clearing licence*, with a fee calculated on the basis of the area to be cleared and the volume of timber to be extracted.

Due to *widespread defaulting in the payment of fees based on area*, the system was modified by bringing in a flat fee. In addition, payment mechanisms were set up for logging licences for smaller quantities and special licences for such NWFPs as Brazil nuts.

Revenue from licences is distributed among institutions as follows:

- prefectures: 35 percent of logging licence fees and 25 percent of clearing licence fees as forest royalties;
- municipalities: 25 percent of logging licence fees and 25 percent of clearing licence fees;
- the National Forest Development Fund: 10 percent of logging licence fees and 50 percent of clearing licence fees, together with cash receipts from fines and auction sales, plus anything in excess of the State-approved budget for forests;
- the Forest Supervisory Authority: 30 percent of logging licence fees.

The law allocates specific functions within the framework of the National Forest Code to each institution receiving such resources.

According to Forest Supervisory Authority statistics, in the period 1997–2005 the State collected a total of 395.8 million bolivianos (approximately US$50 million) from area licence fees (31 percent), volume licence fees (22 percent), clearing licence fees (21 percent), flat fees (3 percent), fines and auction sales (7 percent), application forms (7 percent) and miscellaneous sources (9 percent).

In general terms, the national study indicates that in Bolivia the forest revenue mechanism has been effective in financing the Forest Supervisory Authority's supervisory tasks, but that it has not been enough to contribute to efficient and effective protection and monitoring of natural forests. The relevance of the prefectures' sharing in these limited resources needs to be reviewed, since these authorities have not demonstrated that the resources thus available to them have been put to "forest use" (source: the Bolivia study).

Ecuador: system of forest receipts

In Ecuador there are various types of public revenue from indigenous forests, collected by the various divisions of the Ministry of the Environment:

- entrance fees for national parks and licence fees for tourist operations etc. (US$833 627 in 2003);
- harvesting rights for standing timber, consisting of the payment of US$3 per cubic metre of timber from natural forests;
- waybills for timber covered in the relative logging licence and issued through the forest authorities (US$1 per cubic metre); in 2001, US$1 149 077.21 was collected under this rubric (for roundwood, sawnwood etc.);
- registration fees for forest industries and timber businesses (sawmills, warehouses or other companies), with the payment of US$50 per registration;
- issuing of logging licences (allocations of indigenous forests).

US$1 469 108.95 was collected for permits and licences in 2003, but only US$1 359.67 in the form of fines for infringements of the Forest Law and US$3 202.42 for various types of registration (source: the Ecuador study).

Guatemala: sources of financing for biodiversity conservation

The Environmental Profile of Guatemala (2004) shows that financing for biodiversity conservation comes mainly from State sources and international cooperation. A detailed analysis of the structure of the environmental financing granted by these sources shows that at least 50.5 percent comes from government sources, 49 percent from external sources (approximately US$20 million) and less than 1 percent from private sources (source: the Guatemala study).

Multilateral bank loans and multilateral development funds

International public loans are in fact official loans granted by various international institutions such as the World Bank, the Central American Bank for Economic Integration (CABEI), the Andean Development Corporation (CAF), the Inter-American Development Bank (IDB) and the Multilateral Investment Fund (MIF). There are also credit contributions from international cooperation that are paid into the State treasury as loans and/or public investment for the national forest sector. Within the individual country, these resources may be distributed through State institutions, provincial government, local government, grass-roots organizations, farmers' associations etc., and are generally allocated for development and poverty reduction aims. In some cases, countries undertake to invest or earmark a percentage of their own resources from the national budget as counterpart funds for the sums received as loans.

Depending on the country's development level, multilateral banks will usually grant loans under favourable conditions (lower interest rates and few conditions). These loans are sometimes combined with grants from international aid agencies. Loans from the World Bank are usually combined with specific funding for projects and programmes financed by the Global Environment Facility (GEF).

Various countries, including Bolivia, Costa Rica, Guatemala and Nicaragua, have received international loans to boost their forest activities.

Private sources

Most of the investment resources allocated for managing natural forests and for forest plantations come from private sources, both formal and informal, for motives of profit. These sources presuppose the existence of a market in which the financing and/or investing body is prepared to run risks.

There are two main sources of private financing on which forest enterprises may draw: (1) the capital market, the resources of institutional investors or loans from the national or international banking system, sometimes with subsidies; and (2) the informal capital market (money-lenders, intermediaries), mostly favoured by small and medium-scale enterprises and small private owners, and also for transport and the manufacture of timber products.

Investors and medium-scale and large enterprises

There are various sources of financing for medium-scale and large enterprises: self-financing, venture capital and private banks. The studies indicate that private capital is still the main source of external financing for private enterprises for the planning, construction and upkeep of tracks, logging and extraction operations, transport, primary and secondary industrial processing, and the marketing of timber. They also indicate that private financing is not focused to any substantial extent on forest management as such.

Self-financing. In Chile, Argentina and Uruguay, after receiving State subsidies over the years to establish their plantations, large private enterprises can now mostly finance themselves through their own resources, or make use of credit facilities. They then have recourse to the international capital market when they need additional resources. In general, a sustained yield of raw material rather than sustainable use has been the main motive for investment.

Capital market, venture or risk capital and shares. Large enterprises, for example cellulose consortiums, usually turn to the capital market for financing, obtaining the financial resources they need through the flotation of bonds, shares or corporate bonds, or through the investment of venture capital. This is done through the stock market or trust funds and some other innovative forms of financing without recourse to resources of a strictly credit origin.

Venture capital very often entails the need to use equity to capitalize investments in forest activities with a high risk status in comparison with the activities of other sectors with similar amounts, time frames and returns. An example of the practical application of venture capital is its use as seed money to start up an enterprise or activity, or to expand promising innovative enterprises within the framework of companies and temporary strategic partnerships between investors and beneficiary enterprises. This type of financing allows the attraction of fresh resources to boost already constituted enterprises and share a risk that is sometimes hard to assess. At the same time, it means sharing ownership of the enterprise with new partners. Investing partners often provide loans and technical, financial and commercial assistance.

The main feature of these sources is that the financial resources obtained are generally intended to establish a new enterprise or to strengthen the productive and operational capacities of already functioning enterprises, in order to generate profits in a short, clearly defined period. This type of financial resource is traditionally used to finance the productive activities of forest enterprises in all the links of the value chain, but not to establish or manage the productive base of the forest resource. However, there are various exceptions. Reforestation or afforestation is in itself an operation that attracts

certain investors who in general terms accept the particular features of forest investment, such as the long time frame, the scarcity or absence of income during this period, the lack of forward markets for the products, and the dependence on investment in industries in order to process timber products. They supplement the cash flow from forest plantations with complementary projects, which may be silvipastoral or entail mixed cropping in the early stages of plantations.

Private banks. The studies show that private banks basically work as a source of financing to pay for goods and fund the value chain, and not for investment in forest management and planting. Like venture capital and other capital market resources, almost all bank loans go to the timber processing industry and short-term investments. Typical examples of private bank operations are investment in processing industries for such NWFPs as Brazil nuts and edible palm, which receive a small percentage of the total monies allocated to the forest sector.

Small-scale investors

Informal money-lenders. Informal money-lending is an important source, although little is known about how it really works or its extent. Most small forest enterprises, such as small sawmills or chain-saw operators, receive financing especially (or solely) for forest harvesting and processing. In many countries, forest activities are part of farmers' or communities' way of life. In such cases, investment capital usually comes from informal financing sources, although short-term investment capital may come from formal lending bodies. Money-lenders are middlemen, the family and remittances from abroad. In most cases, these monies are advance payments by middlemen in the timber or foodstuff trade, informal money-lenders, the family or the *patrón* (in the case of Brazil nuts). This latter system is known as the *habilito* and has also spread to the timber sector in Bolivia and Peru.

3.3 Sources of payment for forest goods and services

While the most common sources of financing to promote investment in forest activities – such as the management, conservation and harvesting of natural forests, the promotion of forest plantations and the processing of timber – were examined in the previous section, the main sources of the incentives, benefits and income that forest owners can obtain from the payment for goods and services will be presented in this section.

Payment for goods

According to the national studies, the main income generated by forest ecosystems still comes from the sale of timber. The products are placed on the market and are demanded and paid for by their consumers and by manufacturing companies with access to the market, where the price is decided. Consumers may range from small individual purchasers of timber to large industrial conglomerates. Timber is usually part of a production chain into which various sources of financing place their resources. The same happens with some NWFPs, for example Brazil nuts in Bolivia, Brazil and Peru (generating more than US$100 million a year).

Payment for services

The national studies report that systems of payment for forest services have been developed in recent years and that these are increasingly becoming an additional source for SFM. Payment for the services of forest ecosystems may be defined as a payment or compensation in exchange for maintaining and/or preserving an ecosystem so that it keeps on generating one or more services, generally of an environmental nature. In service payment schemes, the user who pays for the service is called the consumer or demander, and the owner or the person in charge of managing the ecosystem where the service or services in question are generated is called the producer or supplier. In this specific case, the consumer, demander or user becomes the "source".

Consumers cover a wide range – from individual local inhabitants for such services as soil and water conservation, to private enterprises at the national or international level that are interested in promoting such services as biodiversity conservation and carbon fixation. The latter is supplied mainly through the establishment of forest plantations. There are regional- and national-level consumers. The national studies indicate that this is a source of additional resources for the forest sector that should be exploited.

Apart from the users listed here, the sources of financing are the same as those described in the previous section, particularly international aid agencies, international NGOs and, increasingly, private enterprise, as for example is seen with the brewing industry and Coca Cola in Guatemala (source: the Guatemala study) and the Dutch Electricity Board in Ecuador. Most service payment schemes are still being financed by international aid agencies and international NGOs.

The functioning of forest service payment schemes is addressed in Chapter 6.

3.4 International grants

International grants are currently a major source of financing in most of the countries in the region. The main objectives prompting international aid agencies to grant such resources are usually poverty reduction and pursuit of the Millennium Development Goals. The resources are used for the most part to fund forest development programmes and projects, build up public or non-governmental forest institutions and other institutions involved in natural forest conservation (including agroforestry), conserve the biodiversity of protected areas and protect watersheds. They also play an important role in the implementation and establishment of payment systems for environmental goods and services. However, they are little used for the promotion of forest plantations.

Aid agencies have moved into value chains, participating not only in harvesting but also in processing and marketing. However, this support currently focuses on setting up community enterprises and industries among the most disadvantaged social strata, tending to ignore the traditional business sector.

Donor countries, institutions or organizations generally allocate these resources within the framework of their own official international cooperation programmes, which may be administered and executed by the donor itself, the State receiving the grant and/or national and international NGOs.

Although these resources have traditionally been granted in the form of projects or programmes, in recent years some donors have started to deliver them directly (and not in the form of specific projects) to ministries of finance or economy, for use in government programmes or specific projects.

Complementing this official international cooperation, there is also non-governmental international collaboration for specific purposes, such as improving the sustainability of the forest sector and environmental conservation, generally through projects and programmes implemented by national and international NGOs – which may in turn be funded by a wide range of sources, including philanthropy, individual contributions and support from international aid agencies. International NGOs may have their own national NGOs for implementation or their own offices in the various countries.

Most forest development and conservation programmes and projects financed through grants from international aid agencies last from one to seven years. Total programme or project costs range from US$30 000 to US$20 million. In Bolivia, for example, 95 percent of the conservation budget comes from international cooperation, especially in the form of grants, only 3 percent from the country's own income (from tourist entrance fees) and the remaining 2 percent from the State treasury. Another example is Nicaragua, where the absence of a clear national forest policy means that grants cover 85 percent of the public investment programme (US$134 million in ten years, including the cost of the National Forest Institute), so that activities financed and carried out by aid agencies and NGOs have constituted the lines of action of the country's forest policy (and financed 85 percent of protected areas), leading to a fairly undesirable situation in terms of sustainability.

In general, the mechanism for transferring such resources is based on international or bilateral conventions and agreements. The recipient institution often has to guarantee a matching allocation, in cash or kind (staff etc.), be linked to public and/or community organizations, and be willing to meet specific conditions laid down by the donor.

Grants are of various kinds: (1) those of a direct bilateral nature (*official, from country to country*) in the form of international cooperation; (2) those of a multilateral nature (*official arrangements between banks and countries*) in the form of multilateral international cooperation from United Nations agencies; (3) those granted by intergovernmental organizations (*official, between the organization and the country*); (4) those granted by international or national NGOs, and also those of a philanthropic nature made by individuals or multinational or national enterprises; and (5) those from international research organizations.

Although these grants take different forms, some are interconnected and interdependent. Bilateral cooperation seems to be the main source, inasmuch as it helps to finance multilateral cooperation and some national and international NGOs. The majority are presented in Box 9.

Box 9: Main sources of national and international grants for the forest sector and conservation, as identified in the national studies

Type of donor	Observations
1. Bilateral cooperation	The main sources in the region are Belgium, Denmark, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, Spain, the United Kingdom, the United States and the European Commission
2. Multilateral international cooperation implemented by United Nations agencies	Grant resources usually also come from international cooperation and are made operational by such organizations as the United Nations Development Programme (UNDP), the International Fund for Agricultural Development (IFAD), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Industrial Development Organization (UNIDO) and the Global Environment Facility (GEF)
3. Intergovernmental organizations	Generally financed by member governments and international aid agencies, they include the International Tropical Timber Organization (IITO); grants are made with resources coming from international cooperation in the form of forest development projects
4a. National NGOs	Resources usually come from a combination of sources: their own resources (contributions from members, their own profits etc.) and international aid agencies, international NGOs and philanthropic sources
4b. International NGOs	The main international NGOs active in the forestry and conservation field in Latin America are: World Wide Fund for Nature (WWF), Conservation International (CI), Wildlife Conservation Society (WCS), The Nature Conservancy (TNC), International Union for the Conservation of Nature (IUCN), MacArthur Foundation, W. Alton Jones Foundation, Humanist Institute for Development Cooperation (Hivos) and Oxfam
5. International research organizations	Centre for International Forestry Research (CIFOR), International Center for Research in Agroforestry (ICRAF), International Centre for Tropical Agriculture (CIAT), Tropical Agricultural Research and Training Centre (CATIE) through contributions from international aid agencies

There are two kinds of special grant that have been used in various countries for forest management and conservation: endowment funds and debt-for-nature swaps.

Endowment funds

Endowment funds in the forest sector are devices resulting from the concern to make grants sustainable. Usually part of a fund is set aside as capital or “endowment”, which is placed in low-risk investments (fixed-term deposits etc.) in order to produce a steady annual income. The interest earned on this capital fund is generally used for the running expenses of programmes and projects.

In Panama and Bolivia, endowment funds were set up involving the governments and international NGOs or technical aid agencies.

If these funds are to be sustainable, the seed capital must be placed in a bank, which produces income that is then used to cover investments or administrative expenses. Their main objective is to finance the management of protected areas. The advantage of endowment funds is that they

allow a stable long-term flow of financing to cover recurring running expenses and maintain basic programme activities.

According to the Bolivian study, the sources of financing to establish endowment funds include international grants and the revenue from bilateral debt-for-nature swaps with such countries as the United States, the Netherlands and Germany, in addition to funding from the World Bank, financed by the GEF, to support protected areas. Other sources are the State treasury and sectoral contributions. In Bolivia it is possible to set up an endowment fund with State sources through the National Forest Development Fund (FONABOSQUE), which has resources to start activities but is not yet in operation.

Endowment funds may be public, semi-public or private in terms of their administration and source of resources.

Public endowment funds are established through laws and have specific regulations to support stated activities. Examples of this type of fund in Bolivia are the National Fund for the Environment (FONAMA), now closed, and FONABOSQUE, which has this possibility of funding among its sources.

Semi-public endowment funds channel international financial resources, but are administered through a national structure of a private, legal nature, usually a foundation with juridical status and a board of directors with representatives either of the Government or of the private sector. Examples of this type in Bolivia are

the PUMA Foundation, which is the trustor of the resources of the Enterprise for the Americas Initiative (EIA), and the Foundation for the Development of the National System of Protected Areas (FUNDESNAP), which administers various endowment funds.

Private endowment funds are the result of business and conservationist initiatives and are administered by private organizations within the framework of national legislation. Examples of this type in Bolivia are (i) the resources managed by the National Environmental Fund (FAN) through the climate action project, whose trustees are The Nature Conservancy (TNC) and American Energy Producers (AEP), and (ii) the Foundation for Conservation of the Chiquitano Forest (FCBC), which uses funds from the Prisma Energy International (ex-Enron) and Shell B.V. petroleum companies.

The advantages of endowment funds spring from the fact that they allow a stable long-term flow of financing to cover recurring running expenses and maintain basic programme activities that are not usually covered by international cooperation. They can also attract other funds and reduce dependency on external grants and resources from the State treasury (the long-term availability of which is never guaranteed). These funds have low administrative costs and have proved adequate for long-term financing of the basic expenses of management and biodiversity protection in protected areas.

One of the reported drawbacks of this mechanism is that only a fraction of these financial resources – generally less than 10 percent of the capital fund – can be used sustainably, so that a large capital sum is needed if the usable fraction is to cover the basic running costs of institutions and projects.

Critical aspects for environmental endowment funds are their governance and a proper balance in their administration. The experience of the FONAMA and the FCBC in Bolivia and the National Fund for State-Protected Natural Areas (PROFONANPE) in Peru shows how important it is to avoid endowment funds' having a totally public or totally private administration, but rather to seek a balanced, semi-public, mixed administration in order to ensure their efficiency, the participation of the various sectors of civil society, and control by the latter.

Debt-for-nature swaps

Bolivia, Ecuador, Panama and Paraguay created funds on the basis of monies from debt swapping in order to finance protected areas through contributions to trust and endowment funds (see Box 10). The purchaser buys the debt at a price lower than its real value. The "price" of a country's debt generally depends on the debtor country's economic difficulties in repaying its creditors. The debtor thus pays the new owner of the debt an agreed sum of repayment and interest, which must then be invested in the same country. Debt-for-nature swaps are a mechanism that provides bilateral resources, following negotiations and approval by the respective governments (debtor and creditor).

The resources created by a debt swap are a way of providing compensation for environmental services (correction of the negative externalities generated by the payment of debt servicing on the environment) and in particular has beneficial effects on biodiversity protection, especially with regard to protected areas.

Box 10: Examples of debt swapping in Bolivia, Ecuador, Panama and Paraguay

The first experiment with the debt-for-nature swap device took place in *Bolivia* with the intervention of the NGO Conservation International, which purchased US$650 000 of the commercial debt of the City Bank of New York in exchange for a trust fund for the equivalent of US$250 000 in local currency to finance the operating costs of the Beni Biosphere Biological Station-Reserve.

Later, in 1991, the cancellation of a bilateral debt of US$379.1 million to the United States generated a trust fund of US$20 million in the framework of the Initiative for the Americas. The fund was initially administered by the FONAMA to finance forest resource management and conservation projects, but is now being administered by the PUMA Foundation (the Bolivia study).

In *Ecuador* the system has so far been applied to conservation of the National System of Protected Areas (SNAP). The main debt swaps carried out are those with the country's Fundación Natura (1987 and 1989), the WWF and The Nature Conservancy. The Central Bank of Ecuador had to repay the amount of the swap to the Fundación Natura within nine years, placing an annual percentage in a capital fund that will be maintained in perpetuity. The Fundación Natura worked with the environmental authorities and national NGOs in carrying out various conservation programmes. This debt swap programme generated more than US$10 million in local currency for conservation activities. Conversion with debt swaps as a financial source has been used in Ecuador especially to build up trust funds, generally in the form of national environmental funds. The sustainability of the National Environmental Fund (FAN) is directly dependent on the continuation of such swaps, especially with Germany (the Ecuador study).

In *Panama* two funds were created with debt-for-nature swaps with the United States (the Chagres Fund) and Panama (the Darién Fund) in 2003 and 2004 respectively.

The Chagres Fund, with resources of US$10 million, has the purpose of protecting the Chagres Natural Park, based on an agreement whereby the Panamanian Government sets aside an average of US$714 000 a year for 14 years in an account administered by the General Bank, until the target figure is reached in 2016. One half of the yearly deposit made by the Government goes to a trust fund, and the other half, administered by the country's Fundación Natura (US$357 000), is used to finance protection of the park, which forms part of the catchment basin of the Panama Canal.

The Darién Fund allocates US$179 268 for protection activities administered by the Fundación Natura. The National Environmental Authority (ANAM) and some international organizations have provided other resources, but these have been sufficient only to carry out a study of the environmental management plan and conservation projects with communities within the protected areas (the Panama study).

The National Congress of *Paraguay* recently promulgated a law approving an external debt-for-nature swap agreement with the United States, with the intention of obtaining the resources needed to boost sustainable management of the remaining Alto Paraná Atlantic Forest in the country's eastern region and the forest ecosystems of the San Rafael Reserve. It is also in the process of agreeing an external debt-for-nature swap programme with Germany (the Paraguay study).

3.5 Lessons learned

In most of the countries, the State lacks a clear policy on allocating public resources to forest investments, and when there is such a policy, it tends to be weak and unreliable. Public resources are almost always at the barest minimum needed to maintain State institutions and do not provide for forest development, conservation and management.

The proportion of resources collected from forests that are then ploughed back into forests also varies from country to country. However, the studies indicate that in general there is little reinvestment of these resources in forests because of the many other needs.

In most of the countries, the main focus of land-use planning is agriculture, not forestry, and even when forest land or land with forest cover is settled, its holding is justified by the agricultural activities carried out on it and not by forest management, a situation with negative consequences in terms of the prioritization of State budget allocations.

Even from the limited data available, it is clear that financial resources for investment in productive forest activities come mainly from private sources without direct State intervention (although sometimes with support from multilateral banks), and also that such investment is focused especially on the final stages in the chain such as harvesting, processing and marketing, and to a lesser degree on planting and forest management.

Access to venture capital is mainly geared to enterprises with a high performance and projects with high profitability (and an export focus). Venture and private bank capital intervenes when the forest product has acquired commodity status and can be easily and securely marketed.

Traditional banks prefer to provide working capital for enterprises that are already up and running, and not for new ones. Basically, venture and bank capital is invested in established enterprises and products (timber) and not in innovation and risk.

In the analysis of national financing systems, no reference is made to an important private source of financing, namely *informal loans*. Experience shows that most forest owners and small and medium-sized sawmills use this source. Although it is estimated that it is perhaps the commonest source in the rural world, it is invisible and little studied.

The main beneficiaries of public and private investment sources are usually medium-scale and large forest producers, since they tend to know their way around the bureaucracy or have enough resources of their own to obtain large or small loans. Small users do not have the right profiles for lenders, nor the necessary buffer resources, greatly hampering access to formal financing mechanisms, so that they tend to move on the borderline of illegal and informal operations.

The main objective of current private sources is reasonably risk-free profit, survival and the supply of raw materials, and not sustainable forest management because of the costs involved. For private sources, both formal and informal, the criteria of forest resource sustainability do not yet appear to play any role in investment decisions. Very little is reinvested in sustainable management, and prices do not include the costs of restocking and rehabilitation.

Although forest activities are generally considered risky, those currently being financed, such as planting (often subsidized), the harvesting of natural forests, the processing of timber harvested or purchased from small producers (sometimes under informal or illegal conditions), do not appear to entail such a high risk.

A growing source of financing, and one that is helping to promote conservation, especially of natural forests, and rehabilitation of degraded areas, is the payment by beneficiaries or users for the environmental and forest services that these forests or areas generate. The range of consumers is wide – from individuals or groups of individuals at the local or national level, or users of the services provided by soil and water conservation, through to private international businesses interested in promoting such services as water supplies, biodiversity conservation and carbon fixation. Most projects concerned with payment for services are being implemented as pilot schemes and show considerable creativity. They are still in many cases receiving some form or amount of support from international aid agencies, whether governmental or non-governmental. Although there is still little quantitative data to give a clear idea of exactly how much income they can generate, there is no doubt that payment for services is seen as a potential source of additional income for forest management, and one that should be explored further.

Debt swapping and endowment or trust funds reached their peak in the 1990s and have failed to expand since then due to legal problems and inefficiency in transactions.

The new instruments or mechanisms developed to channel international cooperation funding or payments for services are not always handling additional or new resources. They often represent a new link in the chain of sources, which starts with traditional resources, i.e. existing donors with resources that have not increased and are unlikely to do so.

In the past, development projects financed through international grants have had the objectives of institution-building, updating of forest legislation and regulations, promotion of forest management and certification, prevention of illegality, consolidation and management of protected areas, and working with communities (on agroforestry and forest management). Programmes and projects financed through grants can have the advantage of flexibility, reaching a range of stakeholders and distant places. Reduced outfall from political changes and a stability in implementation with regard to agreed objectives and activities boost the capacity for technical assistance and the transfer of technology. International governmental and non-governmental aid agencies currently prefer to finance protected areas, certification and the prevention of illegal activity (governance), projects concerning payment for services and community forest activities.

However, the studies also indicate that the main disadvantages in the use of grant resources are that they lead to dependency and are not a reliable long-term source, since they obviously depend on the donor's aid policy, which tends to vary. Moreover, they fill gaps left by implementation of the national policy, indicating a failure on the part of beneficiary countries to shoulder their full responsibility to implement clear forest policies, comply with agreements or commitments regarding counterpart funds, or use the resources they have received in an efficient manner. The lack of leadership, continuity and a clear direction in national policies has frustrated many good intentions or aims, both of international aid agencies and of national institutions and organizations, which are the potential recipients of this type of resource.

It should be mentioned that the national studies reported difficulty in obtaining quantitative information on sources of financing for forest management (although this element was not in fact their main focus). New studies being undertaken will have to address it in greater detail in order to obtain a more precise picture, so that the relative importance of the various sources of forest-sector financing in the region can be analysed more objectively.

The picture is extremely variegated. However, it was almost impossible to find any significant source of financing with the specific objective of rehabilitating degraded forest areas, degraded forests or secondary forests and/or the implementation of agroforestry schemes.

3.6 Conclusions

At present, private sources provide the largest volume of financial resources, with the greatest potential of increasing for forest management. They provide the largest volume for planting, the harvesting of natural forests and the manufacturing industry in the hands of large enterprises, supplemented in some countries by subsidies and public incentives for planting.

The capital market is an important potential source, complementing already existing traditional investment. Access can be gained with creative new instruments, taking all forest functions into account, so as to attract additional resources.

Informal loans play an important role for small and medium-scale enterprises in the harvesting and processing of timber from natural forests, but are an unknown factor that has been little examined to date.

Sustainability varies from country to country, but plays no major role with regard to private investment, whether formal or informal. A limited but growing number of financial institutions are applying criteria of socially and ecologically responsible investment. Unlike the certification of goods (timber), there is no internationally recognized system for certification of investment in SFM.

The volumes of public resources and international aid are shrinking or at least tending not to increase. This trend brings with it a risk that less attention will be paid to forest support, the areas of communities and small farmers, conservation areas, certification processes and institution-building.

Payment for services has the potential to grow and create additional new resources. The most important source of payments for services is still international cooperation, both governmental and non-governmental, but the stakeholders directly involved in the forest sector are increasingly operating through an emerging services market and negotiated or obligatory institutional arrangements.

None of the sources is on its own sufficient to cover the costs of sustainably managing natural forests. The financing of forest management must take into consideration all the various functions of forests, with the broad range of goods and services provided, viewing all the sources of financing as a whole and adopting a bundling approach. This is also increasingly a socially desirable situation, inasmuch as financing a single forest function tends to overemphasize that function, to the detriment of the others.

4 Operators and means of distribution

4.1 Introduction

In financial terms, *distribution operator* refers to the institution or person who acts as a bridge between those with the resources (the sources) and the recipients of these (forest owners or managers), using special mechanisms to effect this transfer. Operators normally form part of a distribution network or system, which is seen as a *distribution circuit*. For example, a bank is an operator and the banking network is a circuit. The operators and circuits can create *special means or channels* for this purpose, such as *funds*.

In the diagram given in Box 7, two main types of operator and means are distinguished, one for the financing of investments and the other for payments.[10]

The operator or means may be created by the State itself, which includes its national, provincial and municipal institutions, the first- and second-tier State bank etc. There are also private operators, such as private banks, private cooperatives, individuals and NGOs, the latter often with the support of international aid agencies and/or private enterprise. Lastly, there are semi-public operators, such as certain foundations and cooperatives.

The following sections, based on the national studies, review and analyse the most relevant information encountered regarding public and private operators of investment financing and payment for goods and services, and also the means of distribution (funds).

[10] The distinction is in fact often not hard and fast, for there are mixed forms (mixed sources and mixed targets – investment or payment), and the two types can be combined or incorporated into one operator or distribution circuit.

4.2 Investment operators

Public operators
The studies show that in some countries the State itself, supported sometimes by other sources, makes payment directly to forest producers and owners through its forest institutions, which function as operators in dealings with third parties, as is the case with the National Forest Institute (INAB) in Guatemala (see Box 11).

Nevertheless, in most cases of financing from public resources, either the distribution operator for official loans and subsidies is an official bank, operating directly, or the financing takes place through a fund created specifically for the distribution of such resources, for example the National Bank of Economic and Social Development and the Amazonia Development Bank in Brazil (see section 4.4).

Box 11: Guatemala's National Forest Institute

With the passing of Guatemala's most recent Forest Law (Government Decree 101-96), the National Forest Institute (INAB) was created, together with a mechanism, the Forest Incentives Programme (PINFOR), to promote the reforestation and management of natural forests for production and protection purposes (see Box 15). The INAB is responsible for the technical and legal aspects of each project. In order to activate payment to the beneficiary, it issues a certificate declaring that the project complies with the requirements laid down in the relative legislation. After this, all projects are evaluated on the ground, and a certificate is issued for those that are approved. The INAB then submits a list of all approved projects to the Ministry of Public Finance, which issues a cheque payable to the juridical person formally named in the approved project. Thus, although the funds appear in the INAB budget, it never actually receives them, since the Ministry of Public Finance makes the payment directly to the beneficiary (source: the Guatemala study).

Private operators
Private operators can be divided into those operating totally privately and for profit, NGOs and technical aid agencies.

