The Private Sector Speaks:

Investing in Sustainable Forest Management

Editors

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A Note to the Reader

A set of four reports has been prepared to communicate the outcome of the "Oslo Workshop" to a range of audiences:

Highlights: -A "Highlights" document was produced at the workshop itself that summarised the main messages from the meeting.

Formal report: With the intention of providing an input into the work of the United Nations Forum on Forests, an edited version of the "Highlights" was formatted as a formal report and officially transmitted to the Secretary General of the United Nations by the six co-sponsoring governments of the Oslo Workshop.

Proceedings: The "Highlights," accompanied by the full set of papers for the workshop have been released as Proceedings but only as a CD-ROM and in electronic form on the CIFOR Website.

Main report: The main report combines an edited version of the "Highlights" with a complementary synthesis of the main messages from the rich discussion, as well as summaries of the papers prepared for the Workshop. This main report is available in hard copy as well as on the CIFOR Website.

Private sector report: The last output is a publication to communicate private sector views regarding its interest in Sustainable Forest Management, its perception of constraints, and suggestions for changes to facilitate its greater engagement in SFM investment.

The present publication is the private sector report. It has been deliberately designed for reading not only by officials and professionals but also by the general public. The editors' introduction and synthesis are brief, use a bullet-point format extensively, and avoid excessive interpretation so that readers get information directly from the original papers.

This book has been compiled and edited by Mafa E. Chipeta and Mahendra Joshi working in their individual capacities. Conveying the essence of workshop discussions has involved some interpretation but in doing this, the editors have sought to communicate the spirit of the debate. For the synthesis, should there be cases where the efforts of the editors have not succeeded in fully conveying the main message and spirit of the originals, they accept responsibility as individuals. No such material should be attributed to their respective employers, the Oslo Workshop Steering committee, the original contributing authors, or the co-sponsoring governments. However, each of the full original papers reflects the individual author's analysis and views and those of no other party.

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31 July 2001

Foreword

I take pleasure in introducing this report, which conveys private sector views on factors affecting private sector investment in Sustainable Forest Management (SFM). The report seeks to better understand how this important stakeholder group can be encouraged to play a more central role in SFM. It is one of the results of a workshop held in Oslo in January 2001 that was organised by the Center for International Forestry Research (CIFOR) in support of the recently launched United Nations Forum on Forests (UNFF). The Oslo workshop brought together experts from governmental, academic, and civil society backgrounds to discuss financing for sustainable forest management. At present the majority of investment in the forest sector comes from commercial companies and it is important to hear what the private sector believes to be the main factors that would motivate engagement in SFM. We seek to understand the main current constraints and what changes could make investment in SFM more attractive.

Adequate and reliable finance is critical if countries are to effectively respond to the international concern at the uncontrolled loss of forests. This concern, which took centre stage at the 1992 Rio de Janeiro Earth Summit, has driven governments of both developing and developed countries into committing themselves to ensure the sustainable management of forests. The Oslo workshop sought the best ways to mobilise funding for such endeavours, particularly for developing countries.

Sustainable forest management, where forests are managed to provide environmental benefits such as climate stabilisation, watershed protection, and conservation of biological diversity in addition to marketable commodities, is rarely commercially profitable. While exploitation of forests for timber, fuelwood or other commodities for narrow commercial gain can show a profit, the addition of currently little-marketed environmental services carries costs and generally makes investments commercially unattractive. The experts at the Oslo workshop, who came from different geographical regions and both public and private institutions, sought ways to promote mutually beneficial private/public partnerships to fund forest management. The challenge was to identify conditions under which the broader society gains from funding for public benefits while the private sector also profits enough to be interested in further investment.

CIFOR, a member institution of the 16-centre Consultative Group on International Agricultural Research (CGIAR), is proud be have been involved in the

organisation of this high-profile Oslo international policy dialogue. The CGIAR has a rich history of important contributions to development: it was CGIAR science that underpinned the green revolution which helped to end the scourge of hunger; I am convinced that the system's natural resources research centres, including CIFOR, will help to spearhead a new 'evergreen revolution' that will contribute to solving the environmental problems that now confront the world.