According to the national studies, there are very few examples in the forest sector of national private banks acting as distribution operators for investment financing. Banks have other priorities and consider forest activities as too long-term and high-risk propositions compared with the general agricultural portfolio (of which forest activities are a part).

The participation of international banks in financing large private enterprises, especially those involved in processing, is more widespread, but the present study has little detailed information in this regard.

NGOs are non-profit institutions usually with social or environmental development objectives, and although they do not have strictly financial aims, they do sometimes pursue such aims when this is necessary in order to carry out their conservation or development programmes.

In some countries, such as Brazil and Guatemala, banking laws prohibit NGOs from operating as financial institutions, reserving this function to the national banking system. Other countries in the region seem to have no such obstacles and have developed payment for service schemes and financing systems.

International aid agencies and NGOs sometimes use State operators, although in some countries, for example Nicaragua, they have also set up their own private distribution operators, usually within the framework of projects and programmes financed by themselves.

4.3 Service payment operators

This section deals with operators of payment for services, but not those of payment for goods. The latter depend on the market, represent a direct relationship between buyer and seller.

Public operators
According to the information contained in the national studies, payment for environmental and forest services received or obtained through public operators may be divided as follows:

1. direct payment negotiated between the consumer and the producer, a payment or voluntary contribution from the consumer who has received or used a service, or a direct or indirect payment to the service provider, for example the voluntary carbon market or payments made by hydroelectric companies in Costa Rica (through the National Forest Financing Fund [FONAFIFO]);[11]
2. fees, duties, taxes and stamp duties governed by law, collected by national or local public bodies, or semi-public bodies that provide public services etc., collecting payment from consumers of their services;
3. payment for services received through intermediaries: the carbon market is a good example of this, in which there are usually several intermediaries, for example in the purchase of certified emission rights (CERs) (see Chapter 6.3.1).

Payment for services can be made operative through direct distribution operators, but in some cases the latter have to make use of special funds set up for this purpose, and there are examples of local governments and public service enterprises that make direct payment for the services of ecosystems (without the existence of a fund).

Private operators
NGOs and private enterprises are increasingly active as distribution operators for payment for environmental services. Existing NGOs have set up or promoted service payment systems, creating their basis with funds from public or private cooperation, or a combination of the two. However, some NGOs that manage funds (as distribution channels) have been set up especially for this purpose, for example FONAFIFO in Costa

[11] See the Costa Rica study and www.fonafifo.com for more information on how this works.

Rica, PROFONANPE in Peru and the Participatory Environmental Management Corporation (ECOFONDO) in Colombia. These NGOs normally have steering committees drawn from the various organizations, funding sources and the State itself.

Resources for investment in ecosystems (voluntary payments for carbon fixation and water conservation services) are increasingly coming from private enterprise. In the case of carbon projects, for which private enterprises have been created to channel carbon market resources to forests, there is potential for a significant increase. Illustrating this point, Box 12 gives examples from two countries.

Box 12: Examples of service payment operators in Bolivia and Ecuador

An NGO was set up in *Bolivia* to channel funds earmarked for environmental conservation: the Foundation for Development of the National System of Protected Areas (FUNDESNAP). This private non-profit organization was established in 2000 with the objective of contributing to the consolidation, development and sustainability of protected areas in Bolivia by raising and administering financial resources to execute various programmes, projects and activities to boost management of these areas.

The FUNDESNAP started operations in 2001 with the search for sources of financing and the design of mechanisms to administer and channel resources for the National System of Protected Areas (SNAP). It has received grants totalling US$21.7 million from international aid agencies for trust funds intended to boost the SNAP and the National Service for Protected Areas (SERNAP), through investment and technical assistance projects.

The FUNDESNAP is also consolidating institutional partnerships to create synergy and raise financial and non-financial resources to boost the SNAP. Agreements to this end have been made with such institutions as the Networks and Development Foundation (FUNREDES), the Green Cross, the PUMA Foundation, the Wildlife Conservation Society (WCS), the SERNAP, ENTEL and FTD. Partnerships with local government authorities (prefectures, subprefectures and local administrations) and the implementation of sustainable development programmes with the participation of communities living within or close to protected areas are particularly important in boosting the SNAP.

The FUNDESNAP covers its operating costs with 5 to 10 percent of the sums allocated to protected areas each year, a percentage that also covers the costs of monitoring and evaluating the resources allocated. An important strategy for the FUNDESNAP and the SNAP is that of consolidating their bases in order to achieve a financial self-sufficiency that depends less on international cooperation, generating alternative sustainable income of their own by offering environmental services that promote ecotourism and productive forest management in protected areas (source: the Bolivia study).

In *Ecuador*, both the Forest Absorbing Carbondioxide Emissions Forestation Programme (PROFAFOR), with funding from an international private enterprise (the Dutch Electricity Board), and the Forest Conservation Foundation make direct cash payments to landowners and directly assume the transaction costs, on the basis of contracts containing penalty clauses and reinvestment criteria for forest plantations that are not re-established after harvesting, for example in the case of the Prima Klima Foundation. In some cases, there are also direct payments that are individually negotiated for each agreement, and in these cases financing comes from the voluntary carbon market (source: the Ecuador study).

4.4 Means of distribution: funds

The studies show that in nearly all cases the means of distribution are through a fund. These funds may be managed by government or private institutions, existing NGOs or others created especially for this purpose.

The funds can be distinguished (a) on the basis of origin and type of resource (international cooperation, public resources, loans, payments by consumers for services; made up of non-refundable resources, revolving funds, seed money, management of public resources, aid or delegated private resources) or (b) on the basis of their objectives (forest investment, management for conservation, payment for environmental services etc.). They may be individual (with a single source and/or a single objective) or mixed and multifunctional (with various sources and/or objectives).

Funds are described below according to their main functions, distinguishing:

1. national forest funds
2. conservation funds
3. service payment funds
4. environmental funds
5. local government funds.

National forest funds

These usually have a single function – forest development – through individual or mixed sources. Some examples are given below.

Nicaragua. The National Forest Development Fund (FONADEFO), established by Law 462 and already equipped with its own rules and regulations, is the main financial means, with a minimal administrative structure to ensure its operation. However, in 2006, two years after the law came into force, resources were transferred to it from the Ministry of Finance and Public Credit, although it had still not received the resources corresponding to the years 2004 and 2005. According to the National Forest Institute (INAFOR), they have been negotiating a contribution of US$7 million from the IDB.

Panama. The Forest Protection and Development Fund (FONDEFOR), established by the Forest Law, has so far not been made operational by the institution responsible, the National Environmental Authority (ANAM). Its resources should come from a variety of sources, both public and private.

Bolivia. The National Forest Development Fund (FONABOSQUE) is the forest-sector financial body responsible for collecting and administering financial resources for forest projects, research and other undertakings. The FONABOSQUE was created by Forest Law 1700, promulgated in 1996, as a public body under the Ministry of Sustainable Development and the Environment, with the task of promoting investment financing and the sustainable use and conservation of forests and forest land. Unlike other examples, the FONABOSQUE may receive "mixed" funds (from both public and private sources), which keep it replenished.[12] Unfortunately, a lack of political will means that there has so far been a delay in providing the fund with solid institutions and making it operational.

The Social Entrepreneurship Fund (FES) of the Bolivia Enterprise Foundation is a special fund for small and medium-scale enterprises. It acts as a financing programme using risk capital with resources from the Foundation for the Promotion and Development of Microenterprises (PRODEM) and loans from the IDB. Small and medium-scale enterprises should be closely integrated with rural suppliers located in economically depressed areas. Eligible enterprises can receive up to US$400 000 in share capital, but must comply with a series of conditions, such as having a legal structure recognized by national legislation and a legal status allowing them to receive financing and to contract debts and financial obligations. They also need accounting experience and competence, together with sufficient information to establish their sources of income and costs during the past three years etc. The fund does not lay down conditions for SFM.

Conservation funds *with mixed sources and the single goal of conservation*

Guatemala's National Conservation Fund (FONACON) receives taxes derived from forest activities, mainly concerned with wood and non-wood items. It falls under the responsibility of the National Council for Protected Areas (CONAP), and its creation was a result of the Government's priority to provide financial support to institutions

[12] The fact that the FONABOSQUE has a source of regular funding means that it is both a revolving and a trust fund.

dedicated to the protection, conservation and rehabilitation of natural resources, including forests, connected with the Guatemalan system of protected areas.

Proposals are invited each year and then undergo a systematic selection process. With the support of a project technical committee and taking into account the fund's financial capacities, a decision is taken as to the proposals to be supported in each cycle of projects.

The FONACON depends on the availability of financial resources and yearly negotiations between the CONAP/FONACON and the Ministry of Public Finance. Since its continued existence is therefore uncertain, there are plans to develop its institutional base in order to give it greater stability and obtain a more reliable budget allocation.

A budget line was opened for "capital funds of protected areas" to enable the CONAP to deposit monies from entrance fees to parks.

In Peru, the National Trust Fund for Protected Areas (FONANPE), established for conservation purposes, has a wide range of national and international sources.

Service payment funds *with individual and mixed sources and mixed goals*
In Guatemala, there are various means of (re)distributing financing coming from both payments and grants. In the case of the Water Fund of the NGO Defenders of Wildlife, it administers the funds it collects and uses them for conservation activities in previously identified catchment areas. The potential of the Water Fund depends on its users – industrial companies, hydroelectric companies, municipalities, irrigation system managers, catchment basin committees, and local private and fishing communities.

In the northern part of the Las Minas mountains, objectives focus on water, health and disaster prevention, and in the southern part on water scarcity. Consideration is being given to the creation of a Water Fund Foundation to administer these resources with the participation of representatives of the various beneficiary groups.

In other countries, special operators and means of distribution have also been created for payments for services, but there are not many examples of funds that have groups of service consumers as their sole source of financing. The most well-known is the National Forest Financing Fund (FONAFIFO) in Costa Rica, which receives resources from various sources and consumers, and distributes service payments to their producers, working within a national-level legal framework. Even in this case, the relationship between producer and consumer tends to be indirect, since the largest portion of the resources managed by the FONAFIFO comes from a World Bank loan and the rest from payments made by consumers (petrol tax, water and hydroelectric rates etc.).

In Ecuador the National Water Fund (FONAGUA) was established for the sole purpose of financing the conservation of water sources.

Environmental funds *with mixed sources and mixed goals and functions*
Various countries have set up environmental funds, generally with international donors (including the GEF) as their main sources, and sometimes with debt swaps and international trust funds as secondary sources.

In Ecuador the Environmental Fund is a capital fund for investment in the management of protected areas, complementing the State's administration of these areas. Between 1999 and 2000, initial negotiations took place for capitalization of the fund: US$3.3 million from a debt-for-nature swap with the German Government and US$4.1 million from the GEF. The Environmental Fund has acted as facilitator for counterpart funds in order to increase the available resources and facilitate additional investment.

Within the Environmental Fund, the Protected Areas Fund is the first initiative sponsored by the institution to support six priority protected areas. Given the current interest rates (5 percent per year), the Protected Areas Fund generates about US$600 000 per year for investment in these areas. However, although these sums are considerable, they are not enough to meet the financial needs of the SNAP, so that a significant number of protected areas still receive no support from the fund.

On 24 February 1997, the Guatemalan Environmental Fund (FOGUAMA) was set up under the National Environmental Commission (CONAMA) by Government Order 195-97. The FOGUAMA started activities by setting up a trust fund in one of the branches of the national banking system. Its main functions include the implementation of financing mechanisms and the control of resources assigned to the institutions proposing eligible projects. Resources are currently being used to set up a financing mechanism for environmental rehabilitation and conservation, sustainable management of Guatemala's natural resources and the establishment of environmental economic tools that will apply criteria for the integration of protected natural areas, the use of tariffs and compensation payments aimed specifically at the conservation of catchment basins and special natural ecosystems.

The National Environmental Fund (FONAMA) of Bolivia was set up in 1991 to coordinate international cooperation projects focusing on conservation, sustainable development and the environment. In its first years, FONAMA channelled resources derived from the cancellation of bilateral debt to such countries as the United States (the Environmental Initiative for the Americas Account[13]), the Netherlands and Germany, in addition to funds from a World Bank programme financed by the GEF to support protected areas.

The FONAMA was originally a fund directly dependent on the Presidency of the Republic, but was later transferred to the Ministry of Sustainable Development and the Environment, and subsequently to the Ministry of Sustainable Development and Planning. Between 1992 and 1997, the FONAMA financed 123 grants for a total of US$6.8 million covering a wide range of environmental issues and activities, including biodiversity, education, training, agroforestry, soil conservation and environmental quality.

However, the lack of efficient administrative policies, political interference and bureaucracy affected the performance of the FONAMA and led to high operating costs and a deterioration in the quality of technical and administrative support for projects.[14]

Local government funds

In the case of local government funds, the local or municipal council usually distributes financing in accordance with applications from neighbourhood committees or with cooperation agreements they may have with NGOs or other institutions. For example, in Huehuetenango, Guatemala, in the case of voluntary payment for the conservation of water supplies, the Chiantla and Huehuetenango municipalities carry out catchment area conservation activities through their local offices and local committees. A similar situation is seen with payment for environmental services in the Tecpán and Chimaltenango municipality.

[13] Cancellation of the debt to the United States gave rise to the Environmental Initiative for the Americas (EIA) Account, which received US$20 million.

[14] Source: PUMA Foundation, www.fundaciónpuma.org

4.5 Lessons learned

The most well-known and visible operators and funds for forest management are those that distribute public resources and resources from international cooperation, both governmental and non-governmental. Although the capital market and private national and international commercial resources are the main sources of financing for the commercial forest sector, they do not seem to be attractive to many of those involved in the sector. One explanation is that at present the capital market is basically focused on large-scale processing, working directly with these enterprises through banks, trust funds and stock market mechanisms. Another may be that operators in the private and informal sector are mainly individuals (forward buyers, middlemen, sawmill owners, carriers etc.), without much attention or intervention from public institutions. We therefore have little information on how private operators function, so that in the following sections we can assess only how the smaller portion of these resources function, namely those from the State and aid agencies.

Public operators
Public operators, such as official banks in general, have not functioned adequately for forest financing. They work only where there is a major long-term State commitment to the forest sector and where there is appropriate legislation.

Official banks treat the allocation of resources for forest-sector credit as a secondary and basically unattractive proposition, considering it too risky within the agricultural portfolio that they usually manage. Moreover, the guarantees required, the time frames and the bureaucracy involved restrict the allocation of resources.

Private operators
National private banks do not have much interest in financing forest management, lack the right conditions and also have the same problems as public banks.

Given the scant interest of the public and private banking systems in the forest portfolio, and therefore in small and medium-scale forest owners, the role of NGOs, foundations and programmes, acting as operators, has often been fundamental. These organizations have the advantage of being close to their beneficiaries, generally the poor and resource-poor families. However, they have the disadvantage, especially local and national NGOs, of depending almost completely on grants, with consequent uncertain long-term financial sustainability. Moreover, in too many cases they lack a transparent management system and have a poor capacity for monitoring and recovering loans, leading to an environment where delinquency goes unpunished. The same thing tends to happen with operators and means (funds) set up by some projects financed by bilateral cooperation, which sometimes operate almost as foundations. In some countries, for example Brazil, private operators created by NGOs run the risk of being considered illegal in terms of financial legislation.

Funds
Although almost all existing official forest funds were established by law, many of them have an uncertain future, since they depend on annual budgetary allocations or current policies, and most of them are weak because of political indecisiveness, poor administration, frequent changes in directors and a lack of resources.
The forest investment funds set up by NGOs and international aid agencies (for loans and subsidies) operate on a small, short-term, local scale (in the form of revolving funds, seed funds or non-refundable resources).

Current service payment funds established by NGOs and/or governmental or municipal bodies within the framework of negotiated agreements and often sustained by a single source, are modest, but they work well with individual, clearly defined objectives.

Funds with mixed sources and mixed objectives are larger and work better. A special foundation has almost always been set up to operate these funds, with authority and management shared by the government and the community. The disadvantage is that all the contributors follow their own separate rules, resulting in inefficiency in the very distribution means they have created. Management of the funds often runs into complications when it comes to addressing the various objectives requiring different sources of resources.

It should be noted that funds generally have weaknesses in the formulation and running of projects, the limited participation of beneficiaries, insufficient attention to sustainability, technical problems, and the lack of efficient monitoring and evaluation systems.
The main lesson is that the success of funds depends on control and supervision with regard to governance of the fund, transparency and the participation of the stakeholders (see also Conservation Finance Alliance, 2008).

Responsible operators
The national and international community increasingly requires the financial sector and other economic sectors to demonstrate their responsible approach to business and their "licence to operate", incorporating the criteria of sustainability and sound business into their daily practice. The Equator Principles,[15] adopted as a code of conduct by a considerable number of national and international financial institutions in order to make their investments sustainable, can be taken as an example and inspiration for responsible financing of the forest sector. Similarly, the forest sector can benefit by paying more attention to the promotion of forest certification and other instruments attesting to sound, efficient management, which can increase its positive profile and thus attract additional financing. These good management instruments may become requirements of the financial sector when making its investments.

4.6 Conclusions

Although there is considerable variation among the countries, almost all of them have a range of operators and means of distribution either in use or with potential for forest financing. Their working and use vary considerably in the different contexts, and more specific systematic study is needed for their analysis, going well beyond the scope and objectives of the present work. Even so, the following conclusions can be drawn, which are less firm statements than hypotheses based on existing information.

As with the conclusions of other chapters in this work, with regard to sources and instruments, knowledge of the main financial factor in the forest sector – financing with private and commercial resources – is inadequate. For a comprehensive evaluation, more needs to be known about the working of private operators and means, both formal and informal.

The type of operator or means that is best in each situation – whether it is better, for example, to use the national banking network (public or private) or special funds – depends on such factors as the specific goal, geographical coverage and target groups, and also the national and local contexts. It also depends on the origin of the resources and the conditions required by the organization supplying them.

National public and private operators (who are not directly connected with funds) often do not function effectively or lack sustainability.

The funds that function most effectively are those that take into account the multifunctional nature of forests and the conditions of SFM, and it therefore seems illogical to have single sources and goals; rather, funds should pursue a variety of objectives (encompassing all the various functions) and have recourse to various sources of financing. In developing these funds, objectives of source bundling should be applied. Operators in general work better when they establish a fund as the means of distribution, with mixed sources and mixed objectives.

The environment, as described in Chapter 7, is a key factor in the creation of trust and flexibility in operators, means and funds. The design of these operators, means and funds must lay stress on the major influence of the enabling environment, with regard for example to factors affecting the transparency and credibility of funds, so that these can be boosted.

Regardless of whether resources are public, private or from a combination of sources, experience shows that all operators and means will demand conditions that ensure transparency and the professional administration of resources; for this purpose they sometimes recommend recourse to an organization (a foundation) or a trust company. The variety of stakeholders and their participation in management improve efficiency.

A more detailed review of how funds work is needed. Even more important would be an evaluation study of distribution operators, analysing such aspects as:
- the authorities heading and driving the process;
- valid and representative dialogue partners who have the capacity to bring others in;
- the organizational and financial structure that administers the funds;

[15] See www.equator-principles.com

- awareness-raising or interest of the population that pays for or benefits from the management of natural resources and the services they provide;
- the existing level of governance in the sector;
- the features of those using the funds and their relationship with the funds;
- the effectiveness of processes to monitor and adjust financing procedures.

This analysis could be particularly helpful in increasing the support these funds give to small owners, who have the least possibility of access to financing mechanisms.

In view of the growing demands of the (international) community, both the financial and forest sectors could benefit from adopting and demonstrating the application of criteria of sustainability and responsible management in their daily practice through codes of conduct, certification and similar instruments.

5 Investment financing instruments

5.1 Introduction

An *investment financing instrument*[16] is to be understood as the form or method by which resources from a specific financial source reach their intended recipient, so that the latter fulfils the objective for which the instrument was established – for example, in the forest sector, forest management or planting.
The following main categories of instrument can be distinguished:

Credit or loan instruments, also known as traditional investment instruments. The public or private banking system offers these to forest producers and entrepreneurs. It is important to distinguish between (a) direct investments aimed mainly at productive activities, the results of which must enable repayment of the debt incurred by the recipient of the loan, and (b) predominantly governmental investments, in which there is not necessarily any direct relationship between productive activity and repayment of the debt incurred, which often takes the form of some kind of subsidy.

Subsidy[17] and incentive instruments. Their main source is usually the State and their use depends on the particular country's incentivization policy.[18] They include tax exemptions. Subsidy and incentive instruments may support any link in the forest chain, including planting costs, technical assistance, afforestation or reforestation, harvesting, primary and secondary processing, national marketing and the export of forest end products and by-products. Subsidies are common economic instruments of forest policy, intended to correct or encourage conduct appropriate to sustainable forest development. They include support services that are not directly financial, such as the free supply of inputs, training and technical assistance, the supply of genetic material, and pest, disease and risk control.

Capital market instruments, also known as non-traditional instruments, are an alternative to the mechanisms described above, and especially to traditional credit. Examples include the stock market, securitization or insurance of forest operations, and forward contracts.
The investment financing instruments mentioned can work in combination and can also encompass a variety of sources (managed by operators) with the purpose of transferring resources to various sectors or activities. However, each of these instruments works in its own way, with specific objectives and under specific conditions.
The following sections examine the best-known investment financing instruments used by the countries of the region in the forest sector.

5.2 Credit

Background
Forest credit is a financial resource given as a loan by a public or private bank for the pursuit of forest activities. These resources are available to customers of the banking system, forest producers and enterprises, at a specified interest rate, in order to provide resources for their investment and operating costs (establishment and maintenance of forest plantations, management of natural forests, payment of recurring costs) and for the processing and marketing of the products, by-products and services they generate. Loans are granted by State bodies (*public loans*), private banks and other bodies (*private loans*) and individuals or informal institutions (*informal loans* or *loans with no intermediary*). The interest rates agreed, and also the capital sum of the bank loan, may be subject to some type of subsidy, incentive, tax exemption or exemption from administrative and guarantee costs; they may be long-term to finance fixed costs, or short-term to finance working capital or bridging loans. In some countries, these loans provide a bridge between the time when costs have to be met and the time when incentives are received, once the approval procedure of the official body offering, allocating or granting the

[16] In this work, the terms "financing instrument" and "economic instrument" are used in a broad sense and basically as synonyms.
[17] There is some debate over the use of the term "subsidy", inasmuch as, on the basis of international trade agreements among the countries of the World Trade Organization (WTO), some subsidies are queried because of their supposed distorting effect within the free trade system. In some circles people therefore prefer to talk about "incentives" rather than "subsidies". In this work, "subsidy" and "incentive" are treated as synonyms.
[18] Private co-partnership can be found in some countries.

incentive has been finalized. Loans may be obtained by large enterprises, but also medium and small producers.

National public loans

The national studies show that nearly all the countries have – or have had – public credit systems for forest activities, although they have almost always been included in loan portfolios for agricultural and livestock production. The aim of such loans is to promote investment in a country's forest management. Subsidized loans may have such secondary objectives as poverty alleviation. Almost all the countries mention small producers as major beneficiaries.

The national studies also indicate that in these countries the public loan systems have not worked well for the forest sector, although loans are in principle regulated and there is usually a framework law that establishes the basis for allocating public and private loans. The shortage of financial resources, overly bureaucratic procedures and the high cost of money are mentioned in the national studies as factors severely restricting the possibilities of any substantial increase in State support for investment in planting and promotion of the management and conservation of remaining natural forests. On the other hand, existing credit programmes have been affected by fiscal restrictions, changes in monetary and financial policies, and crises in the banking sectors of various countries. In Panama and Paraguay, where forest loans are included in an agricultural and livestock credit package, very few forest activities are in fact financed. In Ecuador, the Forest Law and the Consolidated Text of the Secondary Environmental Legislation establish *loans for the forest sector* (planting, management etc.). However, no regulations have been issued for this aspect, for lack of political will and/or financial resources. Similar examples can be found in the other countries.

In some countries, such as Nicaragua and Honduras, there are public credit systems financed through projects with resources from NGOs and international cooperation and not from the State treasury. In these cases, there is no national-level credit institution, and loans are usually allocated for a restricted geographical area. There are few national regulations for the granting of such loans and each project designs its own system, a situation that has both advantages (it is easy, flexible and fast) and disadvantages (excessive delays in repaying loans and their bare sustainability).

In Guatemala (the Federation of Cooperatives of the Verapaces [FEDECOVERA]), Paraguay (the Agricultural Development Bank [CAH]) and Chile (the Agriculture and Livestock Development Institute [INDAP] and the State Bank), short-term bridging loans were created to cover the non-productive period between expenditure to establish plantations and the arrival of the incentives anticipated for this activity. The loan is repaid once the incentive arrives, after approval by the forest body that regulates the activity being financed. Bridging loans appear to work well. In Chile, a guarantee fund was attached to bridging loans for small owners in order to make up for their limited capital and assets, and this has also worked well in terms of its consistency, complementarity and the building of confidence.

In Bolivia, loans focus mainly on the final links in value chains, such as the manufacturing industry (furniture and other processed products), especially those already up and running.

Microcredit

In Bolivia, the possibility of State loans is being established through the Development Bank, which will transfer financial resources to bodies that grant microcredit and have developed procedures for financing small and medium-scale enterprises. An example of microcredit in Ecuador is given in Box 13.

Box 13: Ecuador – State microcredit managed by an NGO

A small but good example of microcredit has been described in Ecuador. The Foundation for Conservation and Amazonian Development (CODEAMA) runs a rotating fund of about US$40 000 for forestry and agroforestry microcredit, set up with the help of international cooperation. However, only about 10 percent is used for forest financing. Loans of between US$300 and US$400 are granted to small landowners in the cantons of Puyo (Pastaza Province) and Palora (Morona Santiago Province). The microcredit money is used to finance legal forest harvesting: (i) payment for technical assistance in drawing up forest harvesting programmes and (ii) payment for logging licences from the Ministry of Agriculture and Livestock. In some cases, it is also used to purchase power-chain saws with frame guides, since sawnwood has a greater added value (up to 15 percent more). As a requirement for granting such loans, the CODEAMA draws up an agreement with the landowners. Before this, the Amazonian Forestry Service, which is responsible for providing technical assistance and drawing up forest harvesting programmes, carries out an on-site inspection. The landowners have to be from the region and have title deeds to the land. The CODEAMA delivers the portion of the loan corresponding to technical assistance to the Amazonian Forestry Service, while the remainder, intended to pay for the logging licence, is delivered to the owner at the time this fee is paid at the Development Bank. The landowner returns the money to the CODEAMA when he has sold 50 percent of the harvested timber. Although only about 40 landowners are at present taking part in this scheme, the mechanism has replication potential. The main limitation is the availability of capital, as demand exceeds supply. About 1 000 m^3 are harvested a year, corresponding to an area of approximately 600 ha under management (source: the Ecuador study).

Private loans
The private first- and second-tier banking and finance sector has no interest in granting loan applications for risk sectors – and forest activities are perceived as carrying a high risk. In financial terms, one of the main constraints on the forest sector is that a forest is not considered acceptable collateral when applying for financing. The efficiency indicators applied by private banks and the latter's lack of knowledge about the forest sector are obstacles to the granting of loans to it. Financial bodies therefore prefer to place their credit resources in agriculture and livestock, which may give delayed returns, but have shorter grace periods. And when these banks do invest in the forest sector, forest owners are penalized by the imposition of grace periods, guarantees and interest rates unsuited to forest activities.

On the other hand, it is not hard to understand the banks' point of view. Their quick ratio and the decline in the quality of their credit portfolios are real problems and partially explain their high-risk view of forest plantations, the lack of any correspondence between the times of expenditure and revenue, the real viability of forest activities etc. Reforestation enterprises with cultivated areas could overcome this problem by planning repayment of their loans with the proceeds of sales from periodic thinning or from final harvesting. However, small or medium producers who want to establish forest plantations will simply find no correspondence between the time frames of expenditure and revenue.

In the case of small producers, the situation is complicated still further by their lack of economic back-up, the small size of their holdings and their very limited ability to offer acceptable guarantees recognized by the banking sector and suited to the financial sector, i.e. immediately convertible into cash.

Since the series of financial crises that have affected the region, most banks have adopted a very conservative approach to loans to the business sector, demanding extremely high guarantees (for example, the Nicaraguan report states that State banks require average guarantees of 218 percent of the value of the loan).

Under these conditions, the private banking system, which generally delivers short-term financial resources to finance working capital, is more suited to the needs of such projects as those for harvesting timber or those focusing on the forest industry, since these entail a much faster recovery of invested capital. There are also isolated cases of loans from private banks combined with subsidized loans from NGOs to small owners.

International private loans. In some cases, large enterprises in particular obtain loans from private international banks located in Europe, Panama or the United States. However, the process is cumbersome and not available to everybody.

Guarantee funds and private insurance. In analysing the various flows regarding forest projects, especially those concerned with plantations, it is clear that the time lapse between payment of the loan and its generation of revenue is unacceptable. Repayments of the capital and the interest must therefore come from the borrower's own resources and not from resources generated by the productive activity carried out under the project.

In Nicaragua, private guarantee funds such as the Nicaraguan Forest Financing Fund (FONFOR) provide an interesting model. The fund is in process of starting operations, having established a relationship with the International Finance Corporation/Inter-American Development Bank (IFC/IDB) and shared activities with the WWF to manage the Layasiksa indigenous community's forests. Essentially, the arrangement allows the financial risk to be spread by establishing a complementary fund that is handed over to a conventional financial institution so that the latter will grant low-cost loans to private forest producers and indigenous communities. It is hoped that as soon as the agreement between the WWF and the IFC is signed, the fund will be able to start operations.

Informal loans
Informal loans are a financial resource usually provided by an intermediary acting in the forest or rural context. This type of loan can take various forms, as discussed in Chapter 3 in the context of sources of financing.
Although there are obviously no records of informal loans, they are of major importance in the local economy. Self-financing and advances are two kinds of informal loan in rural areas. In other cases, for example in Brazil, truck drivers who transport timber sometimes act as finance intermediaries in providing loans for forest producers. Although technically speaking these are not "loan" resources, they are certainly informal resources or resources with no intermediary, since they obey no formal or regulatory criteria for their allocation. Such loans must in some way be taken into account in future studies.