I would like to express my appreciation to the governments of Norway and the United Kingdom, which funded the Oslo Workshop and those of Brazil, Denmark, Malaysia, South Africa that co-sponsored it. To all whom the Oslo workshop has addressed its recommendations, I appeal for early action so that investment in SFM becomes a reality; the threat to the world's forests gives no room for complacency and delay. We in CIFOR stand ready to play our part as the international community faces its obligations to sustainably manage the world's forests.

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The Steering Committee of the International Workshop of Experts on Financing Sustainable Forest Management ('the Oslo Workshop') gratefully acknowledges the contributions of all participants for the ideas exchanged on the topic of private sector engagement in SFM and the invaluable contribution of resource persons and support teams in all concerned institutions. It wishes to recognise in addition the specific contribution of the following people and institutions to sponsorship, organisation, preparation of papers and other support that helped to make the workshop dialogue on the private sector a success:

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Following the synthesis in *Chapter 1* prepared by the editors, some 12 chapters or sub-chapters have been prepared by authors mainly from the developing regions who are presented below.

Chapter 2 (Humid tropical Africa) has been prepared by Jean-Jacques Landrot and Steven Speed. **Jean-Jacques Landrot** is Secretary-General of the Association Technique Internationale des Bois Tropicaux (ATIBT) and the Interafrican Forest Industries Association (IFIA). With a background in wood engineering and business, he was for 35 years chairman and chief executive of his own Group of Companies in Africa and Europe involved in forest production, industries and international trade. Landrot is currently Secretary General of IFIA which has joint headquarters in Abidjan and Paris. **Steven Speed** is Technical-Assistant, ATIBT (Paris, France), with a background in plant sciences and agriculture. His professional experience is in forestry consulting.

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Chapter 6 offers the perspective of an investment house as presented by **Peter Mertz,** Managing Director and Chief Investment Officer of UBS Timber Investors, USA, which manages US$1.5 billion of assets on behalf of over 75 institutional and

private clients of UBS Asset Management. Mertz has over 25 years of forest management and investment experience in the timberland business. He has a university background in forestry and is a member of the Society of American Foresters, and of the External Advisory Committee of the Yale Forestry Forum. Mertz also serves on the Forest Industry Working Group of the World Business Council for Sustainable Development.

David Brand, who prepared *Chapter 7* on investment opportunities offered by the environmental services of forests, is Director of Carbon Programs for the Hancock Natural Resource Group, based in Sydney, Australia. He is responsible for programs that combine traditional forestry investment with new environmental markets for forests including carbon sequestration, watershed management and biodiversity enhancement. He has formerly served as Executive General Manager of State Forests of New South Wales, before which he worked with the Canadian Forest Service as a scientist, science manager and ultimately as national director of forest research.

Chapter 8 presentes the successes and challenges of South Africa's forest plantation sector as it has introduced certification. **Mike Goldblatt, who prepared it,** has a university background in geography and in environmental and natural resource economics. He is based at PDG, a private consulting group in Johannesburg, South Africa, where he specialises in natural resource economics with a focus on water resource management, climate change and the application of environmental economics to environmental problems in a developing country context.

Maharaj Muthoo is the Executive Director of the Forest Stewardship Council based in Oaxaca, Mexico. In *Chapter 9.1* he presents the present situation in certification and efforts to address the challenges, including those of small-scale forest owners. Dr Muthoo has a university background in natural resource planning and economic development, forestry, and postgraduate management and sciences. He served as Director of Forestry Operations in FAO, Rome, after a field career in Africa, Asia and Latin America. Dr Muthoo also served as FAO Representative in Turkey.