5.3 Subsidy and incentive instruments

Background
A subsidy or incentive is to be understood as the economic or material (i.e. in kind) benefit that a government grants to local producers to stimulate certain activities, often with the aim of boosting their competitiveness. Subsidies may be *direct* (*payment in cash or the supply of materials*) or *indirect* (*tax exemptions or other incentivization services*) *incentives*. In the forest sector, the objectives of these instruments range from promoting the establishment of plantations and forest management (for both natural and planted) to the forest industry, forest conservation and, as in the case of Bolivia, forest certification. If the beneficiary of these incentives complies with the criteria laid down by the State body governing them, he or she is not obliged to repay them.

Direct incentives
The formal direct delivery (governed by legislation) of incentives to producers is in fact a subsidy allowing them to reduce the initial costs of their activities and sometimes helping to reduce the costs of establishing and maintaining plantations (pruning and thinning). The percentage of costs covered by these incentives varies very greatly among countries and activities, ranging from 10 to 90 percent.

In most cases, the source of resources for subsidies is the State, but it may sometimes be decentralized public institutions or, as in Argentina, provincial governments. These incentives are usually distributed by public forest institutions, State banks, second-tier banks or bodies that manage forest funds and have been set up for this purpose. The resources are normally regulated by (forest) law and the beneficiaries must comply with certain legal criteria and requirements. In other cases, for example Nicaragua, resources come from projects with national and international funding (international cooperation and international loans). The beneficiaries of subsidies regulated by law are mainly large producers.

In Chile (see Box 14), Uruguay, Guatemala (see Box 15) and, to some extent, Argentina, subsidies for planting have attained their objective of promoting the forest sector. In the other countries, the mechanism has had limited success, often because of problems of the State itself, such as repeated delays in reimbursing costs due to budgetary restrictions, excessive bureaucracy or the lack of appropriate legislation. In Argentina, the decentralization of State mandates to provincial level did not work as anticipated. Non-compliance, scant application and serious difficulties in monitoring the relative norms have hampered its development; later on, the various economic crises in the country were a further factor affecting confidence in these instruments. It should be noted that, despite possible widespread lack of confidence, this instrument is still in force.

Box 14: Chile – forest incentives

Subsidies in Chile are regulated by Executive Decree 701, which has two phases in its implementation. In the first phase, between 1974 and 1995, the objective was to stimulate forest development as a response to the country's need to have sufficient forest stands to supply the emerging forest industry. According to the private stakeholders who benefited from this promotional law, its *main impact* during this period was a reduction in risk for private investment, inasmuch as it laid down that forest land, which was the basis of the development of large-scale export-focused forest industries, could not be expropriated. In the following years, the planted area therefore increased enormously, rising from less than 400 000 ha in 1974 to 2.2 million ha in 2004, with an annual average planting rate of nearly 100 000 ha.

Its *main benefits* can be divided into two broad categories: subsidized activities and tax incentives. The former cover afforestation and the stabilization of dunes on land of preferably forest character. The latter were intended to provide a contribution equivalent to 75 percent of the net cost of establishing plantations, depending on the particular region, the characteristics of the land and soil, the species used, the plantation density and other factors. In addition, technical assistance, maintenance and the management of forests planted on land of preferably forest character were subsidized. The precise amounts were calculated on the basis of tables of costs published each year by the National Forest Corporation (CONAF). Tax incentives cover exemption from taxes on inheritances, allowances, salaries and gifts, and from 50 percent of global tax.

With regard to support for planting on forest land, the planting of 822 248 ha was financed between 1980 and 1997. Small landowners accounted for only 5.8 percent of the total area, with the remainder belonging to medium and large landowners and businesses; 88 percent of the planted area was in four regions (from the seventh to the tenth).

The *main direct beneficiaries* were the sector's large investors, because access to incentives is conditional on financing, technical and administrative capacity, and access to inputs, especially seedlings (Agraria, 2005). It should be noted that during this period planting focused almost exclusively on two species, *Pinus insignis* (Monterey pine – 74 percent) and *Eucalyptus* spp. (18 percent), with other species such as *Pseudotsuga taxifolia* (Oregon pine or Douglas fir) in more marginal areas. Although the rates of State assistance are higher for indigenous species, especially those that are to

some extent endangered, the response has not been marked, due to longer turnovers or in some cases the low commercial value.

The aim in the second period was *to stimulate the economic growth of the forest sector*, based on the rational, sustainable use of natural resources. To this end, Law 19.561 was passed in 1998, modifying Executive Decree 701 and stressing afforestation by small landowners and the use of fragile and degraded land with soil rehabilitation practices. It was hoped that this would encourage the many small forest farmers and landowners to carry out afforestation activities, while also preventing soil degradation and promoting soil protection and rehabilitation.

This law came into force in 1998, but with retroactive effect to 1996, and provided for four categories of incentivizing and financial tools:

- incentives or direct transfers
- costs of administration and promotion of application of the law
- research and development costs
- credit support by State bodies.

The *source of resources* is public, through the budget of the CONAF, which administers them; transfers to beneficiaries are direct, through bonds of the General Treasury of the Republic (source: the Chile study).

In spite of the crisis in Uruguay, subsidies were paid, delayed payments were recognized as debts by the new government, and there are mechanisms for swapping this debt. Since activities under this type of large project have now been cut back, a process of planting has begun through self-financing or access to private venture capital and through investment programmes with targeted loans.

Forest incentives in Guatemala are governed by the Forest Incentives Programme (PINFOR) and work fairly successfully for small and medium producers (see Box 15).

Box 15: Guatemala – the Forest Incentives Programme (PINFOR)

In Guatemala the PINFOR is considered one of the most effective tools for stimulating forest planting. Its details are as follows:

- period of execution: 1997–2016;
- amount solely for the forest component: US$350 million over 20 years;
- coverage or geographical location: the whole country;
- details of financial implementation of the forest financing mechanism:
  - the beneficiary submits a management plan of the area to be reforested or the natural forest to be managed, together with other documentation that the National Forest Institute requires; the management plan is approved; the user proceeds to reforest (in this phase investing his or her own resources); the National Forest Institute certifies the quality of the project; if it is approved, the Ministry of Finance is notified and makes payment of the incentive;
  - the time required, from the moment the surveys for the reforestation or forest management are carried out to the moment the first payment is received, can be about two years;
  - quantifiable anticipated targets: 285 000 ha planted, 650 000 ha of natural forest placed under management in 20 years.

The PINFOR is contributing significantly to reforestation and the sustainable management of natural forests. The part it plays in the NFP is proportionately large. It is anticipated that the areas to be reforested and the natural forests to be placed under management will increase steadily over the years until the programme comes to an end (source: the Guatemala study).

In the case of Colombia, with the use of *forest incentive certificates* or *rural capitalization incentives*, incentives were applied directly to the capital debt that borrowers had incurred to their banks, a system that has also worked well. The same thing has been seen in some Argentinian provinces and also in other countries, where instruments have been set up to subsidize interest rates on loans to the forest sector on the basis of formal mechanisms established by central State banks.

In Latin America in general, the majority of subsidies are allocated for the establishment of plantations. In Chile and Argentina, the legislation is being modified so that it can serve small and medium landowners by expanding the object of subsidies to be applied to indigenous forests, as will be defined in a new law on indigenous forests.

Provision of subsidies "in kind" to small landowners. Small and medium producers have little access to existing regular subsidies and exemptions, since they generally do not pay taxes and often receive attention through sources

coming from international cooperation, with little possibility of sustainability. Subsidies for small producers' forest activities are of a different nature from those described above.

Subsidies generally include support for training, inputs, technical assistance, technology transfer for agroforestry, nurseries, planting and management, and improvements in small and medium-scale enterprises. In this type of benefit, the main institutional objectives are poverty reduction and soil conservation.

In Argentina, the *Social Forest Programme* (ProSoBo) is an example of a programme covering subsidies in kind. It promotes an ongoing activity of the Secretariat for the Environment and Sustainable Development with the main objective of providing technical and financial assistance for the rehabilitation and sustainable harvesting of indigenous forest stands and for the expansion of the nation's forest area, to the especial benefit of both concentrated and dispersed rural communities, helping to prevent their being uprooted. The programme was created by a decree of the national executive in mid-2002 and placed under the Secretariat for the Environment and Sustainable Development with a view to assisting particularly poor groups of rural inhabitants.

Indirect incentives

Tax exemptions. Tax exemptions on forest activities help to reduce operating costs, especially for large producers' plantations, and in some countries are a successful incentive mechanism. Examples of its success are found in Uruguay, Argentina, and to some extent Chile, where plantations are the result of a consistent policy of tax exemptions. Such exemptions may be applied to the individual or company's own resources, reforestation allocations, research on natural areas, and management of such areas. They may take the form of an advance rebate of value-added tax, a favourable long-term taxation system, temporary exemption from tax on gross income, stamp duty, land tax or import and/or export duty.

In Bolivia, the law provides for tax exemption on agricultural and conservation landed property, and also on the rehabilitation of degraded land and forests. However, this mechanism has not worked for a variety of reasons, including the lack of appropriate legal regulations, the lack of juridical security of the necessary investments and the high costs of rehabilitation.

Tax incentives have also been established by law in Ecuador, Nicaragua and Paraguay, but they have not worked because of macroeconomic obstacles and also for want of implementation of the law. In the case of Ecuador, they do not work because there are no practical regulations for implementation of the law.

Other indirect incentives (ideas and possibilities mentioned in the national studies). In Argentina, the provinces can grant reductions in public service fees, facilities for the purchase, lease or free loan of State property as an incentive, although these incentives have not in fact worked.

In Ecuador, the forest law governs some innovative indirect incentives, for example: the National Development Bank can grant priority credit for the forest activities of cooperatives, communities and other rural organizations; and technical and credit support can be provided for the new forests of associations, cooperatives, communities and farmers. It also regulates risk insurance and deposit systems. However, in these cases too, the law has not yet been provided with the necessary regulations, so that it has not been able to operate.

In Guatemala, there are rural financing systems that can be applied to the forest sector, financing up to 70 percent of insurance premiums and thus achieving two objectives: first, to promote the concept of insurance in rural areas; and, second, to encourage private insurance companies to assume risks in the agricultural and livestock sector.

In Chile, a *Guarantee Fund for Small Entrepreneurs* (FOGAPE) was set up as an incentive by the Institute for Agricultural and Livestock Development (INDAP). This is an insurance policy providing access to credit when assets are unavailable or insufficient to be used as a guarantee. It thus provides working capital to obtain raw materials and other goods, pay salaries and meet other production costs.

In Colombia, for the forest investment stage, Article 31 of Law 812/2003 allows forest producers to deduct up to 30 percent of their direct investment in forest crops from income tax, up to a limit of 20 percent of their basic income tax. Moreover, Article 157 of the Taxation Statute allows the value of investments in new reforestation planting or in specialized enterprises to be deducted from taxable income, up to a limit of 10 percent of this income. On the other hand, Article 83 of the same statute allows it to be assumed that up to 80 percent of the income from the sale of products from forest plantations corresponds to the costs and deductions involved in their production, while Article 18 of Law 788/2002 waives tax on income generated from harvesting new plantations and milling these products.

In Bolivia, a small fund was created with non-refundable resources to promote voluntary forest

certification. These resources come from Swedish aid and were initially used to set up and boost an industrial services centre. The centre works independently, using a simple system to provide services and repay the credit that is being used to promote and finance the inception and continuation of forest management operations, and also the chain of custody in industries.

5.4 Capital market mechanisms

The *capital market* is to be understood as the set of mechanisms (sources, operators and instruments) available to an economy to fulfil the basic function of allocating and distributing, over time and space, the capital resources, risks, control and information associated with the process of transferring savings into investments. It complements the traditional credit system. The wide range of sources and instruments it uses makes it relatively easy to find resources with different time frames and different amounts for any economic activity, and with varying degrees of risk (from totally controlled to extreme risks or those hard to assess). The versatility and other features of the capital market have made it a source of major resources for large enterprises and projects whose size, market or risk profile do not easily fit in with the expectations and policies of the traditional credit system.

Some Latin American countries are notable for the creativity and development of capital market instruments, which have channelled substantial resources to activities disparaged by the traditional financial sector, for example agriculture, livestock and forestry. Some examples from the national studies are given below.

Forest securitization
The concept of forest securitization is that of converting physical assets (land or growing stock) into liquid assets (cash), which are linked to shares that are placed on the (primary) public stock market, following the establishment of an autonomous capital fund administered by a trust company in whose name the securities (share or stock certificates) are issued. This instrument allows reforestation projects, which are conditioned by unproductive cycles lasting several years, to gain access to capital resources that will generate a cash flow.

Experience in Chile (see Box 16) shows a system that benefits owners of standing pine and eucalyptus forests that are nearing harvesting age, and also small owners of land to be forested. It is financed with bonds that are issued on the capital market and backed by the standing forests and the afforestation.

Box 16: Securitization in Chile

The Forest Investment Company provided capital of US$1.1 million to launch activities and received a loan of US$3 million from the Development Corporation (CORFO) to purchase all the shares needed to provide backing for a bond of US$13 million, and provide enough cash flow to cover the costs of afforestation, insurance and management during the growth period of plantations.

Through a finance company, IM Trust Corredores de Bolsa (IM Trust Stockbrokers), a ten-year bond for US$13 million was placed on the capital market, with a two-year grace period for capital and interest, at a rate of 8 percent and an AA- and A+ risk classification. This bond was purchased by institutional investors such as pension funds, banks and insurance companies.

The investors are paid when the forest has been harvested. The cash flow from the harvest will allow the bond holders to be repaid. Internationally, this is the only example where a fixed interest instrument is issued that links the capital market to dozens of small owners, giving the latter access to a cash flow to carry out planting and continue maintenance of existing plantations (source: the Chile study).

Trust funds (*fideicomisos*) or autonomous capital funds
Trust funds are financial resources given in trusteeship. Trust companies are intermediary providers of financial services. A trust fund is a juridical construction, entailing a transaction in which a person (the trustor) hands over one or more specified assets to a trust body (the trustee), which is obliged to administer or transfer them in order to fulfil a specified purpose. The trust fund makes it possible to issue securities based on various categories of asset, such as forest wood products (thinnings, felled timber etc.), non-wood products (fuel, resin, oil) and the broad range of forest and environmental services (scenery, plant and animal wildlife protection, carbon capture and storage, soil and water conservation etc., but also livestock grazing, shelter and shade, and the installation of beehives).

Assets must be appropriate and precisely quantified (commoditized). The trust fund thus constitutes a legal business transaction that allows the trustee to invest, administer or guarantee the trust property (financial resources

and other assets) of a trustor (a physical or juridical person owning the financial resources and other assets), for the benefit of those defined in the contract (third parties, beneficiaries or trustors). In this way, the goods and services delivered form an autonomous capital fund, a legal and financial instrument that is administered and supervised by the participating parties and that generates a cash flow for investment projects.

Box 17: Argentina – UBS-Brinson Forest Finance Trust Fund

The UBS-Brinson Forest Finance Trust Fund is a pioneering experiment. It is the largest placement ever made to finance timber production in Argentina. The mechanism is a trust fund, for which Argentina has extensive and well-consolidated legislation (Law 24.441) and major tax incentives promoting it as an instrument.

The trust fund was organized by the Union Bank of Switzerland, with the purpose of acquiring land in the Corrientes and Misiones Provinces suitable for planting exotic species.

The mechanism works through the issuing of fiduciary debt securities by the trust fund. These are acquired by investors (trustors/beneficiaries) in order to obtain an income from the administration of forest enterprises carried out by a technical advisor or administrator.

In February 1999 the CMF Bank (the trustee) issued debt securities and share certificates in the UBS-Brinson Forest Finance Trust Fund for a net value of US$21 415 000 with a ten-year maturity, extendable for a further five years. The profits from the placement of the shares were used for the acquisition and maintenance of forest plantations and land suitable for this purpose.

Although the trust fund encountered some operational problems, the experiment is considered a promising way of financing SFM. However, if the promise is to be fulfilled, certain norms and mechanisms for setting up trust and endowment funds need to be streamlined to reduce the high costs of consultancy services, legal advice, risk assessment, administration etc. Trust and endowment funds are in fact mechanisms used exclusively by large economic groups whose financial backing allows them to undertake large-scale projects (source: the Argentina study).

A very interesting application of transactions with a trust component is that of converting unproductive assets (stock or holdings), which are generally not directly acceptable to creditors, into guarantee trusts, with which financing resources are generated (for example *warehouse or bond warrants*).

In a typical forest example, investors forming part of a trust fund invest resources that are used for the establishment, maintenance, industrial processing and forward purchase of growing stock; then, once the timber has been harvested, they recover their capital investment plus an agreed percentage of profits or fixed interest. The trust fund instrument allows the investors and owners, who join forces within it, to protect their interests and contributions. Participation in the proceeds of the sale of timber is agreed among the parties in advance. The modes of remuneration are specified in accordance with the requests of the forest investors and may be monthly, yearly, at the end of the felling cycle, or at any other time agreed by the parties.

With regard to the use of new financial instruments, in Ecuador the *sustainable forest development strategy* anticipates the creation of trust funds or resources in trust with concessional loans,[19] and the promotion of systems for the forward sale of timber and environmental services produced by forest plantations and processes of securitization, through the stock market. However, the strategy has not yet been put into practice.

Argentina has recently seen a very promising increase in *private forest trust funds:* although such funds are outside the capital market, they represent an innovative and simple way of channelling institutional funds to forest activities. An example is the Brinson Forest Trust Fund, described in Box 17. Although it operates under private contract and therefore does not provide many opportunities for actors and stakeholders of other sizes and origins to gain access to financing, it does mean that productive activities are being financed by sectors that normally have no connection with forest activities.

Commodity exchange and stock exchange instruments (shares, bonds, equity)

Private enterprises sell shares through the stock exchange as an additional instrument to finance investment in forest activities. An example is Agrotropical in Ecuador, which invests in tropical fine woods and has shares quoted on the Guayaquil stock exchange. In such countries as Argentina, however, high transaction costs have prevented the use of this device. In Bolivia, on the

[19] Concessional loans are intended to support the economic and social development of developing countries through subsidized interest etc.

other hand, it is seen as having major potential, and new mechanisms have recently been created to finance small and medium-scale enterprises (SMEs) through a closed investment fund ("SME strength"). Participation is conditional on the companies' adoption of modern management practices and regular submission of financial reports. A high capital value and an expensive risk category are required. Norms are now being developed to facilitate the access of small and medium-scale enterprises through the establishment of mutual guarantee companies, an incentive to venture capital and a system of stock exchange guarantees, made up of the Bolivian stock exchange pensions administration company and other financial institutions, such as NAFIBO SAM, FUNDAPRO and PRODEM.

Although the Panamanian stock market offers financing mechanisms that provide access to capital market resources, there are limitations on the availability of financial products for the forest sector, with current policies restricting the formulation of long-term operations to a maximum of one year. Moreover, there are no insurers in Panama prepared to grant cover for operations lasting more than a year, so that when the stock exchange does approve long-term operations, it requires an unqualified undertaking by the parties to the transaction (buyer and seller) that they will automatically authorize annual renewal of the forward contract guarantees underpinning the financing operation.

Value-generation through corporate financing
Value-generating initiatives by financial corporations, usually by planting teak (or other species), are intended to promote investment in the forest sector by physical and juridical persons. Investors purchase financial products (shares, bonds etc.) as a long-term income-generating investment. The financial products are intended to accumulate the necessary resources for the producer's operations, from the start of activities until the trees are felled. The company does not envisage the existence of any financial liabilities. Profitability is calculated on the basis of projections of timber growth, which take historical data, conservative price estimates and calculations of costs and maintenance expenses into account.

Institutional and non-traditional investors
Capital market investors vary in type. The most common, because of their huge surplus of cash, are pension and unemployment funds, but there are also traditional investors, some speculators, businesses, various types of foreign investor etc.

In Paraguay, as in the other countries, there are substantial financial resources from various sources, for example monies belonging to those insured with the Social Security Institute. These resources are savings forming part of a capital intended for medium- and long-term investment. They are deposited in the National Development Bank or private banks, and may not be invested in the forest sector because of the high perceived risk. In the past ten years, some of these banks have gone bankrupt and lost all their holdings, when they could have invested more securely in forest plantations.

In Argentina, another option for institutional investment with a forest component is represented by the portfolio of the Retirement and Pensions Financial Authority. Although this has worked, it has not been extended. The authority is not keen on this type of risky investment, partly because of its general investment policy and partly because of the guarantee requirements laid down by the supervisory authority for pension fund administrators.

In general, financial agents, for example social security funds, know little about the forest sector and do not invest in it for want of clear, appropriate mechanisms. Social security funds are often legally confined to investing in land-based shares or in closed stock companies. Although they can also in fact invest in open stock companies, negotiable bonds or trust funds for a quick cash flow (they can be cashed in at any moment rather than being tied to forestry cycles), development of such instruments would be needed.

For the forest sector, the venture capital or forest investment funds called Timberland Investment Management Organizations (TIMOS) channel resources from workers' or retired workers' associations or funds in Europe and the United States earmarked for forests.

Forward sales
All the actors in the production chain tend to have difficulties in obtaining start-up capital; then, as the product is commoditized from one link to the next, cash starts to circulate with the buying and selling of products or services. The longer the production process, the greater the need for investment and the longer the delay in recouping the capital. This applies especially in vertically integrated businesses that have their own production chains, from the tree through to the finished and packaged product at the port of shipment. Businesses depend on surpluses produced along the production chain to provide them with the necessary capital for production. Working capital is obtained through the assignment of rights, as in forward contracts, which are procedures for the advance sale of products, in which buyer and seller agree on conditions regarding quantity, quality, price, and delivery dates and places in order to market the items. The assignment of rights on delivery is the

agreement on the part of the purchaser to deliver the product stipulated in the forward contract, so that the seller can obtain a cash advance on its future delivery through the stock market, for up to 80 percent of the total value of the forward contract, thus gaining access to resources that allow him to pursue his production process. The studies do not mention whether forward contracts include specific sustainability and responsible forest management criteria, although this is possible and desirable.

In the case of community forest operations in Bolivia, the planning and harvesting of timber are mainly financed by purchasing businesses through the traditional *habilito* system or the advance of cash against future timber sales. Most community forest operations have few market choices, and their main customers are businesses with sawmills near the areas under their management. Moreover, small farming or indigenous communities have no possibility of obtaining credit, no capacity for self-financing and nothing left from previous operations. To obtain financing, they resort to a *habilito* or advance from the interested purchaser, then use this to start activities or contract the necessary services. Up to 50 percent of the value of the purchase is usually requested when the contract is signed. This system often ends badly, because those involved tend to use the advance to cover other immediate expenses, leading to a vicious circle of defaulting along the whole chain. In the case of organized communities that have managed to produce surpluses, they often keep a considerable amount in reserve to start operations without having to seek loans. Self-financing and the *habilito* system are still the two main sources of financing for forest activities for wood and non-wood production in Bolivia – and probably in the other countries too. In Bolivia, the *habilito* system comes from old practices established for the harvesting of rubber and Brazil nuts in the northern Amazon region. In the timber industry, the *habilito* basically started with the huge advances from United States and European purchasers of mahogany, and this type of financing is still in operation. Although it is less prevalent in connection with export transactions, it is still a significant source of cash to kick-start the activities of small and medium-scale community enterprises producing for the local market. In general, sustainable production is not a consideration in this type of financing (source: the Bolivia study).

There are various examples of advance purchases of timber in order to finance sustainable management of forest plantations in accordance with the certification standards of the Forest Stewardship Council (FSC). The Foundation for the Development of the Central Volcanic Range (FONDECOR) in Costa Rica is a case in point.

Merchandise certificates of deposit (warehouse warrants)

With merchandise certificates of deposit or warehouse warrants, working capital is financed through sales with an undertaking to repurchase. The procedure entails the immediate sale and later repurchase of warrants issued by authorized warehouses, giving the owner of a stored product immediate access to resources in order to improve his cash flow by selling the warrant with a commitment to repurchase it at a fixed date. The mechanism is effective in optimizing assets that are temporarily not liquid, such as forest holdings, because it draws on their value and provides financial resources equivalent to up to 70 percent of their nominal value. A percentage of the value of the draft is paid monthly, using the enterprise's sawnwood as a guarantee, valued at market prices. A good example is the secured loan for the Brazil nut value chain in Bolivia's Pando Department (the Bolivia study). However, it is also used in many cases of warehoused timber in other countries (in the same way as is done with warehoused agricultural produce).

Financing opportunities in other sectors

For example, some national studies mention the investment promotion mechanisms existing for other sectors of the economy, which may include a reduction in the cost of launching a project, tax exemptions and/or reductions, facilities for incorporating assets and fiscal stability. Incentives offered to national or foreign investors can be divided into three categories: (a) those promoting a particular region or locality, (b) those promoting a particular sector or economic activity, and (c) cross-cutting instruments, with benefits that can be applied in any region or sector. The opportunities that legislation offers in other sectors have been little used in the forest sector.

In Guatemala an analysis was made of all the opportunities that other resources – such as social funds, peace funds and rural development funds – can offer, and it was concluded that they represent an opportunity, albeit little used because little known.

The commodities market. In Panama's commodities market, BAISA S.A., stock exchange transactions offer financing mechanisms that allow access to capital market resources. To this end, the commodities market, either independently or in association with the stock market, must have an operation compensation system that should administer a system of guarantees with a particular application, depending on the conditions of each operation, physical or financial, the time frame, volatility and product.

Risk mitigation. Risk coverage financial services must be introduced in order to encourage private

financial institutions to channel their savings into productive activities, especially those at present perceived as entailing a high risk. This will mean, for example, reviewing the international experience of guarantee funds, mutual guarantee companies, agricultural insurance, credit insurance etc., analysing their relevance, considering the adjustments needed to fit them to the actual situation of the country, running pilot tests and scaling up their use (see also Box 18).

Box 18: Ecuador – agroforestry systems to mitigate risks

The Agrotropical company cultivates forests mainly of teak and cocoa, but it has also incorporated other fine tropical species such as cedar, mahogany, rosewood and lignum vitae. Cocoa yields an annual income, enabling the company to distribute cash dividends. Teak has major growth over a period of many years, so that the company can generate dividends in shares. Diversification is also a major risk-mitigating strategy, for if one product is undergoing a downturn, the company has other products to compensate. The new resources it receives are used to purchase and plant new plantations each year (source: the Ecuador study).

5.5 Lessons learned

Credit instruments

Public loans
Public loans (including those from international cooperation) for the forest sector play a fairly insignificant role in investment in plantations, and even more so in natural forest management. Even where there is legislation regarding forest credit, the latter is not a priority, but is included in the agriculture and livestock package, which has different conditions, time frames and risk profiles. In cases where public credit is short-term (bridging loans, working capital and support for value chains) and is combined with incentives (Chile, Guatemala and Paraguay), it has worked better for the forest sector, but especially for planting, processing and marketing, and not so much for natural forest management.

The lack of bank guarantees and the perceived risks are a major obstacle in the granting of long-term forest loans. In some countries, such as Colombia and Uruguay, the problem has been solved by a law allowing the use of forest land and standing stock as a guarantee, and the possibility of mortgaging or pledging either. In Uruguay this has allowed the leasing of land to establish forest plantations.

Public forest loans are generally aimed at small producers, but ultimately tend to be inaccessible because of the various conditions imposed, the bureaucracy entailed or the operators' ignorance of the forest sector. More attention to simplifying procedures in order to facilitate small producers' access to credit instruments (and financing instruments in general) would reduce transaction costs and make the instruments more effective.

Private loans
Although the structures of national private loans in theory offer forest producers a wide range of instruments, they are not tailor-made for forest management. Large companies usually deal with (international) private commercial banks, as they have a solvent profile and an established legal basis, unlike small and medium-scale producers. It is hard for small owners to obtain loans from formal private banks because they cannot meet the conditions demanded and cannot mortgage their natural resources since forest land is usually not acceptable as a guarantee. The main problem hampering access is that in many cases they do not have clear title to their property. The current inflexibility of credit bodies leaves few possibilities for exploring new opportunities.

Microcredit and loans based on solidarity
On the other hand, experience in other sectors and some initial experience in the forest sector has shown that microcredit managed by NGOs has turned out to be a useful tool, especially for small farmers in remote rural areas. Under special conditions, microcredit can therefore offer a new opportunity for forest activities (planting, forest management, harvesting etc.), whereas this is not the case with banks or other traditional financing bodies. NGOs could also help in training and capacity-building for groups or associations of small forest producers. There are examples of cooperatives and producers' associations receiving this kind of financing (loans based on solidarity). Experience shows that financing groups of producers gives a better social control over the use of these resources.

Informal credit
Informal financing is an element of major importance, but one that has been little studied. It is often used in small-scale operations, which are undertaken in a high-risk context (defaulting, illegality, absence of guarantees, lack of accountability), and are particularly common in the first links of marketing chains. The activity usually does not encourage the adoption of new technologies, training and long-term business approaches, but tends to be confined to financing the extraction of raw material in poor health and job safety conditions. Such loans are received in remote areas within direct trade relationships.

Informal financing is like an invisible short-term loan, scarcely appearing in statistics and the financial environment. Informal credit basically works because of the absence of formal banking, or because of an inability to meet the requirements of public and private banks. The range of opportunities for informal intermediated loans reveals a dynamic, flexible sector, although one that tends to have high interest rates and takes no account of legislation and sustainability, although its transaction costs are low.

Subsidy and development instruments
Subsidy and development instruments are generally used to stimulate large-scale forest planting and not for the management and conservation of natural forests. They are public economic instruments that have been granted mainly to large producers, while small producers have not really known how to take advantage. Direct payments (subsidies) have been used in nearly all the countries, working better in those with specific legislation, an environment of solid institutional confidence and a long-term commitment.

For indirect subsidies to work, they need the same features as direct subsidies, that is, an enabling institutional, political, legal and regulatory framework, with juridical security protecting any investment in the forest sector. Tax exemptions have worked well for the establishment of plantations in a few countries, for example Argentina, Chile and Uruguay.

In some countries, international cooperation has promoted small-scale agroforestry and forest plantations in community areas, usually under specific projects and with their own *modus operandi*, providing training, seedlings and in some cases cash subsidies. However, there are few cases in which the country has been able to institutionalize and sustain this activity.

Capital market
For a long time the capital market has been the main instrument for financing investment in commercial forestry. Self-financing by large companies and private investment capital are currently driving forest business in most countries. It is expected that the capital market will continue to be by far the largest source in the future – and the only one with potential for further growth (with additional and new resources) – in comparison with such other investment sources and instruments as loans, subsidies and international cooperation.

Although the capital market offers a wide range of existing and possible instruments, its potential for the forest sector has so far been underutilized. People in the forest sector tend to be unaware of the potential of the financial sector, and vice versa. The current separation between the two sectors is a major obstacle when raising new and additional financial resources or developing new instruments. However, in some countries growing interest and creativity are being shown in developing forest financing instruments (including conservation) in order to enter the capital market.

The question of how to connect small producers with the capital market and formal investment sources is a challenge. Although in some countries innovative financial instruments are being designed for small and medium-scale enterprises, they have so far been very little used in the forest sector. This situation may change as innovative mechanisms are developed that take account of the profile of the investors indicated. An example is the practice of sale with a repurchase agreement on term certificates of deposit, into which small producers, with the backing of their own forest stocks, can channel working capital. Another option is to increase the scale of the operation, which will require partnerships through cooperatives, producers' associations or associations among small and large enterprises, which could also facilitate access to technology and business training.

The majority of formal private financing operates when there is little risk. A key element when raising additional capital market resources for the forest sector is therefore risk management and long-term investment flexibility. Special instruments need to be developed to address this issue, for example guarantee, compensation and cash flow systems (such as forest insurance) and bridging mechanisms (between the short and long terms) to underpin investments. The creation of an enabling political, legal and institutional framework is equally important in encouraging investment in forest management while incorporating sustainability criteria.

An important lesson to be learned from the national studies is that the various instruments should be considered as a whole in order to establish greater complementarity and synergy. Given the current situation and trends in forest investment, it is important to clarify the possible functions and interrelationships of the various public and private instruments and those of international cooperation. Assuming that private capital will continue to be the main engine of forest investment, an important function and an effective use of national public funds and instruments is the leveraging of private capital and the creation of favourable conditions for its mobilization and responsible investment. Similarly, international cooperation has a facilitating role in supporting and promoting trials of innovative instruments, while leveraging international funds and creating enabling international conditions for sustainable forest development.

The national studies show that the region has the experience and space to create combined financial instruments that make use of the capital market and other sources, for example business cases (concrete cases of private or mixed investment) that combine international cooperation and public and market instruments, each with its own specific function.

Neglected areas
The studies reveal that current forest investment instruments ignore not only natural forest management and small producers, but also the rehabilitation of secondary forests, the restoration of degraded forest land, agroforestry systems and the conservation of protected areas.

5.6 Conclusions

Short-term instruments are the most prevalent form of formal *public and private loans* for forestry in Latin America, usually focusing solely on planting, harvesting and the manufacturing industry.

Small producers find it hard to gain access to credit from formal public and private banks because of the conditions imposed, the bureaucracy and above all their lack of a solvent profile due to insecurity of land tenure. Insufficient advantage is taken of the potential of microcredit and loans based on solidarity, combined with the instruments of producers' associations, to overcome some of the constraints.

For small producers, *informal credit* is the main and often the only source of financing. It operates as an invisible loan in a context of high risk, inequity and scant transparency, the extent, working and impact of which on forest management and small producers are little known or studied.

Subsidies and exemptions have worked well enough as mechanisms for long-term development so long as they are set within a clear legal framework. Instruments that lack a legal basis tend to be applied in an *ad hoc* manner, as is the case with some local-level development and credit systems established by international cooperation or NGOs in some countries.

The capital market is and will continue to be by far the largest source of financing for the sector – and the only one with potential for further growth in comparison with other sources and instruments such as loans, subsidies and international cooperation. Despite its size and the wide range of existing and possible instruments, its potential for sustainable forest management and conservation is so far little known and underutilized. The instruments with the greatest potential for expansion would seem to be trust funds, certificates of deposit, institutional investors (pension funds, insurance companies) and stock exchange instruments.

Formal financing works where there is little risk. At present it therefore basically focuses on the final links in the value chain, where products are commoditized and where money-lenders are able to guarantee or secure the loan with collateral that the financing body considers acceptable and monetizable.

The challenges are how to make investment more attractive and how to *manage the risks* in the first links in the forest chain, seeking innovative approaches that make private investment more flexible, while guaranteeing it, ensuring the application of sustainability criteria and focusing not only on plantations but also on areas that are for the most part neglected today, such as indigenous forest management, rehabilitation of secondary and degraded forests, agroforestry and conservation.

The instruments for raising additional financing for investment are less effective on their own than if they are accompanied by instruments for economic development (loans, subsidies and/or exemptions), especially guarantee, compensation and liquidity systems (such as forest insurance) that support investment while creating complementarity and synergy.
A key factor for increasing the sustainability and effectiveness of these packages of instruments is the creation of a stable political and institutional environment, especially a *legal framework*.

The present *divorce* between the forest sector, especially small producers, and the financial sector is a serious obstacle when raising additional and new financial resources and developing the necessary instruments. The financial sector has a latent interest, creativity and growing experience in developing forest financing instruments to allow access to the capital market. This interest, creativity and experience now need to be mobilized by foresters.

An important function and effective use of *national public funds and instruments* are those of leveraging private capital, creating favourable conditions for its mobilization and responsible investment, and promoting the coordination, cooperation and development of business cases among actors and sectors.

International cooperation has a facilitating role in supporting countries, especially their small and medium producers, by promoting the trial and development of innovative instruments, the leveraging of funds, the creation of enabling international conditions for SFM and greater attention to neglected areas.

6 Payment instruments for forest goods and services

6.1 Introduction

This chapter gives an overview and analysis of the payment instruments for goods and services produced by forest ecosystems, as described in the national studies. In the diagram in Box 7, payment instruments are listed in the right-hand column.

Payments for *forest goods* mainly concern the market sale of timber and NWFPs. Inasmuch as the national studies were not intended to supply quantitative information on the workings of the timber market, price indexes and payments made, this chapter does not address the subject in any detail, but basically examines various qualitative factors concerning timber and NWFPs, especially those affecting prices and the market, and confines itself to summarizing the elements dealt with in the studies: value chains, certification, the experience of small and medium-scale enterprises, and work with communities.

The concept of payment for *forest (or environmental) services* entails the voluntary or obligatory payment by the consumers or groups of consumers to the producers (usually through a distribution operator) for these services, so that the producers will keep on producing the required services.[20] Even though they are generically known as "payments for environmental services" (PES), in relation to the forest sector they are also known as "forest service payments" or "payments for services provided by forest ecosystems".

The national studies indicate that environmental or forest service payments are receiving increasing attention in all the countries. Recognition of the values and functions of forests for society, apart from the production of goods, has recently led to a major increase in interest in forest services, since they can bring in additional income and therefore make forest management more cost-effective. These developments have also given rise to many initiatives, on which the studies provide abundant information, which is why the present chapter deals more extensively with the instruments of payment for forest services than those of payment for goods.

The combination of payments for different services (and goods) is known as "bundling".

6.2 Commodity market instruments

This section reviews some instruments and trends described in the national studies with regard to the payment for goods that are particularly interesting because of their potential to obtain a higher price for forest producers, which would in turn enable the latter to manage their forest resources more sustainably.

The timber production chain and intermediaries in timber sales

The national studies give some indications (especially concerning natural forests) of the effect of greater efficiency on the timber production chain and on potential commercial gain, an area that currently has many defects, especially among small and medium-scale enterprises and producers. For small owners, a whole chain of intermediaries normally begins after harvesting and before the wood is sold to the sawmills. In most cases, felling and transport are unregulated activities carried out by individual sawmill owners in an illegal context.

The intermediary between buyer and seller plays an important but very costly role in the value chain. This person is generally no more than a collector who operates at his own risk when trading in indigenous timber and who in fact tends to act mistakenly due to an ignorance of the various species and their real price. There is room for much improvement in processing and transport, which will improve the efficiency of the operation.

Large enterprises that own and harvest forests (mostly plantations) or have concessions for natural forest areas have a more integrated, effective structural organization, but they also

[20] Wunder (2005) and others define the concept of "payment for an environmental service" as a *voluntary* transaction, but the national studies indicate that both voluntary and obligatory transactions are in fact found.

have many features that could be improved, especially the organization of the chain. It was observed that current certification processes are leading to a greater integration of the various links.

There are successful innovative examples for small producers in natural forests, such as the Awá Plan in Ecuador (see Box 19). In other countries, for example Chile (especially for the small owners of indigenous forests) and Guatemala, opportunities are being created to make marketing more professional through training, while improving supply and stimulating demand for products through strategic public-private partnerships.

Box 19: Ecuador – the Awá Centres Federation of Ecuador

The ***Awá Centres Federation of Ecuador (FCAE)*** has been implementing its own community forest management project for five years, with support from the Chocó Ecoregional Programme of the WWF, Altrópico and other institutions, and backing from the Ministry of the Environment. The members of the FCAE have developed an innovative logging system, under which the trees are cut into 25x25 cm blocks, transported by aerial cable to a river bank and then to San Lorenzo, where they are processed into floorboards. The wood is then transported to Quito and delivered directly to a company that produces wooden floors. Marketing about five trees a month in this way, without intermediaries, the FCAE receives between US$235 and US$245 per cubic metre, about four times what it receives when selling the wood in San Lorenzo. After calculating all the production and administration costs, which represent about 45 percent of the total price, the communities and the FCAE receive double the local market price. The FCAE has so far extracted and marketed about 45 m^3 of wood in this way and is anticipating an annual production of approximately 200 m^3 (Jácome, 2003; the Ecuador study).

The FCAE has launched a project to obtain forest certification in order to gain access to international markets that purchase certified wood and to win national and international recognition for its management of the biological resources of its territory. This scheme demonstrates the possibilities of receiving substantial lasting benefits through community proposals regarding forest management, with the following financial conditions: (i) the existence of a self-financing mechanism based on the reinvestment of part of the income obtained thanks to the fair price received for timber, making it possible to cover the operating costs (source: the Ecuador study); and (ii) a forest certification process that is up and running.

Forest certification

Forest certification is a voluntary process through which an independent third party issues a certificate guaranteeing that the management of a forest is being carried out in compliance with a set of established criteria and standards. Some of the authors of the national studies see certification of sustainable management as an instrument that can generate a better price for goods. Others see it differently, since it entails additional costs and the markets do not yet compensate for the expense incurred in obtaining it. Nevertheless, in some countries, for example Bolivia and Guatemala, significant advances have been achieved in certified areas, and others are beginning the process.

Bolivia has a large area of tropical forest – more than 2 million ha – certified under the FSC scheme. Moreover, forest management and certification have encouraged the use of alternative timber species in the country. In Guatemala, 518 348 ha were certified as of March 2006, 6 264 ha of which belong to four private companies and 512 085 ha to sixteen community and private forest concessions granted in the El Petén Department and cooperatives in the same department. Similarly, ten companies have a recognized chain of custody. Forest certification in Bolivia and Guatemala has been combined with the system of granting forest concessions. In Guatemala there are fourteen certified concessions (twelve community and two private) to date, with an overall area of 533 951 ha.

Panama and Paraguay have begun the process of certification. In Uruguay, more than 60 percent of cultivated forests are certified, mainly according to FSC norms. This has contributed not just to the opening up of previously inaccessible markets, but also to an increase of up to 20 percent in the selling price of timber (the Uruguay study).

Community-business association

An interesting model, especially in relation to forest certification, is the community-business association established in Guatemala and now being set up in Bolivia, where large enterprises enter into agreements and partnerships with indigenous and farming communities to finance certification in exchange for purchase of the certified timber. This kind of financing mechanism, with a minimum of encouragement from grant funds, seems promising in enabling enterprises to obtain a regular supply of raw material, and communities to generate income by selling certified wood with the watchful assistance of a certifying organization. On the other hand, this combination of interests requires special legal attention and appropriate regulations to avoid corruption of the communities concerned.

However, apart from a few positive examples, the commercial forest sector has generally not deemed family business management an attractive proposition, and there has been no large-scale effort or innovation in establishing productive horizontal and vertical partnerships or local community production networks with regard to certification. Nevertheless, although examples have been thin on the ground and have not led to the hoped-for changes in terms of the modernization and competitiveness that would generate confidence among investors, the studies show that this type of community-business association has a potential that should be explored and encouraged.

Fuelwood market and household consumption

Although fuelwood is an important forest commodity, it is undervalued and has the potential to find a better market at a better price. The Chile study mentions it as the main national wood-based energy commodity, accounting for 74 percent of total consumption, followed by waste from harvesting and industry, with 24 percent, and charcoal, with 2 percent. These figures indicate the high energy contribution of forests, mainly to meet the needs of the residential sector. It is calculated that 12 million m^3 of fuelwood are used annually, with a market value of US$250 million, generating thousands of jobs at the local level (source: the Chile study).

The Uruguay study notes that "the most widely consumed forest product of national origin is fuelwood, accounting for between 50 and 60 percent of forest harvesting". This share could change, depending on prices of this product in comparison with fossil fuels, especially natural gas, and with the prices that could be obtained on the external market for the products of cultivated forests (source: the Uruguay study).

Although no mention was made of them and no further information is available, informal markets and extensive use of fuelwood and charcoal must exist in other countries.

Given the high – and growing – use of wood as fuel in the household, service and industrial sectors, and the effect this could have on indigenous forests, initiatives are being launched to produce high-quality fuelwood and to promote and provide financial support for renewable and non-conventional energy projects.[21] Fuelwood could constitute an additional major source of income in some countries in the region.

In Chile, a national cooperation agreement for the sustainable use of fuelwood has been established (see Box 20).

[21] Mention should also be made of the growing demand and prices for biofuels in general on the national and international markets.

Box 20: Chile – national fuelwood certification system

In 2005, public and private bodies signed a national cooperation agreement for the sustainable use of fuelwood, undertaking to carry out coordinated promotion of fuelwood production and formal establishment of the corresponding market in compliance with environmental and tax legislation, and to support a national firewood certification system encouraging their own and third parties' use of certified fuelwood.

The agreement was signed by the National Commission for the Environment (CONAMA), the National Forest Corporation (CONAF), the National Consumer Service (SERNAC), the German Socio-technical Cooperation Service (DED), the Social Action Department of Temuco Diocese (DAS), the Forest Engineers' Organization for Indigenous Forests (AIFBN) and the Ñuble Indigenous Forest Union.

This voluntary initiative led in June 2006 to the constitution of a National Fuelwood Certification Council made up of the senior officers of the CONAMA, the CONAF, the Energy Efficiency Programme of the Ministry of the Economy and the SERNAC, together with representatives of the Fuelwood Certification Councils of Chillán, Temuco, Valdivia and Coyhaique (source: the Chile study).

Market for NWFPs and household consumption
Bolivia, Brazil and Peru export Brazil nuts from wild trees in the Amazon forests, with Bolivia leading such exports. The success of this sector is a result of the rising price on the international market and the implementation of high standards in post-harvest handling. The financing of harvesting is almost wholly informal and plays a major role in the short-term financing of forest management in these countries, providing a cash flow for such activities.

A similar example is seen in Ecuador, which has about 500 species of medicinal, aromatic and seasoning plants, 45.6 percent of which are the most widely used and 25 percent the most widely marketed. The country currently offers seven kinds of by-product: raw materials (fresh and dried plants), aromatic and medicinal infusions, seasonings, colouring, plant protection products (produced wholly from medicinal and aromatic plants), essential oils, vegetable oils and natural cosmetics. Some examples of these products are given in Box 21. Although they are important for sale and use, it is not clear if the indigenous forest, besides supplying plants for collection and the initial seed, will in every case keep on fulfilling its function as a repository of mother seedlings for reproduction in nurseries (a kind of *ex situ* plant conservation), so that its strategic functions in relation to forest financing can continue (source: the Ecuador study).

Box 21: Ecuador – the Bolsa Amazonía

Ecuador is part of the Bolsa Amazonía Regional Consortium, which promotes sustainable Amazonian products, encourages partnerships among Amazonian producers, NGOs and enterprises interested in the sustainable use of biodiversity, boosts the managerial, technological and marketing capacities of producers and community enterprises, and runs a business and cooperation network among Bolivia, Brazil, Colombia, Ecuador, Peru and Venezuela. Apart from ecological products, the Bolsa Amazonía-Ecuador stresses environmental services. Its point of contact in Ecuador is the Environment and Society Foundation.

The products being promoted include such fruit as the *arazá* or guava (for pulp and jam), which grow in agroforestry systems or secondary forests, handicrafts (Cofán, Huaorani and Quichua), ecotourism (support for the Community-Based Ecotourism in the Upper Napo River of Ecuador Network [RICANCIE], a new network of Quichua communities in the upper Napo region, in the Grand Sumaco–Sumaco Galeras National Park Biosphere Reserve, and the Sarayaku community) and other NWFPs (ungurawa palm oil, groundnut, ecological coffee). See http://www.bolsaamazonia.com/ecuador/productos.asp (source: the Ecuador study).

Payment instruments for other cultivated products
Forests as protection. An often overlooked but appreciable aspect is that forests also serve as protection and support for some agricultural crops, such as cocoa, vanilla and pepper, which are cultivated within them.

Energy. Forest production for energy will be of great interest in the future. Given that various countries have large areas of land that is of preferably forest use but is at present degraded and available for the establishment of forests, some of these countries are examining the feasibility of creating instruments to promote forest plantations. At present, crops intended for the production of biomass for energy can be divided into three main types, according to the end use of the biomass: (1) oilseed crops for the production of oil that can be processed into biodiesel; (2) alcoholigenic crops for the

production of bioethanol, which can be used as a total or partial substitute for gasoline or kerosene; and (3) lignocellulose crops for the production of solid fuel for heating, industrial uses or electricity production. At the national level, the potential of this type of crop can be an attractive option in order to provide an economic supplement to forest activities, thus favouring small and medium-sized owners of marginal land who need a more regular cash flow. However, it is also noted that a concentration on bioenergetic crops may represent a threat to the existence of natural tropical forests, because of the vast areas that would have to be allocated for this purpose.

6.3 Payment for forest services

The principle of a system of payment for services is normally "user pays". However, on some occasions the system is based on the principle "contaminator pays" or on a combination of the two, as in the case of the "cap and trade" system regarding carbon emissions, in which the creation of the source is based on the principle "contaminator pays" and payment for carbon sequestration is based on the principle "user pays". In the case of the principle "contaminator pays", people often speak of a compensation rather than a payment.[22]

In general terms, payment for forest services can be based on *instruments for direct payment by beneficiaries* (for example, charges, percentages of drinking water rates, forms that are common in PES schemes for catchment areas) and *instruments for indirect payment* (for example, ecotourism). A distinction can also be made between *voluntary* payments (fostered by individuals or companies), based mainly on market arrangements, and *obligatory* payments, based mainly on government regulations (for example, taxes allocated for specific purposes such as those on petrol, the circulation of goods and services). There are also mixed instruments in which the government establishes a compulsory standard that creates the conditions in which a market instrument works. An example is the above-mentioned "cap and trade" system regarding carbon emissions, which came about through the establishment of a maximum carbon emission for businesses, while creating a market that allowed the trade in emission rights. Box 22 provides a list of the various types of payment and gives a rough idea of those that are voluntary and those that are obligatory.

Principio	**Form of payment**
"User pays" or "producer benefits"	A payment to the producer of the good or service to promote its sustainable production
"Contaminator pays" or "affected party receives"	Compensation paid to the person who suffers the damage

[22] This confusion has led to differences of opinion over the inclusion of the principle "contaminator pays" within the concept of payment for environmental services.

Box 22: Some examples of voluntary and obligatory arrangements for forest service payments

Type of arrangement or transaction	Beneficiaries/Users
Voluntary	Carbon - voluntary carbon market Water - hydroelectric companies - bottled water companies - breweries - industries using water as an input - national and international cooperation/community Biodiversity - pharmaceutical and cosmetic companies (bioprospecting) - conservation concessions - international cooperation Scenic beauty - entrance fees for national parks - nature tourism
Obligatory	Water - drinking water rates Carbon - forest Clean Development Mechanism (CDM) - petrol taxes
Mixed	"Cap and trade" system regarding carbon emissions

6.3.1 Voluntary payments

These are divided into *direct payments*, with a direct relationship between producer and consumer, and *indirect contributions*, where this relationship is not so obvious.

Direct payments

Water services

Payment for the conservation of catchment areas (with payment for water services) can be a voluntary arrangement between the parties, promoted and implemented mainly by municipalities, public service companies and local NGOs. In most cases, however, it is a compulsory payment, which will be discussed below.

An interesting example of a voluntary payment is the working of the Water Fund of the Motagua-

Polochic System in Guatemala. Many institutions contribute to the fund, include such private companies as Coca Cola and a brewery (see Box 23). The Support Programme for Productive Food (PARPA), launched in 2000, is another interesting case. It has five operational components supporting the activities of the Ministry of Agriculture, Livestock and Food, including the Pilot Programme for Direct Forest Support, which promotes sustainability in forest protection by granting cash payments for forest conservation activities to protect water sources. This incentive, granted to beneficiaries for a period of five years, in a way reduces the opportunity cost of a change from forest to agricultural use, and can be seen as the start of a payment mechanism for the environmental service that distributes water for household consumption, irrigation and industrial use.

In Colombia in June 2007, private enterprise, in the shape of a company marketing bottled water and in collaboration with the Ministry of the Environment, made a donation of 10 percent of the resources generated by the brand, to be used for environmental rehabilitation of the Colombian Massif through the reforestation of 130 ha and the environmental education of 500 people.

Box 23: Guatemala – the Motagua-Polochic System Water Fund

This mechanism was designed by the Defenders of Nature Foundation to promote recognition of the value of water production in the Sierra de Las Minas on the part of water users in the northern Motagua and southern Polochic region and the area thus affected (340 000 ha of forest, steeplands and plains in 14 municipalities in five departments – Alta and Baja Verapaz, Zacapa, El Progreso and Izabal). In the northern part of the range the focus is on water, health and disaster prevention, and in the southern part on water scarcity.
The design of the voluntary payment mechanism for recognition of the value of water began two years earlier and was completed in July 2005. By its very nature, it is a long-term project.
The system of financial execution is private-to-private, with a typical water user contributing payment in cash or kind to the Defenders of Nature Foundation, which administers the fund.

A process of awareness-raising, training, education and meetings with leaders of private enterprises was carried out in order to obtain their voluntary participation. Two companies, Cervecería Centroamericana and Coca Cola, have so far made contributions. Moreover, 4 of the 14 municipalities in the sphere of influence have already begun the process of recognizing voluntary donations to the Water Fund. For example, the San Jerónimo municipality has drawn up regulations specifying that part of water rate payments should go directly to forests in its catchment area. Collection of these payments has now started, and the corresponding fund has been transferred to the Defenders of Nature Foundation.

The Defenders of Nature Foundation identifies this mechanism as a voluntary donation, describing it as a "donation for environmental services", although it could also be called "corporate social responsibility".
Annual investment plans are drawn up regarding use of the funds, which are allocated according to activities, with research, forest protection, environmental education, agroforestry management and social organization as specifically designated areas.
The institutions and bodies that could potentially contribute to the fund include industrial companies, hydroelectric companies, municipalities, irrigation schemes, catchment area committees and the various private local community and fish-farming systems.
The proposal is to create a multisectoral authority known as the Water Fund Foundation to operate the fund. This body would include representatives of the various water users' associations and be completely independent of the Defenders of Nature Foundation.
The mechanism is a model suitable for replication in small catchment areas of less than 50 km^2.

Furthermore, in order to provide the fund with sufficient capital, an international campaign is being mounted to raise US$8 million so that, together with interest, some GTQ 300 million a year could be generated. Added to the GTQ 400 million from current users, this will provide a total fund of US$700 000, the amount needed to carry out the activities described (source: the Guatemala study).

Conservation concessions – private parks
Through the concession of an area for conservation, national authorities or local resource users agree to protect certain natural ecosystems in return for specified compensation. In conservation concessions, the concession holder, instead of harvesting the forest area, receives financial compensation for keeping it intact. Conservation concessions were developed by *Conservation International* and examples are found in Bolivia and Guatemala.

Indirect payments

Ecotourism
National and international (eco)tourism depends to a large extent on the quantity and quality of public (and in some cases private) protected areas that exist in a country. In many cases, forests are a country's or region's main attraction for tourists, which justifies the fees the latter pay for their maintenance (an obligatory payment). Ecotourism can also be seen as a kind of voluntary environmental or forest service payment inasmuch as the communities receive benefits in the form of additional income, training, improvement in health and education services, and steady well-paid jobs, in return for protecting the scenic beauty and biodiversity of the forests where they live. In this case, the purchasers of the service are environmental tourists and organizations that provide funds to be invested in infrastructure in these areas or support the creation of community tourist enterprises.

Box 24: Ecuador – ecotourism

It has been shown in five communities in the Cuyabeno Reserve that ecotourism has contributed substantially to the local economy, with total revenue ranging from US$15 000 to US$50 000 a year, and average per capita income from US$97 (San Pablo, Secoya community) to US$494 (Zábalo, Cofán community). Generally speaking, income from ecotourism tends to change local attitudes and behaviour, reducing over-exploitation of forests, creating fully protected zones and promoting the introduction of schemes based on self-regulation.

The experience of the Community-Based Ecotourism in the Upper Napo River Network (RICANCIE), a network composed of nine local communities in the Sumaco-Galeras National Park Biosphere Reserve, should also be mentioned. The ecotourism programme started more than ten years ago and benefits some 200 Quichua families, or about 2 000 people. About 900 ecotourists visit the reserve each year (40 percent visiting the Rio Blanco community), each of whom pays US$32 a day for transport (by road and river), food and guides. The RICANCIE central office keeps 25 percent for administration, promotion, marketing, training of the communities and construction of infrastructures. The communities receive 75 percent for river and land transport, feeding the tourists, pay to service staff, maintenance and the distribution of assorted benefits (health, educational and cultural projects etc.). Each family receives an average of the equivalent of US$375 a year, although a considerable part of this sum is reinvested in community projects. These funds thus replace other potential funds that could entail the destruction of the forests, even though not all the communities benefit to the same extent (source: the Ecuador study).

Ecotourism often incorporates the “cultural” view of the countryside that is a feature of ecotourism among indigenous communities. A readiness to pay for this service results in journeys – sometimes complicated and expensive – to the desired place, and in additional payments for access to the site, cultural elements and associated services. In this way, the beauty of the countryside becomes part of the whole tourist operation, in which tourists also pay for food, transport and lodging, and purchase local handicrafts. However the conventional tourist product does not change, but is sold and bought with a surcharge, which goes towards preservation of natural beauty and probably other more “ecological” elements, such as the reduction of environmental impact and the raising of social awareness, thus converting community tourism into an ecoproduct. In various countries, conservationist NGOs or international aid agencies have made donations to finance the establishment of ecotourism projects, in some cases run by indigenous communities.

In Guatemala, some estimates indicate that up to 30 percent of the country’s tourism (1.2 million visitors in 2006) is connected with protected areas, scenic beauty, ecotourism, adventure tourism and sport.

Similarly, Bolivia’s natural forests are the object of a growing demand among ecotourists. At present, ecotourism is concentrated in protected areas and their surroundings, and is generating substantial benefits. For example, the National Service for Protected Areas (SERNAP) has estimated that tourist activities in the Rurrenabaque zone (which contains the Madidi Park and the Pilón Lajas Reserve) generate a regional gross domestic product of US$5 million a year (source: the Bolivia study).

In Ecuador, scenic beauty is an essential element of nature tourism and ecotourism, and an important source of income for some forest projects. About 60 percent of the country’s tourism, both domestic and international, is connected with visits to natural areas.

The Ecuador study highlights the fact that tourism not only brings benefits but can also lead to situations that are sometimes complex and irreversible, as has happened with some of the communities in the Cuyabeno Reserve as a result of a lack of security, conflicts with outside partnerships and internal problems. Nor, in many cases, is it clear how much of the income from ecotourism has been reinvested in forest conservation and in countering pressure on ecosystems. Moreover, the increase in community income is accompanied by a change in consumption patterns, including a replacement of some traditional productive activities, for example the abandonment of hunting and neglect of traditional subsistence farmsteads (see also Box 24).

Payments for the intrinsic value of biodiversity

Payments that can be considered compensation for conserving biodiversity are recorded only in the case of financing from international aid agencies and NGOs for the management of protected areas. In some countries, GEF projects are being executed, with a mechanism that can be considered a payment for the value and services provided by biodiversity, although not all countries see it this way.

Payment for the conservation of a species of primate in Bolivia can be cited as an example of a specific payment for biodiversity through an endowment fund (see Box 25).

The studies indicate an expectation that payment for biodiversity conservation will expand in the future, especially at the world level.

In Ecuador, financing from the German Credit Institution for Reconstruction (KfW) is allowing communities to take charge of monitoring and control of Chongón Colonche Protective Forest. The payment can be regarded as a forest/environmental services payment and as remuneration, paid by the international community, for work carried out by the communities to fulfil a function that falls under the responsibility of the State (see Box 26).

Exemptions for the management of private parks
In Chile, the law encourages the creation of privately owned protected wilderness areas. Although these areas are to be exempt from taxes, the exemption system has not worked in practice, because of the low value of their compensation. Private investment is being carried out with individuals' or companies' own funds.

Box 25: Bolivia – payment for biodiversity

An interesting case of capitalization on the existence or intrinsic value of biodiversity is reported in the Madidi National Park, where a new species of primate was recently discovered, known locally as the lucachi monkey. It was decided to hold an internet auction of the right to give the species a scientific name, obtaining an endowment fund of US$650 million from the company Golden Palace, which won the bidding and called the new species *Callicebus aureipalatti* (= golden palace titi monkey). The fund will provide annual interest of US$40 000, which will be administered by the Foundation for the Development of the National System of Protected Areas (FUNDESNAP) to boost the park's budget and protect the monkey's habitat (source: the Bolivia study).

Box 26: Ecuador – communal surveillance and protection, establishment of forest plantations and agroforestry systems in the Chongón Colonche Protective Forest (Fundación Natura)

In Ecuador the Fundación Natura, working with KfW resources, has instituted a mechanism to pay communities for surveillance and protection of the Chongón Colonche Protective Forest (in the Guayas and Manabí Provinces). Annual contracts are drawn up with the communities, represented by their boards of trustees. Direct cash payment is made to the communities every three months, based on the costs of monitoring and surveillance. The communities must comply with internal regulations drawn up by themselves for the sustainable management of the forest, governing the harvesting particularly of such NWFPs as toquilla straw and ivory palm, but also timber. There are so far 33 000 ha of forest under protection, and the target was to reach 65 000 ha by the end of 2006.

In addition, efforts are made to foster forest plantations and agroforestry systems with proven cost-effectiveness in the border zones of the natural forest, which are productive alternatives for the communities and contribute to soil protection, while ensuring a flow of environmental services, diversifying the productive base and counteracting the expansion of extensive crops and grazing at the expense of the forest.

Three-year contracts are made with landowners in order to establish forest plantations and agroforestry systems. If the landowner has seedlings and fenced enclosures, he receives the full amount of compensation, while if he needs seedlings and/or has to make fences, the Fundación Natura pays part of the compensation in kind. The goal for the end of 2006 was the planting of 2 450 ha.

Before the conclusion of the KfW's contribution, a trust fund was set up to ensure a permanent flow of income to finance both activities and to turn the initiative into an environmental service payment mechanism, since many of the beneficiaries of environmental services generated by conserving the forest ecosystem are in fact outside it, for example water users' associations and tourists who travel in order to get to know the forest, given its good state of conservation, and who could contribute to this conservation (source: the Ecuador study).

Mitigating climate change – carbon fixation
The carbon fixation market is an environmental service for which the studies anticipate the likely establishment of a regular, global market. A distinction is made between (1) the formal market based on the Kyoto Protocol system and procedures, and (2) the voluntary market established by the private sector.

The *Kyoto Protocol* allows developed countries to reach their emission reduction targets through such flexible mechanisms as: (i) the trade in *emission reduction units* (ERUs) among developed countries (Annex 1); (ii) *joint implementation* (the transfer of certificates among Annex 1 countries in connection with specific emission reduction projects); and (iii) the *Clean Development Mechanism* (CDM), which generates *certified emission reductions* (CERs).

At present, developing countries have no obligation to reduce their emissions, but they can contribute to global reduction through CDM projects. The CDM allows developed countries to

fulfil their commitment to reduce emissions through emission reduction or carbon fixation projects in developing countries. The main aim of CDM forest projects or afforestation/reforestation projects is the capture of CO_2 from the atmosphere by establishing forest plantations or regenerating natural vegetation. Natural forests are not yet included in this mechanism.

Countries such as Argentina, Bolivia, Chile, Ecuador, Guatemala and Uruguay have recognized the possibilities offered by the CDM and have indeed created institutional bodies to handle CDM projects. However, only some have defined the basic elements for their implementation in their country, such as sustainability criteria and the definition of a forest.

Parallel with the CDM, there is an *open or voluntary carbon market*, which also responds to international agreements and markets, but is not governed by the Kyoto Protocol and its regulations. In the voluntary market, forest projects are promoted that focus on (i) carbon capture and storage by establishing planted forests and enriching and/or managing natural forests, and (ii) promotion of the conservation of natural forests to avoid the CO_2 emissions caused by deforestation (avoided deforestation).

Up to the end of 2007, no proposal for CDM forestry projects in Latin America had succeeded in obtaining approval. The CDM regulations require a very high performance level, the application of sophisticated systems to measure and monitor the carbon captured in plantations, the demonstration of additionality and control of possible leaks – complicated requirements and procedures that are an obstacle particularly for small producers. Nor have methodologies yet been approved for forest CDM projects except those concerning the rehabilitation of degraded areas.

The situation is different with *voluntary and open markets*. Various carbon fixation projects regarding plantations are now being implemented in the voluntary market. By using periodic direct payments, these arrangements work very similarly to traditional incentives that subsidize the establishment of plantations (see Chapter 5). One difference from subsidies lies in the requirement that the plantations be permanent and in the huge body of rules concerning project formulation and monitoring. On the other hand, payment is usually made in the first years after planting. The payment of carbon fixation certificates is made after the fifth year, and every five years from then on, on the accumulated "stock" or the equivalent of metric tons of CO_2. Some large-scale projects have been developed in Ecuador, including the Forest Absorbing Carbondioxide Emissions Forestation Programme (PROFAFOR), financed by the Dutch Electricity Board (see Box 27).

Box 27: Ecuador – PROFAFOR

In the case of the PROFAFOR (a private Ecuadorian company established in 1993 with support and financing from the Dutch foundation FACE), which has the objective of capturing CO_2 from the atmosphere by supporting the establishment of forest plantations, there are a number of interesting elements connected with contracts and forestry training. There is still, however, a question mark over the "permanence" of carbon capture, with regard to the moment the timber is felled – although some contracts have been extended for up to 99 years. In financial terms, it should be noted that forest revenue comes basically from the forest incentive and the future sale of timber. The forest incentive is the only one that beneficiaries will receive during the years of their plantation's existence and is delivered in quotas depending on the reforestation carried out; the greater part of the payment is devoted to current expenses. In cases of greater financial benefit, the income is US$30 a year per family, a figure representing 8 to 10 percent of the basic monthly household budget. With regard to profits from the future sale of timber, the figure ranges from US$35 to US$2 400 per family, depending on the individual case. The best economic options are found in the case of plantations in areas that cannot be used for other economic activities, that is, with a zero opportunity cost (source: the Ecuador study). See also www.profafor.com

The high cost of evaluation by certifying bodies and the relatively low price of captured carbon on international markets mean that the possible benefit of these projects remains very low. Even so, one project of this kind in Uruguay is raising the profitability of the same project "without capture" from 1.5 to 2 percent, an appreciable improvement.

A summary of the various kinds of carbon fixation initiative in Bolivia is given in Box 28.

Other services

Negotiated payments for other types of service have been developed in various countries. For example, Ecuador is carrying out activities intended to optimize existing resources and also obtain new sources of financing for its National System of Protected Areas (SNAP), through the outsourcing of services and the establishment of regulations regarding payment for the positioning of broadcasting antennas and the passing of oil pipelines through protected areas. In Guatemala, payments have been negotiated with telephone companies who want to site antennas in forest areas

Box 28: Bolivia – carbon fixation

Carbon fixation initiatives in Bolivia can be divided into three categories. The first covers a portfolio of new forest projects still at the stage of project idea notes and project design documents, which are being peddled to potential investors. These projects have been formulated according to the methodologies recommended by the Intergovernmental Panel on Climate Change (IPCC) for the CDM of the Kyoto Protocol, with the advice and coordination of the Clean Development Office of the Ministry of Rural Development, Agriculture and the Environment. The forest projects are as follows:

1. project for carbon capture through the integrated management of natural resources in the Madidi National Park and the Pilón Lajas Biosphere Reserve and Communal Lands;
2. project for massive reforestation with indigenous species and agroforestry systems in the region of the Upper Cochabamba valleys;
3. project for afforestation and reforestation in Inquisivi Province, La Paz;
4. project for carbon capture through the sustainable management of forest resources in the Bolivian tropics, Cochabamba;
5. forestry project among the communities of the inter-Andean valleys of Cochabamba.

The purchasers of the service are companies in developed countries that emit CO_2 and other greenhouse gases. The purchase of CERs or carbon fixation certificates allows them to comply with government regulations laid down within the framework of the Kyoto Protocol to reduce the emissions of gases that are causing global warming.

The second category comprises incentives to avoid deforestation in natural forests, which are not eligible under the CDM but have parallel voluntary carbon credit markets that are developing outside the Kyoto Protocol. Avoided deforestation is a less expensive mechanism than the CDM and at present aims to reduce CO_2 emissions worldwide by 20 to 50 percent in the same period that the Kyoto Protocol hopes to reduce them by 5 percent.
In Bolivia, the only carbon fixation initiative for avoided deforestation is the Climate Action Programme, which is being implemented in the Noel Kempff Mercado National Park (PAC-NKM) as a forest "activity implemented jointly" (AIJ) under the UNFCCC). The programme is financed by three energy corporations in the United States: American Electric Power, PacifiCorp and BP Amoco. The executing NGO is the Friends of Nature Foundation.
In 1996, this programme succeeded in expanding the park to a forested area of some 634 000 ha, with the aim of capturing 6 to 8 million metric tons of CO_2 over a 30-year period. Initial financing was US$9.5 million from the energy corporations mentioned above. Subsequently, the sponsors increased their investment, bringing it up to a total of US$14 million. These resources have been allocated for various uses, including compensation to enterprises affected by expansion of the park, creation of a trust fund for its protection, implementation of a community development project in the park's buffer zone with production activities (agriculture, NWFPs, handicrafts and tourism), research into the pharmaceutical potential of plants and trees, and boosting of the Government's Climate Change Office.
The country's Clean Development Office has been taking part in meetings with representatives of other countries such as Costa Rica, Nicaragua and Papua New Guinea, to promote projects for carbon fixation by avoided deforestation, a mechanism that would allow the inclusion of forests under forest management and their protection to avoid deforestation, illegal felling and forest fires. The first step was the formation of a coalition of countries in order to set up a baseline for deforestation.

The third category is a group of small forest production and reforestation projects financed by the National Programme on Climate Change of the Ministry of Rural Development, Agriculture and the Environment, which has a fund of US$4 million donated by the Dutch Government. There are currently 35 projects being implemented, 14 of which include forest activities. The beneficiaries and counterparts are mainly communities and small producers (source: the Bolivia study).

6.3.2 Obligatory payments

Direct payments

Water services
Projects for the protection of water sources mentioned in the studies are usually based on the need of local people and businesses for good quality water in sufficient quantities, on the assumption of their willingness to pay for the service provided.

With regard to payment mechanisms for environmental services for catchment area conservation and/or water protection, the communities in the lower part of the catchment area pay the owners of the upper part in order to maintain or rehabilitate forests, with the aim of maintaining the availability and quality of water in the lower area. In most cases, payments are made through the water supply account or bill.

The projects are usually prompted by municipalities, regional authorities and/or local-level public service enterprises, which charge users an additional amount in water rates, money that is then invested in the maintenance and rehabilitation of the forest cover – or the high plateaus in the case of Andean countries.

In many cases, the municipalities or NGOs promoting service payment schemes regarding the preservation of catchment areas begin them in a voluntary form. However, when the payment of a sum that is to be invested in conservation is laid down in a by-law or is a formal fee (usually for water for human consumption), it turns into an obligatory payment for users.
Another obligatory payment is based on the principle that the user of resources pays for that use and/or for their upkeep, as in the case of some hydroelectric and bottling companies.

Entrance fees to parks
Payments by visitors to protected areas are a classic case of payments for forest/environmental services, in which the environmental service to be paid for is the area's biodiversity and the resulting scenic beauty and personal recreation represented by the visit. In Bolivia, Chile, Ecuador and Guatemala, considerable resources are obtained from entrance fees to parks.

In Ecuador, the proceeds from self-management of the National System of Protected Areas (SNAP) come largely from the sale of handicrafts and the entrance fees paid by tourists. Five protected areas – Cotopaxi, Machalilla, Cuyabeno, Chimborazo and Cotacachi-Cayapas – are responsible for 88 percent of total receipts (Ministry of the Environment 2005:73). In addition, there are licence fees for certain tourist operations such as rental and permits for research and filming. In 2003, the system generated US$833 627 from self-management, which was reinvested in the protection of protected areas (source: the Ecuador study).

In Bolivia in 1999, the National Service for Protected Areas (SERNAP) established the legal and technical framework for implementation of a system allocating visitors' entrance fees to boosting administration of these areas. At present the system is being applied in three protected areas – the Eduardo Avaroa Andean Wildlife National Reserve, the Madidi National Park and Natural Area under Integrated Management, and the Noel Kempff Mercado National Park – and there are ongoing efforts to extend it to other protected areas. Receipts from the system are increasing due to the growing stream of tourists seeking natural landscapes and contact with biodiversity. The Madidi National Park receives between 6 000 and 7 000 tourists a year, while the number of visitors to the Eduardo Avaroa Reserve rose from 26 000 in 1999 to 142 000 in 2005 (source: the Bolivia study).

In Chile in 2005, 1 442 429 people, including 533 548 foreigners, visited the various parks of the National System of Protected Wilderness Areas (SNASPE). As an economic sector, tourism has grown rapidly, and available data show that 60 percent of those visiting the country did so because of the wealth of its nature. As part of its ecotourism development policy, the National Forest Corporation (CONAF) is promoting participation of the private sector in the building and running of infrastructures and the development of ecotourism services, through the concession mechanism. Parallel with this, the Ministry of National Assets has a concession system intended to stimulate investment in tourist infrastructure on State land that is not part of the SNASPE. The fees are proposed each year by the regional branches of the CONAF and analysed by the central office so that they correspond to the services each area offers and the costs of maintaining these. Another factor affecting the amount of receipts is the existence of external contributions (municipal and other). In 2007, the Manual of Tariffs for the SNASPE was updated to standardize criteria and incorporate input from international experience.

Bioprospecting
The term *bioprospecting* covers all activities concerned with the systematic search for sustainable commercial uses of the genetic and biochemical elements of biodiversity. The wide range of such elements in natural tropical forests is considered a potential source of additional income for forest management. In Bolivia, an interesting national sustainable biotrade programme is being implemented, and this includes some bioprospecting aspects. The National Biodiversity Institute (INBIO) of Costa Rica and institutes in other countries are seeking to spread knowledge of the current and potential uses of biodiversity for this purpose. Although the potential of bioprospecting is recognized, there are also major challenges in the fields of policy, sovereignty, rights of access, (intellectual) property, and equity (the distribution of benefits and costs among the stakeholders, which requires further exploration and regulation).

Indirect payments

Specific taxes, allocated to payments for environmental services
The only example is given in the Costa Rica study, where a percentage of hydrocarbon taxes has to be allocated to the National Forest Financing Fund (FONAFIFO), which uses it for environmental service payments. There are no specific taxes for this purpose in the other countries.

Other legal, obligatory forms of compensation
In general, the countries of the region have environmental laws that stipulate compensation for predictable real damage caused by activities connected with industry, infrastructure and mining. There is no common agreement on the definition of obligatory compensation. It is not clear if it is a payment for a service or a compensation to offset the negative environmental impacts of production activities. Leaving aside the precise definition, it can be an instrument that generates resources to support sustainable forest management – which is why it is included in this study.

Bolivia and Ecuador are special cases, inasmuch as they allocate resources coming from hydrocarbons to compensate for possible environmental damage.
There are various laws and regulations that can be applied; for example, Ecuador has an

Environmental Management Law, a Mining Law, a Substitute Regulation on Hydrocarbon Operations, legal provisions concerning the electricity sector, etc. However, such legislation generates few resources, and few of *these* are allocated for the management and conservation of forest resources, while the majority go directly to each country's unified State treasury.

In Ecuador, various "green" funds are in operation, based on reallocation of petroleum resources and having their own rules and regulations. Although their objective is the environmental rehabilitation of areas affected by oil companies' activities, rehabilitation of forest ecosystems has not been carried out on a wide enough scale.
In Bolivia, it is hoped that fresh negotiations on hydrocarbons will make new resources available for community forest management.

Ecuador's EcoFund is a private environmental trust fund resulting from negotiations among national and international environmental NGOs, local people, the crude oil pipeline (OCP Ecuador S.A.) and the EnCana Corporation, and contributions are half-way between voluntary transactions and obligations (see Box 29).

The disadvantage of obligatory payments is that they are of no interest to the payers, who are forced to make an involuntary investment. When a law stipulates that an energy enterprise should pay compensation for water, for example, the level of sustainability of this payment is very low. The enterprise pays, but as soon as the legal or administrative procedure involved in this obligation changes, the payment is no longer made.

Box 29: Ecuador – EcoFund

This fund was set up in 2005 with a capital of US$16 930 000, and cofinances conservation and sustainable development projects, mainly in the geographical area directly affected by the crude oil pipeline. The design and structure of the EcoFund are the outcome of a consensual process involving the two enterprises and a group of social and environmental NGOs.

Together with the Ecuador EcoFund Foundation and the Ecuador EcoFund Commercial Trust Fund, the National Environmental Fund (FAN) participates in the management and operation of the EcoFund. The FAN is responsible for technical, administrative and financial management, and for the design of methodologies, instruments, strategies etc. for the cycle of projects to be approved by the EcoFund.

The EcoFund is in its first year of operation and will have a varying duration (EnCana funds will be invested up to 2009 and OCP funds up to 2022). Sixty percent of its resources will be invested in areas along the route of the pipeline, 30 percent will go to parks and protected areas situated in oil production areas, and 10 percent will go to fragile areas of strategic importance. With regard to its priority focuses, 60 percent of the resources of each project will be allocated to conservation, 35 percent to training, and between 25 and 15 percent to research (see http://www.ecofondoecuador.org). The resources available for allocation in 2006 were approximately US$4 million. See http://www.fan.org.ec (source: the Ecuador study).

6.4 Lessons learned

Payment for goods
As was explained in the introduction, the objective of the national studies was not a thorough quantitative analysis of the production chains of forest goods. However, on the basis of existing information, it can be concluded that wood and its by-products, followed in some countries by fuelwood and Brazil nut production, are producers' main source of income.

Added value, which is accumulated starting from work in the forest, passing through sawmills and factories, and culminating in the placing of the product on the market, and adequate distribution along the various links in the production chain are areas that have not been sufficiently analysed in this connection. In the case of timber (and some NWFPs), despite the existence of an established market, the studies indicate that more work is needed on the organization, efficiency, transparency and credibility of the market, the companies and the chain. There are clear signs that in all segments of the chain, at all levels and regardless of company size, there are possibilities of improving efficiency and thus reducing costs and increasing gains from the sale of goods, especially on the part of small and medium-scale enterprises.

Current certification processes and efforts to improve the legality of forest activities (FLEG, FLEGT and the Amazonian Forest Law Application [ALFA] Initiative) indicated in the studies are important steps in creating an enabling environment for investment and payment for services. Forest certification is a market instrument that can in principle improve the competitiveness of SFM by creating greater efficiency in the various links in the chain and also in the use of financing

instruments. Interesting recommendations have been made, such as that of involving small producers in these processes (for example, small producers' associations and community-business associations).

In discussions on the timber market, the lack of transparency in the timber chain and in price formation was noted. There is no independent point of reference for prices. The creation of timber exchanges could help solve this problem. Steps need to be taken to ensure the formulation of fair, realistic prices that cover the real costs of sustainability. Timber is at present the sole product that incurs the management costs of all the existing forest functions, which is neither fair nor really sufficient.
The invisibility of some important forest products, such as fuelwood, is noted. Moreover, new markets are being developed with some pilot biotrade projects, marketing non-wood products, and these need greater promotion and support.

Payment for services
There is a great deal of activity, creativity and development in the continent in designing payment systems for services produced by forests, although there are variations among the countries. For example, Argentina and Paraguay have few payments for environmental/forest services in general, while others, such as Chile and Panama, are starting studies in this regard, and Bolivia and Nicaragua have some systems that are already in operation. On the other hand, Costa Rica, Ecuador and Guatemala already have considerable experience in these systems, and their plans are more advanced. There are great expectations regarding their potential in all countries, but with varying degrees of realism. The growing awareness of forest services and their value has not led to any substantial demand.

Current experience indicates that payment for environmental/forest services is a financial instrument with the potential to bring in *additional income*, although the associated procedures and regulations still have to be established and formalized. More information is needed on the income that such payment can generate for producers. Experience today shows that it should not be overestimated and that it is not generally enough on its own to cover the costs of sustainable management, highlighting the need for *bundling*. More experience is needed in order to assess its potential, feasibility and sustainability.

A still unresolved problem regarding payment for environmental/forest services is that of the fair price to be paid to those providing the services. Another is that of how to ensure that the providers reinvest such payment in SFM.
The value of environmental services is viewed within markets as an unknown because of the intangible nature of the services offered by forests. An associated challenge is that of the commoditization of services into tangible, measurable and saleable products. The logic of how payments for environmental/forest services actually work is not always visible or clear to those involved. It is not always clear to consumers why they have to pay for a service and exactly what they are paying for. It is not usually a simple question of straightforward payment, for there are many mechanisms that are not as direct as the relationship between the buyer and seller of goods. For example, local inhabitants find it hard to understand the service of ecological corridors or connectivity between ecosystems, whereas water services, catchment area management and carbon capture are more tangible services already equipped with instruments and methodologies, and are much easier to grasp. It is not really known what is being paid for: a service or an impact? It is considered that payments for environmental services cannot be analysed or evaluated according to the traditional view of payment for goods.

Payment instruments vary in geographical scale. Some are very localized, while others cannot operate without a global set of rules. For example, payment for water services is mainly concentrated within municipalities and involves local-level water distributors, while payment for biodiversity and carbon capture takes place mainly at the global level. Each instrument and its source needs its own appropriate management and evaluation ("One size does not fit all"). Equally, results so far have varied.

Payment for carbon capture by forests is in its initial stages of implementation, mostly promoted at the global level by rules (now being developed) within the UNFCCC. Expectations have been very high. Payments for carbon capture by forests under the CDM have so far been relatively modest, but the voluntary carbon market, introduced by some governments, international NGOs or private agents, has been operating on a broader scale.
Water payment systems, which are the best known, work mainly at the local level, under direct arrangements and with voluntary and obligatory payments. Some of the national studies indicate that the market does not yet work to maintain payment for water. To date there are (1) small-scale instruments promoted by NGOs and (2) obligatory arrangements promoted by local government (municipalities, provinces).

There are well-established national instruments covering payments for biodiversity: receipts for admission to parks and indirect receipts from ecotourism at local and national levels. Payment for the intrinsic value and cost of biodiversity management is primarily an international instrument. The GEF is playing this role (with much project bureaucracy), but it could play a larger one, provided that it is reformulated and operates as a real

international instrument for payment for environmental services.

As a constraint on payments for environmental services, all the national studies indicate the absence of an institutional framework that would give them security and juridical stability, and would establish consistent legal platforms to facilitate environmental management. Along with the many efforts being made on various fronts to establish service payment systems, it is worth considering an effort to produce a standardized legal framework.

The role of the free market and private initiative in generating service payments seems to be overestimated. At present, many of these initiatives remain on a small scale and have high transaction costs. The carbon market does not work easily, except for some examples from the voluntary market. The ecotourism market usually has the side effect of bringing about payments for forests. Obligatory payments promoted by regulations could have a much broader impact, be introduced faster and have the potential to bring about substantial changes, but in many cases their environmental and social impact is hard to assess (see also Gutman and Davidson, 2007). Payment for the supply of water is generally made obligatory by raising the corresponding charge (which is in itself a service payment, but not a market product). Many of the mechanisms for environmental service payments are not market mechanisms, but negotiated arrangements, contracts, the outcome of official regulations, or a mixture of these. This means that the role of the government in developing forest service payment mechanisms should not be underestimated – as tends to happen at present. The government, in the shape of all its bodies and at all levels, must establish rules. A favourable environment is also decisive for these payments.
In considering all the operational and development systems, the most important lesson is that there is still much to learn about payment for services, and that the sharing of experience among sectors and countries can play an important role in this connection.

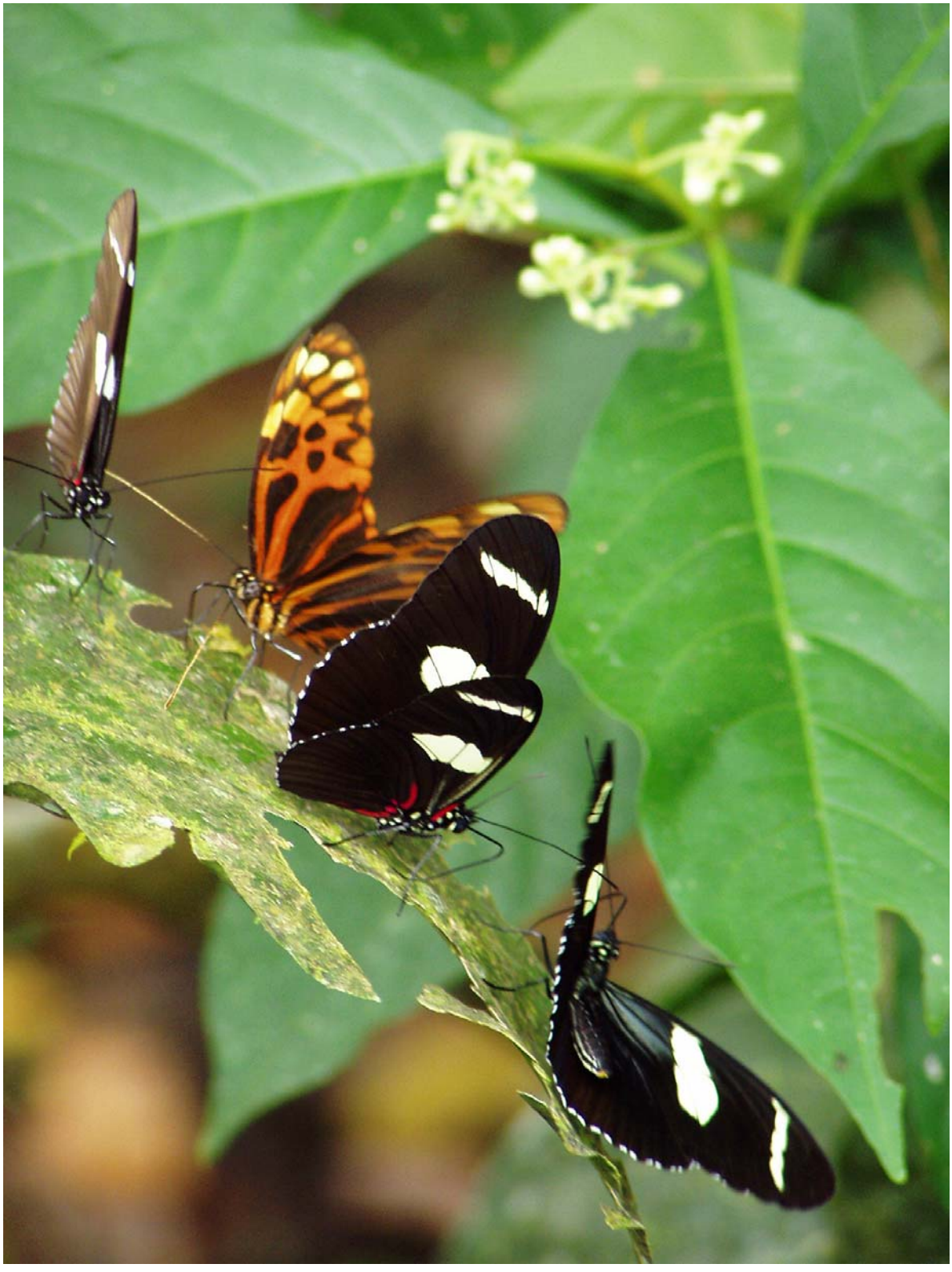
6.5 Conclusions

Payment for goods
The structure and operation of the timber market needs revising at both national and international levels in order to ensure fair prices and fair competition, allowing the costs of SFM to be internalized and rewarding responsible legal, social, ecological and technical activity.
Transparency of prices (information systems regarding prices) and of the whole chain, certification processes and the ALFA and the FLEG can help bring this about. Regulating the chain could considerably improve efficiency.

The informal sector is important in the forest production chain, especially at the national level. However, little attention is paid to it, little is known about it, and it has an unfavourable position with regard to the distribution of earnings from the chain. The community-business association, guarantee and insurance systems, and training, would improve the quality of its products and ensure fair payment for the goods produced.

Payment for services
Payment for environmental services is a developing practice, with increasing initiatives in all the countries of the region. The difference from more traditional instruments is that existing legislation and national political and institutional frameworks are insufficient for its adoption on a wider scale. There is therefore an urgent need for the creation of *legal and institutional conditions* to ensure its operation and sustainability, and also its adoption on a wider scale, while avoiding the creation of more bureaucracy.

Depending on their particular features, the various types of service have different payment mechanisms and different potential markets or justifications for making payment for them obligatory. The challenge is to make the connection between products, goods and services, and their consumer, clearer, and hence show the reason the latter has to pay for them.
The market can help to establish payment for environmental/forest services, but cannot complete the task on its own. As long as no effort is made to portray environmental services in a universal manner and turn them into a commodity to be paid for – that is, a tangible, measurable, transferable product – it will be hard to develop contracts and financial systems for a services market.
The resources coming from payments for environmental services are not sufficient on their own to make management financially sustainable and should be seen as an additional income. The full potential of payments for environmental/forest services is still unknown.
There is a felt need to disseminate success stories and good practices in order to encourage and implement schemes on a wider scale.
International aid agencies must clarify their role in this regard. Resources from international cooperation have demonstrated their use as seed funds to initiate, test and promote these instruments, but care must be taken not to create dependence on such resources. An evaluation can be made of the flows of environmental service funds provided by aid agencies, the form in which they reach forests (directly, through public or private operators etc.), and the quantity of them that are really additional and new.



7 The enabling environment

7.1 Introduction

As was stated in Chapter 2, the enabling environment is the combination of factors or conditions that promote (or affect) the degree to which financing mechanisms work, and also the attractiveness of practising, investing in or paying for SFM. It encompasses factors that operate within the forest sector, in the country and in the global context.

All the national studies concur on the importance of the political, legal, institutional, economic, social and environmental context, stressing that these elements can be a major help or hindrance to the effectiveness, sustainability, equity and impact of financing mechanisms. Paying due attention to the various factors involved in the environment is considered an indispensable requirement and a key element in the development and implementation of a comprehensive forest financing strategy. Section 7.3 gives an overview of the main elements mentioned in the national studies as conditioning the environment, illustrating them with examples taken from the studies. Sections 7.4 and 7.5 respectively give some lessons and conclusions to be used as a basis for developing financing strategies.

7.2 Overview of the main elements affecting the environment

The following elements were identified in the studies as important factors to be taken into account in developing an enabling environment for the financing of both investments and payments:

1. policies and the political context
2. legislation
3. institutions and governance
4. the national economic and financial environment
5. social, cultural and environmental aspects
6. the international environment.

Policies and the political context

With varying degrees of enthusiasm and participation, Guatemala, Nicaragua, Panama, Paraguay and other countries have each formulated a forest policy, be it known as a national forest programme, a national forest action plan or a national forest development plan. In other countries, such as Bolivia, Chile and Uruguay, forest policy has been expressed more through forest laws than through a specific plan.

As an illustration, the processes of formulating and implementing forest policies in some countries of the region are summarized (in no particular order).

In Paraguay, the National Forest Action Plan was formulated and equipped with an adequate financing strategy – although the national study notes the absence of the political will to implement it. The Forestry Panel, comprising representatives of the various public and private actors and NGOs active in the sector, is seeking to change the situation and reverse the degradation of the country's forest resources. These efforts principally involve *improvements in land use and tenure*, especially in areas where the frontier of mechanized agriculture is advancing, and the definition of appropriate *principles and criteria* for SFM in these areas. No firm political decision has yet been achieved, and the financing needed to put the actions anticipated in the National Forest Action Plan into practice has not yet been obtained. A forest development project is now being formulated, supported with probable financing from a World Bank grant. Support is also being received from the NFP Facility (source: the Paraguay study).

In Bolivia, formulation of forest policy concentrated on implementing the country's new Forest Law, which focused particularly on timber production from natural forests for export, without adequately recognizing the development potential of non-wood products, plantations and environmental services. The new government has drawn up a National Development Plan, which includes a Forest Subsector Development Plan. The policies accompanying this plan notably include the development of a broad productive base, changing the State's previous priority focus on large enterprises. Financing and incentivization

efforts will now concentrate on single-person, micro, small and medium-scale enterprises. In rural areas, the policy will be closely linked to the potential of forest management, forest plantations and the productive development of biodiversity in protected areas for inclusive ecotourism and associated activities. In urban areas, it will aim at empowering small producers of wooden products who are part of the final links in the timber production chain. The forest sector is recognized as generating jobs and surpluses, with a consequent need to boost communications, transport, financial services and technological innovation (source: the Bolivia study).

In Panama, an official policy document was published in 2003, endorsing the need to improve sustainable forest management. However, the absence of a specific mechanism enforcing its implementation prejudices the viability of carrying out the actions set out in the policy. The National Environmental Authority (ANAM), in collaboration with FAO, is therefore formulating a National Plan for Sustainable Forest Development, with a view to making application of the policy more viable. However, favourable conditions still have to be created to enable forest authorities, within the ANAM, to play a leading role and facilitate the comprehensive, harmonious execution of the activities planned under the forest policy (source: the Panama study).

It can be said that Argentina, Chile and Uruguay have had stable forest policies for the past 30 years, especially with regard to private property, the promotion of planting, business activity associated with opening up to markets within a free-trade economy, and the promotion of exports and national and foreign investment. In Chile's case, this has allowed the development of a forest sector that plays a substantial role in the national economy and has a worldwide reputation. However, there are still problems in these countries concerning indigenous forests – as is increasingly seen in Argentina in the form of deforestation and changes in the use of forest land.

In Uruguay in the 1960s, the Commission for Investment and Economic Development (CIDE) carried out an agro-economic study that divided land into various zones according to its productive capacity, identifying more than 20 percent of the country's area as suitable for forestry. This set off a discussion on appropriate strategies for developing the forest sector in a mixed farming country. This process, involving State bodies, professional associations, producers' unions and environmental NGOs (such as Friends of Trees), led to parliamentary approval of the current Forest Law (Law 15.939 of December 1987), with the consensus of all the political groups represented. This legal framework provided the spur for establishment of the enabling political and legal environment essential for protecting indigenous forests. This increased the area by more than 15 percent and encouraged investment by other sectors of the economy (both national and foreign) in forest planting projects. Forest plantations thus grew from 150 000 ha to more than 800 000 ha, with a strong industrial timber component, generating not only export-focused agro-industries, but also a demand for forest-based services. The various political groups that have come to power in the past five legislatures (20 years) have not made any substantial changes in forest legislation, since the latter is a consensually agreed State policy, a fact that may be one of the main principles underlying the success achieved (source: the Uruguay study).

All the national studies stress that the national forest policy is not the only one affecting forests and their financing, for agricultural and livestock policies in particular also have a major effect on forests. The expansion of such commercial crops as soya – but also deforestation as a result of settlement (whether planned or spontaneous) in a context of little land use planning and insecurity of tenure and allocation – leads to a lack of confidence and has an adverse effect on investment and payments for forest management. There are conflicts between forest policies and policies regarding infrastructure, macroeconomic development, agricultural expansion and, more recently, bioenergetic projects – a situation leading to a sense of insecurity in the forest financing sphere.

On the other hand, the lack of information and knowledge concerning the financial and macroeconomic opportunities presented by the forest sector must also be taken into account. Although the present project did not include an in-depth survey of existing financial and economic policies applicable to forests, the national studies give the impression that policies that could promote forest financing do in fact exist but that it has not been possible to exploit them.

Moreover, although the continual changes in forest policy decisions are sometimes intended to combat illegal felling and the process of deforestation (for example, by means of sudden declarations of total felling bans), they send investors an unfavourable message, increasing the sensation of economic risk within the country and creating a climate of instability regarding national rules and regulations. The major problems of a lack of firm decision and stability, combined with the low political priority given to forests, have hampered the development of SFM.

Legislation

The national studies report extensive legislation to implement SFM. The main problems noted

include particularly the need to apply this existing legislation and consolidate the legal framework concerning land tenure and allocation. Juridical insecurity of land tenure, coupled with the practice of deforestation to demonstrate economic use of land with the sole aim of consolidating tenure, is a key factor hampering the obtaining of finance and the application of financing instruments.

Another major problem that seems to affect forest legislation is the isolation of the sector. The legislation of other economic sectors (agriculture, mining, finance) affects forests. Similarly, forest-sector legislation is not coordinated with the legislation of the other sectors.

Compounding this situation is the fact that forest staff have little knowledge of financial legislation (while those in the financial sector know little about forest legislation), so that they lack instruments that would enable them to promote forest activities. The insufficient dissemination of information on financial legislation among actors in the forest sector results in extensive ignorance about its existence and application.

Institutions and governance

The studies indicate that the working of this whole legal framework or political and legislative system depends on the existence and functioning of responsible public, private and civic institutions within and outside the forest sector, and whether these institutions are efficient and well organized at both central and local levels – a situation not found in most of the countries. The studies list various current shortcomings concerning the governance and institutions of the forest sector and of the countries in general, including excessive bureaucracy, corruption, lack of transparency and participation, low legitimacy and lack of public confidence, identifying these as factors increasing the risk and uncertainty of forestry and its financing.

Official forest institutions are generally hierarchically poorly positioned in the system of government and suffer from competition from other public institutions because of poorly defined institutional responsibilities and conflicting sectoral laws. In addition, they are penalized by an inefficient internal bureaucracy, a permanent lack of sufficient human, technical and financial resources, and the serious job insecurity of their executives.

Devolution and decentralization processes have been launched in almost all the countries. Although these are considered important for the sound management of natural resources, it is observed that in various countries government has been severely weakened by the creation of new centres of bureaucracy (with neither training nor resources), resulting in a serious disincentive for forest development.

The above observations refer to State forest lead agencies, but the concept of effective institutions includes other governmental and non-governmental actors who indirectly influence the financing, effectiveness and competitiveness of the forest sector. Among these, the national studies refer mainly to education, training and research bodies, whose situation is unencouraging and expectations low, constituting a major constraint on the development and financing of SFM.

Some of the national studies note that large groups of forest stakeholders – small and medium-scale producers, farming communities and indigenous groups – tend to be ignored because of their disadvantaged situation with regard to communications and negotiation, partially explained by their low level of organization and their limited integration with the market and the formal forest sector.

The national studies make special mention of the weakness of forest information systems in the region, which is a serious obstacle to producing consistent analyses to support foresters and policy-makers in the administration and sustainable management of forest resources. In the first place, there are no full, reliable statistics. Information from companies and banks is usually confidential and hence inaccessible. Government statistics and data from national and international cooperation agencies are usually hard to obtain, not necessarily reliable, overly general and not detailed enough for satisfactory interpretation. In the second place, the fact is that there is simply very little information, and also little transparency with regard to financial aspects, a situation that detracts from the economic, social and environmental importance attributed to the forest sector.

In some countries, national – and sometimes regional – discussion or negotiation panels have been created within the context of NFPs, while “timber clusters” have been created in others. The latter are intended to design appropriate strategies to improve the competitiveness of the forest sector, by identifying the constraints hampering its development and seeking to overcome these, while maximizing the sector’s strong points. The discussion and negotiation panel within the framework of an NFP aims at a broad-based participation in the design and implementation of the NFP in question.

Experience with such discussion panels in the context of NFPs and timber clusters is recent, but several of the national studies state that they have

led to a greater understanding regarding the implementation of forest policies.

The national economic and financial environment

An important factor mentioned in the studies as hampering effective forest development is the lack of State investment to promote and make this development sustainable, just as the State favours agricultural and livestock activities by facilitating the allocation of land, planting, harvesting, marketing etc. As indicated in a previous section, the under-representation of the forest sector in current calculations of GDP is seen as justification for limiting and virtually ignoring it in the allocation of public funds.

Financial limitations and the lack of economic measures favouring forest activities represent serious obstacles to hopes of reform and the implementation of the necessary policies for sustainable development. Scarcity of funds, overly bureaucratic procedures and the high cost of money lay a heavy burden on the forest sector and restrict the possibilities of any substantial increase in forest investment. Basically, these factors prejudice any incentive for the management and conservation of indigenous forests, so that a reorientation of policy regarding the rural sector is needed in order to achieve a scenario more propitious to the desired change.

On the other hand, the national studies indicate the importance of the forest sector as a source of employment and income, especially for small and medium-scale producers (see Box 30).

Box 30: Employment in the forest sector

In Paraguay, it is estimated that the forest sector at present provides direct or indirect employment to more than 200 000 people.

In Guatemala, it is estimated that the subsector generates 80 000 direct and 320 000 indirect jobs a year for the wide range of activities in the spheres of administration, management, education, industrial processing and marketing. However, if other activities connected with agroforestry farms are considered, such as those growing coffee, cocoa, cardamom and rubber, the number of jobs is much higher.

In Nicaragua, according to the National Central Bank, some 3 000 jobs are generated by forests, and between 10 000 and 12 000 by the workshops of small and medium-scale furniture and carpentry enterprises (and it should be noted that official figures are conservative).

In Bolivia, the timber industry (including the forest, primary processing and manufacturing stages) generates 90 000 direct and 150 000 indirect jobs, while the Brazil nut industry accounts for 40 000 for harvesting and 7 000 in associated industries (both temporary and permanent jobs).

In Ecuador, according to rough estimates, the forest and timber industry generates about 177 500 jobs, while the Timber Industries Association (AIMA) reports that the forest and timber sector provides approximately 200 000 direct jobs in forest labour, industry, cottage industry and handicrafts, representing 5.6 percent of the country's labour force. It is also estimated that about 100 000 people depend indirectly on the sector (sources: the Paraguay, Guatemala, Nicaragua, Bolivia and Ecuador studies).

Various national studies observe that the national forest production system is at present fragile and vulnerable. Forest use tends to lack any clear criteria of sustainability and equity. Usual forest harvesting practices, under which timber companies purchase timber from intermediaries, farmers or holders of forested land or forest plantations, are partially to blame for the lack of sufficient investment in sustainable management practices. The technology used is obsolete or fairly unproductive and inefficient, thus increasing operating costs and partly explaining low profitability. In practice, natural forests are seen simply as a cheap source of wood with a view to a rapid return and no motivation for reinvestment in order to ensure fresh production in the future.

The main actors – small and medium-scale producers, farming communities and indigenous people – have a low standard of living, despite their natural resources, while the wealthier actors – intermediaries, timber purchasers and a few members of indigenous and farming communities – pay low prices for standing wood, which they then sell to processing and exporting companies. Intermediaries (*coyotes* in Central America) act as links between forests and industry, and finance harvesting and transport, since small forest producers seldom have the necessary financial resources. The informal system results in distortions in the timber market. The legal, political, economic and financial conditions of small producers are different from those of large businesses. The solution to these problems is not to eliminate intermediaries, but to enable small and medium-scale producers to gain access to financial investment and the necessary training to sell and enter into equitable partnerships that build on both parties' strong points.

The national studies note that family-style business management, which predominates under current conditions, is unattractive to outside investors, and that there has been no continuity or innovation in establishing horizontal and vertical productive partnerships or local productive networks, although efforts have recently been started to establish the latter.

In almost all the national studies, it is noted that the forest sector has little importance on the national political and economic stage. Although environmental regulations have developed substantially, economic and financial instruments have played a marginal role in formulation and decision-making, and have not been integrated into national economic policy. This is partially explained by the low participation of the environmental sector in general, and not just the forest sector, in GDP, in which it generally reaches between 0.5 and 1 percent in the region. With such percentages, the macroeconomic framework and environmental and forest policies have less weight than other sectors. National accounting systems are outdated, still using a calculation model that was developed in the past and does not reflect the full multifunctional range of the contributions the forest sector and forests make to national GDP.

Sociocultural and environmental aspects
The studies indicate society's growing general awareness of the importance of forests, as well as a revived recognition of the importance of forests in large areas of the world for people both within and outside them. This trend is seen in the growing significance of service payment systems and citizens' increasing participation in forest issues. Participation and consensus are considered key factors in establishing the required environment of confidence. The participatory processes that have been developed in such countries as Guatemala and Uruguay have helped the creation of a more favourable environment. Panels (supported by NFPs) are highlighted as instruments to ensure coordination and consistency in formulating and implementing consensual forest policies. Private associations of the various categories of actor, who can play an active role in formulating, implementing and monitoring financing strategies, are also needed. In some studies, the social and cultural diversity within the individual country is noted, with the consequent need to pay due attention to social and cultural aspects in creating the enabling environment.

The international environment
Various studies highlight the importance of the international context as a result of globalization and note that this is creating a new environment for the forest sector that cannot be ignored in the analysis and development of an enabling environment for forest financing.
The requirement of SFM is increasingly determined by international agreements and processes (UNFF, CBD, UNFCCC, ITTO, CITES, WTO, FLEGT etc.), and there is also a growing trend to subregional forest coordination and cooperation, for example within the framework of ACTO and CCAD. Thus, the Central American region (with the Lepaterique Process in the 1990s and now with the FLEG) and the Amazon region (with the Tarapoto Process in the 1990s and now with the ALFA Process) have established frameworks of criteria and indicators for SFM which are intended to govern formulation and application in the specific situations of their various countries in order to improve management.

National markets for forest products are also increasingly being integrated into international markets. The European and United States markets, which are important for processed wood, require a higher quality both of wood and of its production process, supported by forest certification and other new market instruments that encourage more responsible forest enterprises. Asian markets, especially China, Korea, Vietnam, Taiwan and India, are starting to open up and are importing increasing quantities of timber. It is noted that national forest enterprises must make efforts to improve their technological capacities and the sustainable management of their forests, since these factors will be critical in maintaining these markets in the long term.

Some countries have built up considerable experience and made major progress in certifying the management of tropical forests (Bolivia and Guatemala), and also with regard to some other products (such as Brazil nuts produced from wild trees in the Amazon forests). This export-focused model has been successful in responding to the growing demand of the international market. However, the national studies note that this experience has not been enough to produce the desired changes in the forest sector in general in terms of the modernization and competitiveness that would generate confidence and therefore increase the previously minimal investment in the sector.

The studies also note that international financial markets are increasingly including environmental aspects in their activities.

7.3 Lessons learned

Policies and the political context
It can be said that every country does have a forest policy framework, and although this may have some lacunae, it could be enough for the implementation of SFM. With regard to the effectiveness of application, a distinction must be made between theoretical policies (written and enunciated) and real ones (those that are or are not applied). Moreover, this policy framework seldom encourages the definition of clear financing strategies. Only a few countries have considered certain financial sources, instruments and mechanisms for their forest sectors.

With a view to creating an enabling environment, perhaps the political will should be taken into greater account than formally enunciated forest policies. The failure to adopt policy decisions appears to be the main factor responsible for the non-application of policies, laws and financial instruments concerning forests and forest management.

Legislation
There is also ample forest and financial legislation in the region that can be adapted to make SFM and its financing viable without immediate need for any new legislation. It would therefore be best to update existing legislation with regard to both the forest and financial sectors, avoiding so far as possible the formulation of new laws or norms.

Special reference is made to security of land tenure. It is considered vital to link security of tenure with forest production and with investment in the sector.

Foresters' and financial experts' mutual lack of knowledge of each others' legislation restricts the application of efficient, effective financing mechanisms and the building of mutual trust.

On the other hand, it is important for legislators to bear in mind that when they establish an incentive for livestock or agriculture, it almost always turns into a disincentive for SFM. When drawing up legal frameworks, it is therefore vital to ensure that these are more nuanced, with greater coordination among the various sectors that will be affected.

Institutions and governance
One of the fundamental conditions is the existence of a strong, transparent institutional context that encourages broad local participation and coordination among the institutions of the sector and with other sectors, so that their practices can be directed towards sustainable development. The demonstration of good governance[23] within and outside the forest sector in an atmosphere of confidence and credibility is a vital condition. Despite existing limitations in this area, progress is being made in institution-building (especially decentralization and devolution). The clusters and national intersectoral discussion and dialogue panels mentioned above are helping to enhance governance.

The lack of effective institutions affects not only the State. A private forest sector that lacks unity, the capacity for joint action, a common vision and unifying leadership, and has poor representation of the various forest actors in the production chains – as is the case in most of the countries – is not at present a reliable negotiating partner for the government, or for investors or society in general.

In order to facilitate the development of financing mechanisms, adequate information is needed to help build up investor confidence. The availability and sharing of information is crucial and encourages the necessary transparency in decision-making.

[23] The following are considered key principles for good governance: (1) legitimacy; (2) transparent accounting; (3) participatory decisions; (4) efficient and effective performance; (5) functionality; and (6) a stable macroeconomic situation.

The national economic and financial environment

The current contribution of the forest sector, and forests in general, to national GDP is greater in real terms than the amounts recorded in financial terms. Such contributions as those of the energy sector (fuelwood) or the environmental services that forest stands give to society are not included in the accounting. The services provided by forests are often included under other headings in the national accounting system (for example, the resource flows generated by forest tourism). If the forest sector's real contribution to the economy is to be fairly represented, these services should be included. A more accurate model and assessment that include not only timber, but the various other forest goods and services, would substantially increase the share of the forest sector in national GDP, which would in turn undoubtedly boost the economic and political standing of the sector.

Clear macroeconomic policies, such as access to credit and subsidies, a favourable tax environment and a financial policy and focus that seek to support responsible forestry, are key factors. Adequate communication, transport and electricity infrastructure is also needed, for its current absence is a major obstacle to attracting investment.

Social, cultural, technical and environmental aspects

The establishment of the enabling environment must take account of the social, cultural and environmental diversity found in the individual country. Each situation has its own particular features and needs. For example, the structure, possibilities and requirements of investment, payment and resource flows vary widely between small and large producers, and also between indigenous people and settlers. The harvesting of wood from natural forests requires a different financing structure from that for conservation, while the management of plantations requires a different one from that for the management of natural forests. Moreover, there are vast areas of degraded and secondary forest that will need a package of incentives for their rehabilitation.

Participation and dialogue are key elements in creating the necessary environment of confidence. The participatory processes that have been developed in such countries as Guatemala and Uruguay have helped to create a more enabling environment. The dialogue and negotiation panels (multiactor, multisectoral and multilevel) in particular have constituted an instrument (supported by the NFP) to ensure coordination and consistency in the formulation and implementation of forest policies. Similarly, private associations of the various categories of actor (like the timber clusters) need to be established, which could then play an active role in the formulation, implementation and monitoring of NFFSs.

The international environment

As a result of the globalization process, the international environment is becoming increasingly important and having an ever greater influence. The international market has opened up, and environmental conventions are creating more and more instruments, criteria and rules that affect the national environment and can represent opportunities for SFM.

Negotiations within the context of UNDP, CBD, ITTO, CITES and UNFCCC, together with the WTO and regional trade agreements (the Central American Free Trade Agreement [CAFTA]), are leaving their mark on national policy and on the investment and payment environment. Present discussions on climate change and avoided deforestation (REDD) may in particular help to shape a broader enabling political environment.

Greater participation in the more demanding external markets would require development of a set of high standards for wood products for export, with incentives and taxes depending on species and their added industrial value. Certification and the FLEG processes are international and national processes that the countries of the region can use to boost their forest control structures. Processes such as the ALFA (in Amazonia) and the FLEG are helping to establish the necessary environment of business confidence. Moreover, the increasing demands for sustainability that international financial institutions are setting as conditions for their investments can constitute a further incentive for forest enterprises to adopt sustainable practices.

Criteria and indicators of an enabling environment

The factors constituting the conditions of an environment are many and complex. Moreover, many of them are hard to influence and change in the short term, and therefore act as constraints.

To help appreciate the key elements and the working of the environment, it is considered important to draw up guidelines concerning criteria and indicators; these will then assist each country in defining objective parameters to measure its sufficiency or deficiency, with a view to improving performance and reaching levels that will ensure greater success for its NFFS. Each country can establish its own specific criteria and indicators, adapting and refining them in collaboration with the actors concerned. There are already some indicators regarding the attraction of forest investment that could provide pointers (see, for example, Rente Nacimento and Tomaselli, 2005).

7.4 Conclusions

The potential for developing an enabling environment for the financing of the forest sector is positive, inasmuch as there are already sectoral policies and legislation that seem sufficient to start establishing institutions that can then be strengthened. However, this potential cannot be sufficiently exploited because of a lack of political will, commitment and stability, a failure to apply legislation, control mechanisms that seldom work, and forest institutions that are weak, hierarchically poorly positioned and cannot fulfil their mandates.

The existence of strong, transparent governance and institutions, thus encouraging broad local participation and coordination among institutions inside and outside the forest sector, and the existence of legal security of land tenure, are key factors for creating a climate of long-term confidence and credibility.

There is a general lack of consistency in sectoral policies. It may be concluded that the countries that have had greater success than others are those that have created the conditions for forest activities (which by definition are long term) as State and not government policies, or sectoral planning in the form of national intersectoral forest programmes with a broad participation of key actors and sectors.

This means that the lack of resources is not always the main obstacle to obtaining greater financing and implementing investment and payment financing mechanisms. A major role is played by the political, legal, institutional and socio-economic context (the enabling environment) in which investments and SFM are carried out.

On the other hand, the absence of an enabling environment does not mean that nothing can be done. The situation in the various countries shows that there are always the possibilities and minimal conditions to make a special mechanism work to some degree. The more conditions of an enabling environment can be achieved, the more the working of the mechanisms will increase in terms of institution-building, sustainability, effectiveness, credibility, confidence and scale of application. It must therefore be accepted that the financing mechanisms that are created do not always operate in ideal conditions, but rather in actual conditions, and that they need to adjust to this reality in order to develop further.

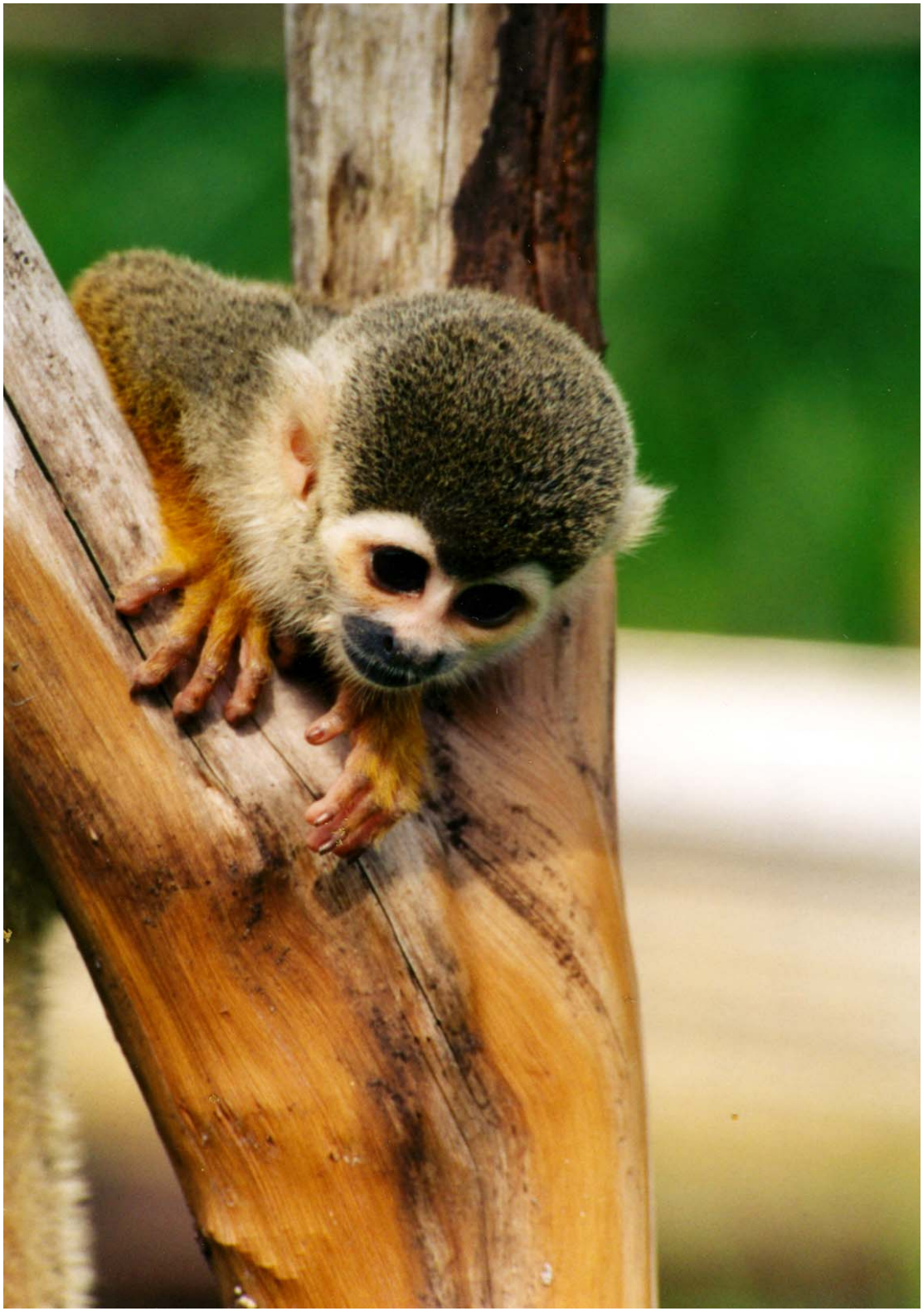
The failure to recognize the real contribution of the forest sector and the many values of forests to national development and incorporate them into national accounts are a reason and indicator of the low political and economic importance ascribed to the sector.

The international context is an increasingly important element to be taken into account in developing an enabling environment for an NFFS. Such consideration entails analysis of international market trends and the conditions to be met as a result of international regulations and negotiations.

The countries can benefit from some guidelines concerning criteria and indicators, which will help them identify the key factors and understand how the enabling environment will develop and operate within their particular situations and in the context of their particular priorities.

Part 3

Towards a national forest financing strategy and main conclusions



8 Towards a national forest financing strategy

8.1 Introduction

The present chapter returns to some of the main challenges identified in the course of this work: How can a national forest financing strategy (NFFS) be designed? What should its objectives, principles and elements be? And with whom and how best can it be formulated and implemented, taking the guiding principles of sustainable forest management (SFM) as a framework.

On the basis of the conceptual framework presented in Chapter 2 and the information and lessons provided by the national studies (Chapters 3 to 7), we use a deductive approach to draw conclusions regarding the conceptual basis, priorities and main components that will act as general guidelines in the formulation of an NFSS and its subsequent implementation.

The strategy is seen as a process and not just as one more publication. In our view, a strategy is an overall framework that provides general agreed guidelines, which can then generate such specific elements as legislation, policies, resources and mechanisms. The strategic elements for financing must be broad and set within a comprehensive process that takes account of professionals within and outside the sector and encompasses a broad search for opportunities.

8.2 What is understood by an NFFS and why is it needed?

A *national forest financing strategy* is understood as the combination of measures and arrangements for the creation of an institutional, political, legal, socio-economic and financial framework (the enabling environment) agreed upon with those most closely involved within and outside the forest sector. It establishes the criteria and guidelines for obtaining and channelling financial resources. Financing mechanisms (composed of sources, instruments and operators) are identified, coordinated and implemented with a view to promoting investments and payments for forest goods and services. The strategy encompasses the public and private sectors and the local, regional, national and international levels, pursuing the objectives of the national forest programme (NFP) and the general forest management of the various target groups in a sustainable manner.

Why is a national strategy needed?
The previous chapters have shown that, in terms of perspectives, policies and practices, current forest financing systems in the countries studied are still insufficient to provide the conditions for halting deforestation and degradation processes, promoting rehabilitation and (re)planting of degraded land of forest origin, and expanding the areas of forest already under sound management.

The national studies indicated that there is a wide range of factors, many of them complex and persistent, hampering any improvement in financing. However, they also noted a wealth of creative new initiatives, activities, experiments and ideas in the various countries, offering opportunities and challenges for achieving greater development of forest financing. Analysis of the main problems and opportunities summarized in section 2.3 shows that the factors involved are not only political and institutional, but also sociocultural, economic, financial, technical and ecological, and that they can affect the current state of forest financing in local, national and international contexts.

The previous chapters also confirm that financing mechanisms work better when they are set within an enabling environment of political, institutional and socio-economic conditions, and also form part of a set of complementary political and/or legal measures to foster SFM.

In our opinion, breaking the vicious circle of difficulties and responding to both challenges and opportunities requires broad, comprehensive approaches and strategies, with measures focusing both on forest management and managers and also on financing mechanisms and factors in the general environment. A strategy must take account of the variety of actors in the sector and the various levels on which development of the sector takes place. The strategy must be integrated with the NFP and national development strategies, and recognize the importance of the intangible services provided by forests, as well as their more tangible products. It must take account of the existence of various types of forest and forest manager, the goals of use and

management, the environmental and socio-economic conditions, and the specific solutions that all these aspects may require.

Countries where an NFP, or some comparable process such as the formulation of new legislation, is being implemented already have frameworks into which a financing strategy defining the country's forest future can be set. The strategy can be seen as the financial branch of the NFP. Within the NFP (or equivalent framework) and following its principles, the strategy is defined as a set of multiactor, multisector processes, which can also represent added value for an NFFS.

Furthermore, an NFFS can constitute a major unifying and linking framework and point of reference for efforts under international conventions and agreements (such as UNFF, UNFCCC and CBD) for the creation of international forest financing mechanisms and approaches. It is important to ensure that the functions and methods developed in this connection are appropriate to the situations and needs of the individual country. An NFFS can boost the country's capacities and effectiveness in terms of achievement of adequate SFM financing systems. Moreover, it can be assumed that the existence of a broad, comprehensive NFFS increases a country's capacity to anticipate and accommodate the development and management of the financing available in the international sphere, not only under conventions, but also within international capital markets and in the context of international private-sector initiatives (NGOs and philanthropic bodies).

8.3 Strategic objectives and approaches

The central argument formulated in this work (see section 2.3 above) on forest financing is as follows:

> *When forest do not have a high enough financial value or an opportunity cost satisfactory to the producer, they tend to disappear.*

The search for opportunities to obtain greater forest financing in a country can lead to the formulation of the following as the general objective of an NFFS:

> *To create the mechanisms and conditions for expanding and diversifying the financial basis of SFM, making the existing financing system more efficient and complementing it with new and/or innovative opportunities.*

The key factor in this formulation is recognition of the variety of forest types and conditions, and also of the situations and objectives of the various target owners and groups, indicating differences in the type of external financing and in solvency and liquidity requirements, and stressing the need for a package of specific financing mechanisms for investments and payments appropriate for each situation.

Strategic approaches

To achieve the objective, the following strategic approaches are distinguished within the NFFS:

Increasing competitiveness and attractiveness for investment in SFM by:

1. seeking and obtaining sufficient (net) profits through:
   - the creation or strengthening of mechanisms to attract, stimulate and obtain adequate financing for investments (better access, better conditions and reduced costs), turning unsustainable production into sustainable management, promoting better practices and technologies, increasing the productivity, efficiency and effectiveness of operations and investments, and *reducing costs*;
   - payment for other forest functions (services and goods other than timber) and a better organization of production chains, with fair payments and prices that reflect sustainable production and *increase income*;

2. reducing risks and uncertainty through:
   - mitigation of the risks associated with forest management itself and long- and medium-term investment and production time frames, and biological risks;
   - creation of mechanisms that mediate between long-term forest management and the expectations of forest owners or holders and investors regarding the generation of medium- and short-term returns;
   - improvement in the governance and enabling environment of the sector (strong, efficient institutions, an appropriate legal framework, an enabling environment, intersectoral policies on the use of public and private land);
   - improvement in the image, status and situation of the forest sector, while meeting the need for more efficient public and private forest services (a new forest culture);
   - greater participation of the various stakeholders in the proposal, monitoring and modification of the standards and conditions of mechanisms for the financing, protection, guarantee and insurance of investments.

At the same time, it is important to *counter the distorting influence of other sectors and/or land uses* (for example, unsustainable forest, agricultural and livestock uses) in order to avoid the ill effects of incentives and policies in related sectors. Although this aspect is important, it was not the focus of the present work and is therefore not dealt with in any detail.

8.4 Basic considerations and criteria

An NFFS can work more effectively when it is based on the following conceptual and operational considerations:

- Taking the *multifunctional nature and multiple, sustainable use of forests* as a basis for the optimization and comprehensive management of this resource. According to this principle, all the functions that a forest can provide, whether goods or services, and not just wood, should be taken into account as opportunities to generate additional and supplementary income. This would include NWFPs, water supplies, soil and water conservation services, ecological tourism and the protection of biodiversity as an important asset.

- Considering the development of mechanisms – sources, instruments and operators – to finance investments and payments for goods and services – as *a single comprehensive package* making up two sides of the same coin. Investments are made with the end goal of increasing and diversifying net returns from forest management. Similarly, extra income generated by the sale of goods and services enables forest managers to increase their capacity to (self-)finance their investments in SFM.

- Promoting *bundling*, in other words, the combination of instruments, operators or means of investment and payment in order to achieve additionality and synergy among them. The need for bundling is based on the experience of current management, which entails income from only one or two functions – and is in many cases not financially sustainable.

- Recognizing the *legal framework*, whether in the form of laws whose force is recognized by all the stakeholders in the sector, or in the form of standards and resolutions that are inadequate or obsolete and therefore need revision, mainly with regard to their application.

- Because of their particular importance, the *conditions of the financing environment* must be assessed, together with their degree of propitiousness for the definition of an NFFS. The formulation of an NFFS requires a minimum institutional and political context in which it can function. The problems and opportunities assessed in this process are the starting point and determine the degree of development and its progress toward the future.

- Like an NFP, an NFFS needs the existence of *principles of participation and process*. Thus, it is hoped that the financing strategy would be started and continued as a process of dialogue, sharing, coordination, communication and joint construction, with strategic partnerships among those involved both within and outside the forest sector. The term “strategy” should be understood in the first place as an agreed process that reflects particularly the commitment, participation and joint action of the parties involved. It is not necessarily an official document, but it may obviously contain guidelines. A space for intersectoral, multiactor, multilevel dialogue can be created in order to achieve a shared view of forests and an NFFS. The principles of NFPs envisage the establishment of negotiation and discussion panels. It is particularly important to establish links between the forest and financial sectors, which are still cut off from one another today, with little mutual knowledge.

- Guaranteeing the participation of society – especially those who live and interact with forests – and particularly in the implementation and monitoring of activities, is of fundamental importance. Such participation is also necessary when defining the *basic principles* concerning forests, on which society as a whole must agree: What should be done with which forest? What should be protected, what used, and why? Conservation and production must be linked. Financing strategies must not be confined to the national level, but must also take account of the importance of local instruments and those operating among communities. Small producers must be one of the priority target groups in an NFFS.

- Promoting the *equitable internalization* of the real costs and economic, social and ecological benefits along the forest production chain. This principle means that standing forests (growing stock) must be given a value, which is not the case today for natural forests in many tropical countries, where forests are still viewed as a resource to be extracted with a residual value diminishing to zero, without considering or internalizing the costs of their conservation and sustainable management. In addition, costs and benefits must be distributed equitably along the production chain, with an adequate financial basis for SFM, which is currently the weakest link in the chain.

- Taking account of the *particular features of each country*, with its history, current situation, cultural aspects, public and private institutions and legal context, together with a rough estimate of how its natural resources are evolving, as a basis for anticipating the most likely future situation and the potential for action. The formulation of an NFFS must be based on the individual country's experience, seeking to improve and adapt it to the conditions of that country.

- Taking care when transplanting financing mechanisms from one country to another, and taking existing social, institutional and legal conditions into account. There are no universally applicable recipes. The processes under way vary, and lessons must be learned from previous experience and from mistakes that may have been made.

- Taking as a basis the diversity found within the country in terms of the *various target groups* of the NFFS, forest managers and their conditions, objectives of use and management, problems and financial needs, and the various types of forest and their state, all of which will entail the adoption of a range of existing and potential financing mechanisms in order to meet the various specific requirements.

- Prior to formulation of an NFFS, it is important to review and evaluate *national experience* regarding all the financing sources, instruments and operators that have existed in the country, in order to evaluate their functioning, effectiveness, and success or otherwise, together with the reasons that each of them has ceased to exist or is still operating. Analysis of this experience will provide elements for formulation of a well-integrated NFFS.

- *Coordinating financial operators*, both those concerning investment and those concerning payments for goods and environmental services. The national studies make suggestions as to changes in forest-sector financial institutions, with the creation of new mechanisms, such as funds and investment banks. Some specific bodies for forest financing are mentioned, such as the Finance Authority in Paraguay, the Forest Investment Bank in Panama, the Special Investment Fund and the Banrural in Guatemala, and the Forest Fund in Nicaragua.

- Promoting the *generation, diffusion and exchange of scientific and technical knowledge concerning SFM*, thus allowing the application of management practices that are economically feasible, socially sustainable and viable in forest and environmental terms. The broad range of opportunities, and not only investment or payment mechanisms, should be presented and used together.

- Always remembering that situations are in a constant state of flux, and stressing the importance of including *flexibility and adaptation* in the strategy's management portfolio, where monitoring, evaluation and decision-making are important elements in order to correct guidelines and optimize the actions of those involved, with a view to solving the problems that have been identified.

- Given their function, size and features, the sources of *international cooperation* should not replace national sources, but rather support and facilitate availability of the necessary resources. The NFFS should provide guidance for international cooperation and ensure that the latter and its resources contribute to, facilitate and stimulate the contribution of complementary national resources in the forest sector. A preliminary analysis of opportunities, prospects and challenges is therefore suggested before initiating any specific financing activities.

- NFFSs must also consider the demand, access and participation of international financial cooperation, together with the guarantee of sustainability and continuity of the processes started by the latter. It is desirable that this cooperation should attract additional national resources for these mechanisms. Lastly, international cooperation should also improve information on its own mechanisms and means of application.

In conclusion, the development of an NFFS must be based on criteria of *conditionality* (for example, incorporating criteria of sustainability and responsible business practices), *additionality* (for example, creating additional revenue and improving access to financing for investments and risk mitigation systems), *functionality* (creating mechanisms that are effective and have an impact for the various target groups) and *equity* (a fair distribution of the costs, benefits and responsibilities of SFM along value chains and among the various actors in the sector) both nationally and internationally

Box 31 summarizes the essential elements of a *multiactor process* for the development of an NFFS, stressing that a strategy is much more than a document.

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Box 31: Eight important elements to be taken into account in a multiactor process for the development of an NFFS

A strategy is a plan divided into long-term actions and designed to achieve specific objectives.

Strategic planning is the process that allows definition of the direction to be taken and the procedures to be followed in decisions on the resources to be used in pursuit of the proposed objectives. It has to answer three key questions: (1) What is to be done? (2) Why is it to be done? (3) How best is it to be done?

Eight elements can be distinguished in the development and monitoring of an NFFS:

1. A shared perspective, purpose and values concerning forests, their sustainable management and their financing:
   - the perspective determines the long-term objectives and how they are to be achieved;
   - the purpose describes the objectives pursued by the actors within the NFFS;
   - the values are the institutional principles that shape the actions of the organization, reflecting its culture and priorities.
2. A survey and participatory analysis of the current situation of forest financing for investments and payments (size, scope, functioning, impact, problems to be addressed, strong and weak points, opportunities and dangers), taking into account:
   - the existing mechanisms (sources, instruments and operators) for investments;
   - the existing mechanisms (sources, instruments and operators) for payments for goods and services;
   - the main actors in financing chains, their situation, responsibilities, problems and requirements for effective functioning;
   - the main users (i.e. those who manage forests) merit special attention, together with their problems and their requirements with regard to financing;
   - the various types of forest, their condition, present and potential functions, management and financing;
   - the determining factors of the environment (nationally and internationally) that affect the working and effectiveness of the financing system.
3. Participatory definition of the functions, principles, objectives, priorities and target groups of an NFFS.
4. The main functions of forests (goods and services):
   - features, quality, quantity and value of the goods and services of the various types of forest;
   - consideration of the development of forest products and services that have no market.
5. A plan of action:
   - development and/or improvement of existing and innovative mechanisms (for investments and payments);
   - development of an enabling environment for the mobilization of additional resources and the functioning, sustainability and effectiveness of the mechanisms to be introduced;
   - the path and processes for carrying out the plan;
   - a portfolio of programmes and projects (including business cases).
6. A monitoring and evaluation system.
7. An information, feedback, training, extension and communication system.
8. A multiactor execution plan (including definition of responsibilities and procedures to be followed by those endorsing the NFFS in terms of commitments concerning communication, coordination, collaboration and implementation, and the contribution of resources).

9 Conclusions and reflections for the future

9.1 Conclusions

This chapter summarizes the main conclusions of the foregoing analysis. More specific conclusions are found at the end of each chapter.

Diversity and special features of each country and its experience: an opportunity to learn

1. The current general picture of forest management financing presented in this analysis is variegated, with major differences among countries and their contexts. Although every country has some type of financing system, degrees of development vary, both in scope and approach, and also in their working in practice. The differences depend on institutional, socio-economic, cultural, environmental and political factors, the stage of development in financial and forest matters, and the climate for investments and payments. The degree to which these factors can affect the current state of forest management financing in the local, national and international contexts varies. This observation confirms how important it is to take the individual features of each country, with its history, present situation and experience of forest financing, as the starting point for development of the latter.

2. Some countries have a substantial head start due to the creation of new financing mechanisms. Others have made less progress and are basically using traditional subsidy, credit and incentive instruments in financial conditions that are precarious and tend to lack sustainability. In view of these differences in the state of progress, experience, ideas and prospects, the added value of learning and exchange among countries and regions is clear.

Problems to be solved

3. The major problems with regard to financing are the sector's lack of competitiveness, the high opportunity costs of sustainable management (low profitability, high risks, few guarantees, and illegality) and the absence of an enabling environment for responsible investments and adequate payments. The lack of initiatives and of access to financial resources (environmental and social criteria and conditions, bureaucratic procedures and security instruments) have hampered the growth and sustainability of the sector. In addition, the forest sector has a negative image because of its ineffective business operations, poor sustainability and absence of quick returns, with common situations of illegality and corruption, so that it is perceived as a high-risk sector.

4. Although it is generally said that the greatest problem in financing forest management is the lack of sufficient financial resources for forest development, on the basis of the national studies the present work would conclude that this not in fact the case. The most significant problem is not always or only the lack of resources. Rather, the conditions presented by the forest sector and the country for the supply of and access to these resources is the greatest obstacle to investment and the payment for goods and services for SFM – in other words, the absence of a legal, political and institutional context of long-term confidence, transparency, stability and security (otherwise known as an enabling environment).

5. A specific problem, and one that is a virtual constraint on obtaining new and additional resources, is the lack of security and clarity regarding the tenure of land and forest resources. Countries that have solved this problem make faster progress in obtaining alternative sources of financing.

Opportunities

6. In all the countries, due attention to forest financing and the need for modifications are considered priorities in order to foster SFM. The urgency of such steps is driven by certain trends observed, including growing recognition of the multiple values of forests, the present stagnation (and reduction) in national public financing and international cooperation, the awareness that traditional (basically State) regulatory, control and incentive instruments have not been sufficient on their own to drive sustainable and cost-effective forest management, and the view that SFM should not be the sole responsibility of the government, but of society in general, and that new approaches and financing mechanisms are needed to bring about this change. Moreover, as a result of globalization, the national level is

increasingly being integrated into international policies, conventions, agreements and markets.

7. The national studies indicated that there is a wide range of sometimes complex and persistent factors hampering improvement in forest management and its adequate financing. However, a wealth of creative new initiatives, activities, experiences and ideas are also noted in the various countries, offering major opportunities and challenges. These are positive factors with a view to expanding forest financing.

8. There is particular dynamism and creativity in the development of instruments for access to the capital market and payments for forest services. The development of these new instruments has opened up fresh opportunities for the forest sector and SFM, and these need support and broad-based trials. Both public resources and international cooperation can play leading roles in the allocation of new and additional resources.

9. In the countries of the region, payments for forest services at the various levels (international, national and local) are still an innovative instrument with clear potential for raising additional revenue for forest management. They also constitute opportunities to diversify income, thereby reducing the exclusive dependence on timber as a source of income, and to expand possibilities of incorporating the costs of sustainable management into the prices of products and services in addition to timber.

10. Procedures and regulations for payments for services have yet to be established and formalized. They have usually been implemented on an experimental or pilot scale and been dependent on international subsidies as incentives, so that they do not yet operate as payments for services in the real sense of the term. National legislation and political and institutional frameworks in this regard are insufficient to enable their wide-scale adoption and sustainability. Moreover, there are a number of issues that require more detailed definition: voluntary versus obligatory payment, commoditization[24] and a fair price for services, the design of (carbon) projects, the real demand and the willingness to pay (international biodiversity). It seems that the role of the free market in services is being overestimated. Most of the systems that do function are still found at local and municipal levels, and entail a certain degree of obligation to pay (for example, by being included in water rates), independently of the market.

11. In most of the countries today, the main flow of financing for forest investment already comes from private sources and self-financing, which far exceed national public sources and international cooperation. While the latter are tending to remain at the same level or to shrink, private sources are rapidly expanding both in volume and in the variety on offer. It is anticipated that the greatest potential for obtaining new and additional resources will be through the development of instruments and conditions giving access to the capital market (institutional, business and private capital) and the development of mechanisms for payments for local, national and international forest services, bundling or packaging them with risk-mitigation instruments. The challenge for the forest sector is how to take advantage of this potential, while ensuring the sustainability of forest management. The financial sector appears to have the dynamism, creativity and flexibility needed to discern the opportunities offered by the various economic sectors, including the forest sector.

Enabling environment

12. Growing international awareness, greater attention and more negotiations regarding international conventions and agreements to combat illegality and unsustainability in the individual countries are creating an opportunity to enhance the national enabling environment needed for SFM and its adequate financing. In addition, there are the existing and emerging instruments resulting from international negotiations (for example, UNFF, CBD and UNFCCC), and these can mean an expansion of opportunities for additional income for forest management through the financial instruments of reduced emissions from deforestation and forest degradation (REDD) and biodiversity conservation. Third-party forest certification and other market and social instruments that promote sustainable management, responsible business and fair prices complete the range of international opportunities.

13. Existing forest legislation and policies could in principle form the necessary basis for an expansion of financing. The multifunctional nature and multiple uses of forests are increasingly being recognized in legislation and policies, and being taken as the basis for sustainable management. The current body of laws and policies contains elements to create a broad view of financing, so long as it is accompanied by the application of legality and

[24] Commoditization: the definition of an (intangible) forest service as a quantitative product (a commodity) that can be verified, transferred and sold.

stronger institutions. Support in the shape of the political will to promote a sustainable and economically sound forest management is in particular a determining factor. Progress in formulating NFPs or similar frameworks is also a good opportunity and an appropriate institutional framework to design comprehensive financing strategies.

14. Difficulties in the region over obtaining access to reliable data on the volume and origin of the various types and sources of financing for investments and payments for forest goods and services hamper their systematic and qualitative evaluation.[25] This lack of systematization is to a certain extent connected with the private sector's reluctance to disseminate information for commercial reasons, and also because information on the many informal and/or illegal activities in the sector simply does not exist. The lack of sufficient financial, economic and commercial information on forest activities, combined with the sector's low level of transparency and reliability, affects the financing process both for planners, potential investors and purchasers, and for those who carry out the forest activities.

15. If the real value of the contribution of forests is given in national accounts, this generally helps to persuade political decision-makers and potential investors of the economic and social importance of forests. Insufficient information, coupled with a failure to grasp the multifunctional nature of forests, prevents any accurate assessment of the contribution of forest activities and forests to the national economy (in terms of GDP) and society.

Uneven attention

16. The most common allocation of public and private financial resources is for large-scale timber production for the market (pulp and paper conglomerates, large enterprises harvesting timber from natural forests). Most of the investment financing mechanisms and most of the available resources have one of the following objectives: (1) private loans and public incentives for large enterprises and commercial forest plantations (establishment and management), or (2) harvesting and processing of timber from natural forests and plantations.
17. At the same time, insufficient attention has been devoted to:
    - small-scale producers and small and medium-scale enterprises, which usually have access only to *ad hoc*, informal and intermediated financial systems, or to financing from projects financed by international cooperation, which often lack the legal, sustainable bases necessary for long-term investments and payments;
    - the asymmetry of the chain, inasmuch as small producers receive only a fraction of the payments for goods sold in the market;
    - sustainable management of natural forests: when these forests do exist, it is usually for objectives of conservation or (communal) poverty relief, at present financed mostly by international cooperation (NGO or governmental) or limited private financing for the certified harvesting of natural primary forests;
    - restoration of degraded forest land, rehabilitation of degraded or logged-over forests, and management of secondary forests;
    - formalization, institutionalization and scaling-up of validated and promising financing mechanisms;
    - linkages among sectors, especially between the financial and forest sectors, but also with and among other sectors that have a bearing on forests or vice versa.

18. Little consideration tends to be given to criteria of sustainability, particularly environmental, social and cultural criteria, in financial decisions concerning forests.

19. There is a current tendency in discussions concerning forest financing to focus mainly on forest goods and services. The conclusion of the present work is that more comprehensive perspectives and strategies should be adopted, encompassing not only the financing of investments (including incentives) and payments for goods and services, but also risk-mitigating mechanisms and the creation of an enabling environment.

Forest and environmental funds: important means of distribution

20. Forest and environmental funds are found in almost all the countries, although they may differ in approach and style of management – and have varying degrees of success. They are important elements, with the potential to administer and distribute incentives, loans and payments for services. Most of them do so in a comprehensive manner and are fairly successful, combining various sources and instruments for various objectives and specific purposes. Funds that manage a single source and/or have a single purpose are more problematic. The funds established often fail to meet certain conditions of governance and

[25] The difficulty in obtaining adequate information is also illustrated in Moura Costa *et al.*, 1999, and Savcor Indufor Oy, 2006.

sound institutional functioning. Funds that are relatively independent of the national government and have social bodies participating in their management would appear to work better.

A summary evaluation

21. A brief evaluation of the existing mechanisms indicate the following:
    - Public subsidies, incentives and exemptions have worked relatively well where there is legislation and this is consistently implemented. They have operated particularly for the establishment of plantations and for large enterprises, but very little for natural forests.
    - National public and private loans, intended specifically for small owners, have not worked well because of problems with risks, the lack of guarantees, tenure, bureaucracy and their poor positioning within legislation.
    - The capital market is used mainly for harvesting, processing and industrialization connected with large enterprises. There is growing potential and creativity for the use of capital markets by other actors in the forest chain, for example for rehabilitation, conservation and forest management by small producers, their associations and new public-private and community-big business partnerships.
    - Payments for services are emerging and showing potential, but they need to be defined more clearly, with further development of their commoditization and institutionalization.
    - The financing of small and medium-scale enterprises works in an environment unfamiliar to governmental and official institutions, with a certain lack of legality and official recognition. In some places, microcredit systems suited to the informal conditions, in some cases in the form of associations, are being established with some success.

Role of international cooperation

22. International governmental and non-governmental cooperation has played an important role in financing forest activities, especially in policy- and institution-building, work with communities and small producers, the management of protected areas and the promotion of agroforestry, but less so with regard to plantations and harvesting. In the past, it worked primarily through pilot projects, for example providing start-up investment capital to launch incentive and subsidy schemes and, more recently, payment schemes for environmental and forest services, resulting in useful action and experience.

23. Apart from direct financing, support through these projects and programmes is not sustainable in the long term when it is not set within a framework and supported through the creation of a stable and reliable context to receive it, with institutional and managerial capacity and appropriate policies. It is clear that modifications are needed in the responsibilities, functions, values and priorities of international cooperation (both governmental and non-governmental) and international financing mechanisms, such as the GEF and other international funds, with regard to forest financing, in order to optimize their functionality, additionality and complementarity.

Need for a national strategy and its development

24. Current systems of forest financing and their approaches, policies and practices are not yet sufficient to meet the conditions for halting deforestation and degradation processes. Advantage is not being taken of the opportunities and challenges to promote the rehabilitation and (re)planting of degraded forest land, increase the forested area under sound management and meet the growing demand for green, legal products. Forest financing mechanisms in the countries studied, understood as the set of sources, instruments and operators, do not yet form consistent systems. And when some type of system does exist, it is usually not based on the multifunctional nature of forests but is confined to a single-issue objective and/or a limited group of actors, for example the promotion of commercial forest plantations. Such systems are in general fragmented, *ad hoc*, incomplete and erratic, and in many cases ineffective. Providing them with a structure through comprehensive national strategic forest financing plans, which combine investments with payments for forest goods and services, can help to create clarity and confidence, and contribute to the necessary enabling environment.

25. A national strategy must take account of the wide range of stakeholders in the sector and the various levels on which development of the sector takes place. It must be an integral part of the NFP and national development strategies, and recognize the importance of both the tangible and intangible products of forests. In this process, account must be taken of the diversity of types of forest, types of manager, objectives of use and management, environmental and socio-economic conditions, and the specific solutions that these various aspects may require.

26. An NFFS has criteria of *conditionality* (for example, incorporating criteria of sustainability and responsible business practices), *additionality* (for example, creating additional revenue and improving access to financing for investments and risk-mitigation systems), *functionality* (creating mechanisms that are effective and have an impact) and *equity* (a fair distribution of the costs and benefits of SFM along value chains and among the various actors in the sector) both nationally and internationally.

9.2 Reflections on the future

Improvement of the enabling environment: a challenge first and foremost for governments

1. Financial resources for investments and payments for services do not seem to be the main problem for forest financing. Nor probably does the development of financing mechanisms tailored to the needs of the various client groups in this sector. The main challenge is that of how to develop the most conducive conditions or environment for the development and effective working of these mechanisms. The environment refers mainly to factors connected with governance and effective institutions within the country and the forest sector, such as confidence, transparency, accountability, the elimination of illegality and corruption, stable laws and policies, clearly defined land tenure, and access to reliable information. It can be concluded that in the long term, investing in a stable, reliable political, institutional and legal environment for forest financing may be more effective and sustainable than the development of mechanisms as such – and is of at least equal importance.

2. National governments play a determining role in creating the environment and supplying institutional resources. Legislation, policy planning, political will and their application can create opportunities to leverage private capital, create the right conditions, coordinate donors and facilitate the obtaining of additional and new resources. It is very important to seek ways of reducing risks in the forest sector and creating greater guarantees, confidence, transparency and stability. Moreover, land tenure problems must be resolved and the private sector must be prepared for SFM.

3. A strong, long-term State commitment to the forest sector and its adequate financing is of vital importance. Such a commitment depends on a national political will, which can be influenced by those active in the various sectors of society who together see growing opportunities for sustainable forest development.

Development of a financing strategy: a challenge for all

4. This work suggests the organization and improvement of financing for the forest sector, including investments and fair payments for goods and services produced by all forest functions. The national studies confirm the view that a forest that is not valued is worthless and therefore disappears. The formulation of a multiactor NFFS suited to the conditions of the individual country, especially the various types of forest and forest manager, and set within the NFP, could help in this process of organization. NFFSs can include all aspects, not only political, institutional, social and cultural, but also economic, financial, technological and environmental.

5. The conceptual framework developed in this work on the basis of the national studies can provide guidelines and inspiration for the formulation and implementation of a national strategy for the financing of SFM.

6. NFFSs must take into account the existing financing and economic mechanisms in the country, and also the factors shaping the enabling environment for development of the forest sector. Only then can they help to stimulate investments, payments for goods and environmental services, and the efficient use of available resources, both by the State and by large, medium and small-scale owners and private and public bodies.

7. The strategy is not primarily a document. Rather, its effectiveness is enhanced when it is seen as a multiactor participatory process of dialogue, coordination, collaboration and negotiation, with strong long-term commitment and accountability of the parties involved.

8. The creation of more financial resources is a condition but not a guarantee of SFM. It is vital that an NFFS be structured as a comprehensive instrument within national policies in order to promote and shape SFM. There must therefore be a clear correspondence among NFFSs and NFPs and the policies and plans of other sectors connected with SFM.
9. The private sector (both large and small producers) is increasingly the driving force behind sustainable forest development and its financing, always seeking opportunities within the environments established. Society

increasingly requires the sector to show its "licence to operate", incorporating criteria of sustainability and responsible business into its daily practice.

10. The Equator Principles,[26] adopted by an international group of financial institutions to ensure the sustainability of their investments and transactions, can serve as an example for the promotion of responsible financing in the forest sector. The informal sector requires especial attention in order to create and maintain a level playing field of legality and competitiveness. Similarly, the forest sector can benefit by paying more attention to the promotion of forest certification and other instruments attesting to sound, efficient forest management, also taking account of the fact that they may become requirements of the financial sector when making its investments.

11. NGOs, both environmental and social, have played important and recognized roles in developing forest management and its financing, each one with its particular objectives, focuses, and scales and styles of operation. These roles have been varied, including influencing policies, implementing and facilitating activities in the field with small producers, capacity-building and empowerment of rural communities, leadership in developing mechanisms for environmental service payments, and creating new partnerships. And their roles continue to be crucial in the development and implementation of NFFSs, always bearing in mind their particular mandates and constituents.

Improvement in the relationship: a challenge for the financial and forest sectors

12. The divorce between the forest and financial sectors hampers the development of innovative mechanisms. The lack of knowledge in the forest sector regarding the potential and workings of capital market instruments and service payment mechanisms is a serious obstacle to designing appropriate mechanisms. The financial sector for its part has little information and knowledge regarding the opportunities offered by investment in forests, their sound management and the mobilization of resources for the forest sector.

13. However, the financial sector is not the only important one, and greater advantage can be taken of complementarity among various related sectors by sharing knowledge and views in order to design a comprehensive NFFS. The results of this work on the financial aspects of the forest sector in Latin America show the importance of creating opportunities for the exchange of knowledge and experience on this topic among sectors and among countries.

The future role of international cooperation (multilateral, bilateral and NGOs)

14. International cooperation and the development of financing mechanisms under the various international conventions and processes concerning forests must understand and take account of the particular situations and needs of the beneficiary country as the starting point for their support. There is no one size that fits all. The results of this work agree with and support the need identified in the UNFF to adopt a broad, comprehensive approach in developing a mechanism or voluntary international framework for forest financing under the non-legally binding instrument on all types of forest in support of the national implementation of SFM. The portfolio approach indicates the importance of seeking to mobilize other (additional) sources of forest financing, combining public and private, national and international sources for a range of different purposes in support of forest management.

15. Taking into account the fact that one of the conclusions of this work is that the availability of resources is not in itself the sole problem, but that the creation of conditions and capacities for their mobilization, use and effective impact within the individual country is of at least equal importance. The development of a voluntary international mechanism or framework for forest financing can include in the financing portfolio, support for the functions of facilitator, catalyst, broker, technical advisor and assistant, so that international cooperation provides a platform for inspiration and allows the sharing of ideas and experience, thus complementing the creation of additional financing sources and mechanisms.

16. In which areas can the countries benefit from international support?
    - The design, development and implementation of a ***national forest financing strategy*** in support of a participatory, multiactor, intersectoral approach, set within national policy and tailored to national conditions.

[26] See www.equator-principles.com

- The creation of an ***enabling environment for investments and payments***, encompassing governance, effective institutions and transparency.
- The development and implementation of ***innovative investment instruments and mechanisms*** and their administration, for example:
  1. capital markets;
  2. guarantee, insurance and risk-mitigation instruments;
  3. instruments for small owners and microfinance, creating portfolios of projects providing large-scale support for more sustainable harvesting, processing and marketing of forest products.
- The development of a ***fair market for goods***: the creation and strengthening of an equitable environment of national and international competitiveness (with differentiated prices), promoting legality and certification of sustainable forest management.
- The development of ***payment mechanisms for forest and environmental services***, including the design and application of international payment mechanisms for global services (for example, carbon fixation and biodiversity).
- The design, organization and financial structuring of a ***portfolio of projects***, programmes and business cases regarding forest investments and payments, promoting new partnerships (for example, community-business, private-public and national-international) and boosting coordination, collaboration and sustainability in the forest chain.
- The ***enhancement of regional, national and local capacities*** of the various actors and sectors concerning forest financing:
  - development of educational curricula and organization of training courses;
  - creation of platforms for interaction among sectors and actors, and spaces and mechanisms for the sharing of information, knowledge and experience within and among countries and regions, boosting the functions fulfilled by subregional organizations in this regard, such as ACTO, CCAD, the Common Market of the South (MERCOSUR), the FAO Latin American and Caribbean Forestry Commission and the NFP Facility;
  - carrying out of special studies, for example to increase knowledge of the role of informal financing, especially by communities.
- The development of ***better coordination, consistency and collaboration*** among donors contributing to forest development and conservation and the implementation of an NFFS.

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www.fao.org/forestry/mecanismosfinancieros

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Annex 3 Glossary of financial and forestry terms

3A. Financial terms (with the contribution of Jorge Alexander Muñoz Sánchez)

ACCEPTANCE, BANK OR FINANCIAL	Instrument for the financing of commercial activities, either national or international. Bills of exchange drawn by the purchaser of merchandise or movable assets in favour of their vendor. These bills are converted into bank or financial acceptances when the purchaser or importer asks the bank or financial body that acts as intermediary accepting the main responsibility for punctual payment of the bills of exchange, charging a commission.
ADVANCE	Money paid prior to the due date of a contract or agreement. In the forest context, it is usually a financing mechanism represented in cash, inputs for forest production or the transfer of technology.
AMORTIZATION	The allocation of a lump sum amount to different time periods, particularly for loans and other forms of finance, including related interest or other finance charges.
ASSET, FINANCIAL	Any patrimonial, credit or representative of merchandise security
ASSET, UNDERLYING	Asset over which the right to buy or sell is held (timber, a product of agroindustrial processing, growing stock, future forest cash flows, environmental services) in accordance with the terms of a contract, and which is used as a reference in fixing prices.
BOND	Securities, part of a loan set up under the responsibility of an issuing body. Its minimum term is one year. In exchange, the issuer will receive a rate of interest from its investment, which it fixes according to the state of the market at the time of placing the securities. Such securities are considered to be fixed income because of their characteristics.
BROKER/ BROKERAGE	Party that acts as a mediatory between a buyer and a seller. Brokerage: the fee paid to a broker for executing orders. May be a flat amount or a percentage; also referred to as a commission.
BUNDLING	Combining packages of instruments, operators or means of investment or payment or combinations of these, with the objective of creating additionality and synergy in financial procedures.
CAP-AND-TRADE MARKET	An economic strategy for the global reduction of contaminating gases. It suggests exploiting market forces by developing business deals that promote environmental protection and innovative financial incentives needed to reduce pollution. In the cap-and-trade system the government sets a maximum level (a cap) on carbon emissions for enterprises, at the same time creating a market that allows them to buy or sell emission rights.
CAPTURE	Operation carried out by the financial system, consisting in obtaining loan capital, such as deposits, in order to grant loans to productive activities at a specified rate of interest, and to obtain a profit for the work of intermediation carried out.
CARBON MARKET	Derived from the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Marrakesh Accords, the carbon market came into being because of the expectation that emission permits would be needed by Annex-1 countries, organizing them by region and country. The main commitment adopted by the signatory countries is to reduce their emissions of the contaminating gases known as greenhouse gases, over a period of time known as the first commitment period, which runs from 2008 to 2012. In the Kyoto Protocol it is considered that when a country that is obliged to meet the

	reduction targets accepted in the commitment cannot achieve these on its own, it may have recourse to any of the three following flexible mechanisms: purchase of CER certificates from other Annex-1 countries that have an excess of certificates; implementation of emission reduction schemes in other Annex-1 countries; or, thirdly, investment in non-Annex-1 countries with the transfer of clean technology resulting in demonstrably lower emissions for which certificates can be received.
CASH FLOW	Receipts and expenditure of money that a company, activity or business has.
CENTRAL BANK	Institution that issues and administers the legal currency of a country and acts as the banker of banks. It controls a country's monetary system (the currency), credit system (interest rates) and exchange system (exchange rates). Its main functions are: (i) acting as State bank, (ii) controlling the issuing of currency, (iii) receiving consignments and granting loans to commercial banks and the government, (iv) managing the country's monetary policy (controlling inflation) and financial policy, and (v) carrying out currency transfers with other countries.
CLEARING	The procedure through which any Clearing House becomes the buyer to each seller of a spot, forward or futures contract, and the seller to each buyer, and assumes responsibility for protecting buyers and sellers from financial loss by ensuring buyer and seller performance on each contract. This is effected through the clearing process, in which transactions are matched, confirming that both the buyer's and the seller's trade information are in agreement.
COLLATERAL	Guarantee for the repayment of a loan.
COMMODITIZATION	Definition of an (intangible) forest service as a quantitative product (commodity) that can be transferred, sold and verified.
CONTRACT	Formal agreement with a physical or juridical person by which an undertaking is given to provide some service in exchange for a payment.
CREDIT	Loan granted in exchange for a guarantee of repayment and the payment of interest for its use.
DERIVATIVES	Generic term applied to a wide range of financial instruments whose price is derived from an underlying asset, a benchmark rate or an index.
DISINTERMEDIATION	Phenomenon derived from the development of capital markets, marked by direct relationships between agents needing to obtain financing and lenders. Direct contact between investors and stakeholders in the forest chain allows greater flexibility in periods, freeing of negotiations and guarantee commissions, and the development of new financing formulas.
DISTRIBUTION OPERATOR	Institution or person functioning as a bridge between those that have resources (the source) and the recipient of these (the forest owner or manager), using specific instruments for making this transfer, specific channels (or means) for this purpose, in most cases in the form of funds.
EN FIRME (FIRM OFFER)	Stock exchange term referring to the obligation of the parties to carry out an operation. When an operation is carried out EN FIRME, both buyer and seller are required to carry out the operation within the stipulated time and under the stipulated conditions.
EQUITY MARKET, CAPITAL MARKET	Set of mechanisms available to an economy to fulfil the basic function of allocation and distribution, in time and space, of capital resources (medium- and long-term resources intended to finance investment, as opposed to short-term resources, which are the object of the money market), risks, monitoring and information associated with the process of transferring savings to investment.
EXTERNALITIES	Effects of the activities of a person or an enterprise on others, for which no compensation is made. Externalities can harm or benefit others; in other words, they may be negative or positive. A negative externality occurs when a company contaminates the environment to produce its

	goods and does not compensate the local people who are harmed. Primary education produces positive externalities, inasmuch as it benefits not only the primary-level pupils but also society in general. Governments can reduce negative externalities by regulating and taxing the production of goods with negative externalities, and can increase positive ones by subsidizing the production of goods with positive externalities or directly supplying them.
FINANCING MECHANISM	A unit, set or formal or informal arrangement for different periods that apply to various sources of finance, with various instruments, with the aim of channelling resources from their source to their target or beneficiary. The financing mechanism is the set of source, operator and instrument.
FORWARD	Personalized trade contracts in which one of the parties undertakes to sell a certain quantity of a specified product or service at a future date, and the other party undertakes to purchase at the agreed price. The difference from futures is that forwards are not standardized.
FUTURES CONTRACT	A legally binding agreement to buy or sell a commodity or financial instrument at a later date. Futures contracts are standardized according to the quality, quantity and delivery time and location for each commodity.
GRACE PERIOD	Period of time allowed the beneficiary of a loan for the repayment of capital and the payment of interest.
GROSS DOMESTIC PRODUCT (GDP)	Value of all the services and final goods produced in a country in one year. (See also gross national product, or GNP.) GDP can be measured by totalling all the revenues of an economy (salaries, interests, profits and incomes) or the expenditure (consumption, investment, State purchases and net exports [exports minus imports]). Both procedures should lead to the same result, because one person's expenditure is always another's income, so that the sum of all revenues must be equal to the sum of all expenditures.
GUARANTEE	1. Personal guarantee in which a third party makes a commitment to fulfil an obligation if the debtor fails to do so. 2. Pledge or document given to ensure the fulfilment of an obligation or commitment.
GUARANTEE, COLLATERAL	Guarantee of payment granted by a third party in a bill of exchange or other security instrument.
GUARANTEE, PERSONAL	This is given by a person other than the debtor, pledging all his assets as security for one or more of the debtor's obligations. (Examples: guarantee bond and collateral.)
GUARANTEE, REAL	This gives rise to a right of a real nature in favour of the beneficiary. It confers rights of pursuit and preference. (Example: mortgage.)
HANDLING AGENT	In securitization, the spokesperson for independent assets. Responsible for collecting resources resulting from the issue and making contact with investors, in agreement with rights set out in investment certificates.
INCENTIVE	See SUBSIDY.
INDEBTEDNESS	Use of third-party resources obtained through debt to finance an activity and increase an enterprise's operating capacity.
INSTRUMENT, DERIVATIVE	Financial instrument, usually a contract, stipulating that the parties undertake to buy or sell, at a future date, a specified asset, which may be a spot commodity, monetary or a financial instrument, at a value that is fixed at the time of the negotiation.
INSTRUMENT, FINANCIAL	Form in which the resources of a particular financial source reach the specified recipient so that the latter can fulfil the objective for which it was established or requested.
INTEREST	Amount paid to a third party for using monetary resources owned by the latter.
INTEREST ON LATE PAYMENT	Interest paid in addition to that originally stipulated to compensate for the delay in payment or for non-compliance with undertakings.
INTEREST RATE	Price that has to be paid for using borrowed funds or loan capital, expressed as a percentage, for a period of time. Rates of interest can be expressed in nominal or effective terms. Nominal terms are those in

	which payment of interest is not capitalized, while effective terms correspond to annual rates of interest equivalent to the capitalization of periodic interest, whether anticipated or due. The effective rate of interest is the appropriate instrument for measuring and comparing returns from different investment choices. The nominal rates can apply on a monthly, three-monthly or six-monthly basis or any other period that may be established.
INTERMEDIATION MARGIN (FINANCIAL SPREAD)	Difference between what the financial institution charges for the loans it grants and what it pays for the deposits it receives. In other words, the price difference between two contracts, with the objective of profiting from a change in the price relationship.
INTERMEDIATION, BANK	Work carried out by banks consisting in acquiring resources through deposits from the public for a stipulated time and at a stipulated interest rate, and investing them in productive activities through loans to clients for other lengths of time and at other rates of interest.
INTERMEDIATION, STOCK EXCHANGE	Activity carried on by agents of the public stock market (commission agents) consisting in putting parties interested in obtaining resources for financing in contact with parties interested in investing their resources in productive activities.
INVESTMENT	Application of economic resources to one or several activities, with the aim of obtaining quantifiable returns within a specified period.
INVESTMENT BANKING	An activity provide by an investment bank (financial institution) or investment banker (professional person) that raises capital, trades in securities and manages corporate mergers and acquisitions. Investment banks profit from companies and governments by raising money through issuing and selling securities in the capital markets (both equity, bond) and insuring bonds (selling credit default swaps), as well as providing advice on transactions such as mergers and acquisitions
ISSUER	Official body that issues paper money – the central bank or issuing bank. Private institutions that put securities into circulation; these may represent debt, ownership, transfer or sharing.
LAND VALUE, ANTICIPATED	An indication of what might be paid for the land alone (without any productive activity) in order to commit it for planting, in this case, for an unlimited number of harvesting cycles, and obtain a minimum financial return, equivalent to the discount rate used in the analysis.
LEASE	A lease is the right to use or occupy personal property or real estate given by the lessor to another person, the lessee, for a definite or indefinite period against an agreed payment.
LEVERAGE	The ability to control large amounts of a commodity with a comparatively small amount of capital.
LIBERALIZATION/DEREGULATION OF THE MARKET	Elimination or non-application of State controls hampering the normal working of a market economy. It refers, for example, to the elimination of price and salary controls and import quotas, the reduction in taxes and import duties. Liberalization of the market does not usually mean that the government ceases completely to intervene in market processes.
LIQUIDITY	Greater or lesser ease that the holder of a security, share or asset may have in converting it into cash at any time.
LIQUIDITY SHORTAGE	Situation in which an agent does not possess assets that are easily convertible into cash (a feature of the goods and services provided by forests) or assets that can be used as a means of payment.
LOAN	An amount of money granted in exchange for a promise to repay and the payment of interest for use of the same.
MARKET	Physical or virtual place where buyers and sellers come together with the intention of exchanging products or services, through the free fixing of a price, according to the laws of supply and demand.
MARKET PRICE	Price at which a stock exchange share is quoted. It is determined by supply and demand for this security or asset and depends on how the market assesses the performance of the issuer and the environment.
MARKET SHORTAGES	Cases in which a market economy does not provide the population with the desired amount of certain goods and services. Shortages of this

	type can occur in a market economy if sufficient public goods and goods with positive externalities are not produced; if too many goods with negative externalities are produced; if through the existence of natural monopolies the goods are excessively expensive; and if market agents lack access to sufficient information, for example on the quality of certain consumer goods. Such market shortages normally justify State intervention in the economy, although there is always the risk that such intervention will be ineffective, in other words, that the measures adopted by the authorities are not able to improve social well-being because of the existence of shortcomings in institutional structures or political processes.
MATCHED TRADE	The execution of the buy and sell orders that together consummate a trade; consists of one or more contracts and occurs when the same price is specified by buy and sells orders, for a specified number of contracts.
MERCHANDISE CERTIFICATE OF DEPOSIT (WAREHOUSE WARRANT)	Instrument to finance capital works through sales with a repurchase undertaking. It consists in the immediate sale and term repurchase of certificates, issued by authorized deposit centres, allowing the owner of a warehoused product to have immediate resources available so as to improve his or her liquidity, selling the warrant with the undertaking to repurchase it at a fixed term.
MUTUAL FUND, INVESTMENT FUND	Fund charged with professionally managing financial resources obtained from the public in general, whose aim is to invest the resources in a portfolio of diversified securities that represent the best profit and liquidity and the least risk to participants.
NATIONAL FOREST FINANCING STRATEGY (NFFS)	Set of measures and arrangements agreed with the participation of the stakeholders most closely involved both within and outside the forest sector for the creation of the institutional, political, legal, socio-economic and financial framework (the enabling environment). The NFFS establishes criteria and guidelines for obtaining and channelling financial resources, and identifies, coordinates and sets in operation financing mechanisms (comprising sources, instruments and operators) for promoting investment and payments for forest goods and services by the public, private, local, regional, national and international sectors in order to achieve the forest management objectives of the various target groups and the national forest programme (NFP) in a sustainable manner.
OPPORTUNITY COST	Economic term indicating the value of the best economic alternative that is lost by dedicating resources to another activity. In other words, it is the benefit that is being given up by investing resources in alternative A instead of alternative B.
PAYMENT FOR ENVIRONMENTAL/ ECOSYSTEM/ FOREST SERVICES	Payment for environmental services is a new focus, and there are still differing definitions of what it includes, for example: a. a contractual transaction (voluntary or obligatory) between a buyer and a supplier for the delivery of a specific environmental service; b. mechanisms or arrangements resulting from negotiation processes, or obligation, through which an effective and fair payment is acknowledged by consumers of environmental services to those who produce them, according to specified criteria of quantity and quality over a determined period of time.
PORTFOLIO	In the banking world, the total valuation of the loans granted by a bank or corporation. It also refers to all the assets (stocks, bonds etc.) in the possession of an economic operator.
PROFITABILITY	The relationship between the value provided by a security and the capital invested in its acquisition.
RATING AGENCY	Company specializing in study of the risk of an issue of shares and of the solvency of the issuing company. It produces a grade that is used as an indicator of the quality of the shares and helps stakeholders to diversify their portfolio between returns and risk.
REFINANCING	An operation through which the lender restructures a debt by changing either the time period or the interest rates.
REPURCHASE AGREEMENT	1. Agreement or contract to buy and sell merchandise certificates of

	deposit (warehouse warrants) through which the buyer acquires the obligation to retransfer ownership of the negotiated warrants to the initial seller, whether they are the same or others of the same type, within a set time and under conditions stipulated in advance in the initial negotiation. 2. A vehicle for a short-term loan in which ownership of the title is temporarily transferred to the party receiving the loan. In Bolivia and Colombia there are stock exchange and extra-stock exchange financing mechanisms, resources of working capital for forest activities, agroindustrial processing of timber and maintenance of plantations.	
RETURNS	The earnings in money, goods or services that a person or enterprise obtains through his or its industrial, agricultural, forest or professional activities or through commercial or civil transactions.	
REVENUE	Payment (in cash) received by an economic agent for providing a service or selling a product.	
SWAPS	Simultaneous purchase and sale of currencies or interest rate products in spot and forward market transactions.	
RISK	Degree of variability or contingency of the returns from an investment. In general terms it can be expected that the greater the risk, the greater the profitability of the investment. Types of risk:	
	Counterpart risk	The risk that the counterpart (with whom one is doing business) will not hand over the asset or security corresponding to the transaction on the repayment date.
	Country risk	Indicator developed for international degrees of risk, which gives a score, grading a specific country's capacity to pay for servicing a financial debt (financial risk) and payments for the sale of goods and services (commercial risk).
	Exchange rate risk	The contingency of losses through unexpected variations in the exchange rates of currencies in which the body has holdings.
	Interest rate risk	The contingency that, in the face of unexpected changes in interest rates, the body may see the market value of its assets decrease.
	Issuer risk	The capacity or perception the market has that the issuers will pay their debts.
	Liquidity risk	The contingency that the body may incur excessive losses through selling assets and pursuing operations with the aim of acquiring the necessary liquidity to fulfil its obligations.
	Market risk	The risk resulting from changes in the general market conditions as opposed to those of investment.
	Price risk	The contingency of losses from variations in the prices of instruments as opposed to those of the market.
	Solvency risk	The contingency of the loss of the financial structure of the issuer or guarantee of security, which can result in a fall in the value of the investment or in the ability to pay.
SECURITIES FUND	Fund established and administered by a stockbroking company which collects resources from the general public in order to promote and give liquidity to the stock market.	
SECURITIZATION	A financing instrument that consists in converting present or future assets or goods into securities negotiable on the stock market, in order to obtain liquidity in competitive market conditions, with the subsequent reduction in financial costs. The goods or assets must have common features (homogeneity) and be "autonomous assets" independent of the originator's assets, which will be administered by securitization companies.	

SELF-FINANCING	Use of one's own equity for investment projects instead of using external finance resources such as indebtedness.
SOURCE OF FINANCE, FINANCING SOURCE	Origin of financial resources to support investment and payments to those managing forests.
STOCK	Adjective meaning "of the stock exchange". When used to qualify a security, it means "high liquidity", that is, a security that can be bought or sold relatively easily and that has liquidity.
STOCK EXCHANGE	1. Private establishment authorized by the national government, where the members making it up meet for the purpose of trading in securities on behalf of their clients. 2. Public place where meetings of the stock exchange are held or its operations are carried out. The modern idea of "site" can be associated with "virtual place" where the supply and demand of securities is located. 3. Organized physical place facilitating meetings between businesses or institutions that need financial resources and those bodies or persons that have surpluses and are ready to invest.
STOCK MARKET, STOCK EXCHANGE	Set of operations of supply (sale) and demand (purchase) of short-, medium- and long-term securities issued by private, public, mixed, municipal and other enterprises, whose characteristic is the establishment of a direct link between the investor and the enterprise.
STOCK, SHARE	Security that allows any person (physical or juridical) to be the owner of a part of the enterprise issuing the certificate, converting him or her into a shareholder of the said enterprise and giving him or her a share in the profits generated by the company.
STOCKBROKER	Person legally authorized to carry out transactions involved in the buying and selling of shares, products or services on the stock exchange. He can undertake transactions on behalf of third parties (as a broker), in which case he undertakes to put demanders in contact with suppliers and charges a commission for this service, or on his own account (as a dealer), in which case he buys and sells securities with his own resources and assumes all the risks.
SUBSIDY	Economic or material (in kind) benefit that a government grants national producers to stimulate certain activities, often in order to strengthen its competitive position against others.
TAX	Fee charged by the government to taxpayers under various headings, such as the carrying out of or the right to carry out a certain economic activity.
TRUST	Term meaning "faith, confidence". By means of trust, a physical or juridical person called the trustor transfers one or more physical assets to a trust company, sometimes renouncing ownership of these, in order that the trust company should fulfil a specified purpose, on behalf of the trustor or of whomever the trustor nominates. The latter is called the beneficiary.
TRUST COMPANY, TRUSTEE COMPANY	A company that undertakes to administer the assets of a physical or juridical person (the trustor).
TRUSTOR	A physical or juridical person who entrusts the administration of one or more of his or its assets to a trust company.
VOLUNTARY CARBON MARKET	An alternative market to the regulated carbon market, in which, at their own discretion, the actors of this commercial interest, achieve carbon emission reductions.
WARRANT, WAREHOUSE	See MERCHANDISE CERTIFICATE OF DEPOSIT.

3B. Forest terms

AGROFORESTRY	The combination of agricultural or livestock farming with trees on farms or agricultural land, in such a way that the various components are complementary and form part of an ecologically, socially and economically sustainable land-use system. Trees can be combined simultaneously with crops or livestock (for example, growing cocoa in the shade of timber trees) or successively (for example, planting trees to restore the fertility of depleted soil). Farmers have practised agroforestry for centuries, but scientific studies began only in recent decades (World Agroforestry Center – ICRAF).
BIOLOGICAL DIVERSITY	The variety of living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. This includes diversity within species (genetic variety), between species and of ecosystems (ITTO, 2005).
BIOMASS	Any organic materials both above-ground and below-ground, both living and dead, e.g. trees, crops, grasses, tree litter, roots. The term includes the common definition of above- and below-ground biomass (FAO, 2005).
DEGRADED FOREST LAND	Former forest land severely damaged by the excessive harvesting of wood and/or non-wood forest products, poor management, repeated fires, grazing or other disturbances or land uses that damage soil and vegetation to a degree that inhibits or severely delays the re-establishment of forest after abandonment (ITTO, 2005).
ECOSYSTEM	A dynamic complex of plant, animal and microorganism communities and their non-living environment (soil, air, climate, water) interacting as a functional unit. Ecosystems vary from relatively undisturbed ones, such as natural primary tropical forests, to landscapes with mixed patterns of human use and ecosystems that are intensively managed and modified by humans, such as agricultural land and urban areas (ECE, 2006).
FOREST	Land spanning more than 0.5 hectares with trees taller than 5 metres and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ (FAO definition).
FOREST CERTIFICATION	A voluntary process by which a third, independent, party issues a certificate guaranteeing that management of the forest is being carried out in compliance with a set of previously established criteria and standards. What differentiates it from other certificates is, basically, the set of agreed criteria on which it is based and the organizations that have promoted it. Over and above the national forest certification that exists in some countries, there are three main systems of certification: that of the Forest Stewardship Council (FSC), the Pan-European Forest Certification (PEFC) system, and similar systems, not strictly speaking of forest certification, constituted by 14 000 “families” of environmental management systems of the International Organization for Standardization (ISO). For further information, see for example www.terra.org
FOREST DEGRADATION	The reduction in the capacity of a forest to produce goods and services. “Capacity” includes the maintenance of ecosystem structure and functions (ITTO, 2005).
FOREST HARVESTING	The set of all operations, including prior planning and subsequent assessment, connected with the felling of trees and removal of their trunks or other harvestable parts for successive processing into industrial products. It is also known as timber harvesting.
FOREST MANAGEMENT	The manipulation of forests to produce a specified set of forest products and services, both material and non-material, according to what society wants. It is important to note that the products and services wanted are constantly changing, depending on the values and well-being of the people in general. So here it is assumed that the processes needed to define the objective of forest management must be political. A trend that has been observed is that “the set of forest products and services” explicitly required by society has been continuously expanding.

FOREST MANAGEMENT PLAN	A management instrument resulting from a planning process for sustainable management activities of a forest resource, on the basis of an assessment of the features of the ecosystem to be managed and of its potential, according to environmental, technical and administrative standards, with the aim of controlling and monitoring the capacity of the forest resource to respond to any intervention on it, and reduce any risk and social, environmental, economic and territorial impact.
FOREST RESERVE	A natural space comprising one or more forest ecosystems that, because of their ecological characteristics and predominantly dense tree cover, are suitable for sustainable production of forest goods and environmental and social services, whose sustainable management allows maintenance of ecological cycles and thus of the forest cover.
FOREST SECTOR	The set of economic, social and environmental activities in forests carried out by communities, NGOs, businesses and the government, relating to the knowledge, conservation, management, use and harvesting of goods, services and values generated by forest ecosystems.
FOREST SERVICE, ECOSYSTEM SERVICE, ENVIRONMENTAL SERVICE	Non-tangible services that forest ecosystems provide to society and that directly or indirectly affect the protection and improvement of the environment, and thus of people's quality of life. They include mitigation of greenhouse gases, water conservation and management for human, agricultural, livestock and industrial consumption, generation of electrical energy, tourism, biodiversity protection and conservation, conservation and recovery of scenic beauty, and soil protection, conservation and rehabilitation.
FOREST STAKEHOLDER	Any individual or group directly or indirectly affected by or interested in a given resource (the forest) and with a stake in it (ITTO, 2005).
FOREST TYPE	A naturally occurring community of trees and associated plant species of definite botanical composition with uniform physiognomy (structure) and growing in uniform ecological conditions whose species composition remains relatively stable over time (ITTO, 2005).
FOREST/ECOSYSTEM PRODUCT	Physical product of nature (forests), directly harvested by human beings: timber, water, soil, air, plant and animal wildlife. It refers to all wood and non-wood forest products obtained from the forest resource.
NATIONAL FOREST PROGRAMME (NFP)	A generic concept, internationally defined as the comprehensive framework for the development and implementation of SFM policies within a country. It is defined as "a generic expression for a wide range of approaches towards forest policy formulation, planning and implementation at subnational and national levels", emphasizing that each country must choose its own approach. The main principles of an NFP are: sovereignty and national leadership, consistency with national policies on sustainable development, forest multifunctionality, equity, stakeholder participation and shared responsibility, transparency and common responsibility, and a holistic, intersectoral and iterative approach (FAO, 2006).
NON-WOOD FOREST PRODUCTS (NWFPs)	All forest products except timber and wood, including products from trees, plants and animals in the forest area (ITTO, 2005).
PLANTED FOREST	A forest stand that has been established by planting or seeding (ITTO, 2005).
PRIMARY FOREST	Forest that has never been subject to human disturbance, or has been so little affected by hunting, gathering and tree cutting that its natural structure, functions and dynamics have not undergone any changes that exceed the elastic capacity of the ecosystem (ITTO, 2005).
PRODUCTIVE FOREST PLANTATION	Forest and other wooded land of introduced species and in some cases native species, established through planting or seeding mainly for the production of wood or non-wood goods (FAO, 2004).
PROTECTED AREA	An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of associated natural and cultural resources, and managed through legal or other effective means (ITTO, 2005).
PROTECTIVE FOREST PLANTATION	Forest and other wooded land of native or introduced species, established through planting or seeding mainly for the provision of

	services (FAO, 2004).
REHABILITATION	A management strategy applied in degraded forest land that aims at restoring the capacity of a forest to produce products and services (ITTO, 2005).
SECONDARY FOREST	Woody vegetation regrowing on land that was largely cleared of its original forest cover (leaving less than 10 percent of the original forest cover). Secondary forests commonly develop naturally on land abandoned after shifting cultivation, settled agriculture, pasture, or failed tree plantation (ITTO, 2005).
SILVICULTURE	The practice, art and science of producing and tending forests by manipulating their establishment, species composition, structure and dynamics to fulfil given management objectives (ITTO, 2005).
SUSTAINABILITY	Characteristic or state by which the needs of the current local population can be satisfied without compromising the capacity of future generations or people of other regions to satisfy their needs (Millennium Assessment, 2005).
SUSTAINABLE FOREST MANAGEMENT (SFM)	The process of managing a forest to achieve one or more clearly specified objectives of management 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 (ITTO, 2005).
TENURE	Agreement held by an individual or group, recognized by legal statues and/or customary practice, regarding the rights and duties of ownership, holding, access and/or usage of a particular land unit or the associated resources (such as individual trees, plant species, water or minerals) therein (ITTO, 2005).
USER RIGHTS	The rights to the use of forest resources as defined by local custom or agreement or prescribed by other entities holding access rights. These rights may restrict the use of particular resources to specific harvesting levels or specific extraction techniques (ITTO, 2005).