Pedro Moura-Costa, Lionel Fretz and Gerald Kohn co-author *Chapter 9.2* which is an extract on the magnitude, trends and attributes of private sector investment in forestry and SFM. **Pedro Moura-Costa** is the Managing Director of EcoSecurities, a company based in Oxford, England which specialises in environmental finance and sustainable forestry. His career includes substantial work on the development of financial instruments for sustainable forestry, including the main studies on financial mechanisms carried out for the IFF/UNFF process. **Lionel Fretz,** a director at EcoSecurities, Oxford, has worked on project finance, bank lending, treasury, capital markets and derivatives. Within EcoSecurities he has been responsible for developing the company's financing business in Europe. He chairs the Projects Group for the development of the UK Emissions Trading Scheme, works with the Advisory Committee on Business and the Environment (ACBE) taskforce on the Kyoto Protocol's Joint Implementation and the Clean Development Mechanism, and chaired the development of the International Emissions Trading Association (IETA) position paper on project eligibility for the UN Framework Convention on Climate Change for the 6th Committee of the Parties of year 2000. **Gerald Kohn** is a member of the professional team at EcoSecurities.

Jyrki Salmi, Tapani Oksanen and Markku Simula have co-authored *Chapter 9.3* which is an extract from a longer paper focused on investment demand and supply. **Jyrki Salmi** is Vice President and senior forestry consultant at Indufor Oy, a private consulting group in Helsinki, Finland. He has a background in forest and natural resource economics, with long experience in forest sector planning processes and on financing strategies, including under the Tropical Forestry Action Plan and related mechanisms. **Tapani Oksanen** is Vice President and senior forestry consultant of Indufor Oy, Helsinki, Finland. His background is in forest economics, policy and planning. He has a long career in international forestry development and has been an active contributor to the development of the concept of national forest programmes and its application at the country level. **Markku Simula** is the founder of Indufor Oy and has been its Chief Executive Officer since 1980. He has worked in ITTO, IUFRO and FAO/ECE. His main specialities include international forest and environmental policy processes, policy analysis, the economics of forestry and forest industries, financing mechanisms for SFM, certification as well as carbon sequestration in forests. Simula is also Adjunct Professor at the Department of Forest Economics, University of Helsinki, Finland.

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Hans Gregersen and Arnoldo Contreras-Hermosilla co-authored the summation of private sector papers which is *Chapter 10*. They have co-authored many papers on forestry economics, policy, investment and many other aspects of forestry. **Hans Gregersen** is Professor Emeritus, Departments of Forest Resources and Applied Economics, University of Minnesota, USA. He is currently a member of the Technical Advisory Committee of the Consultative Group on International Agricultural Research and chair of its Standing Panel on Impact Assessment. He has worked for various United Nations organisations and as a consultant to various private and public groups dealing with forests and forestry. **Arnoldo Contreras-Hermosilla** is a US-based former Senior Natural Resources Economist of the World Bank and Principal Economist of the World Commission on Forests and Sustainable Development. He has also worked on economics and policy for the Food and Agriculture Organisation of the United Nations and is now a forest economics and policy consultant.

Chapter 1
Overview and Synthesis of Main Messages

THE OSLO WORKSHOP

The quest for sustainable forest management (SFM), like that for overall sustainable development, has lofty motives. It is important that the ultimate goals be achieved, but many developing countries and countries with economies in transition need international financial, technological and capacity building support if they are to do so. How can they secure this support from the international community? This question has vexed policy makers engaged in dialogue under the United Nations Intergovernmental Panel on Forests (IPF) and Intergovernmental Forum on Forests (IFF) processes; it will continue to do so under the United Nations Forum on Forests (UNFF) launched in 2001.

To provide a basis for further dialogue on financing under the UNFF, the Center for International Forestry Research (CIFOR) organised the *International Workshop on Financing Sustainable Forest Management* in Oslo, Norway, on 22–25 January 2001 (the Oslo Workshop). The workshop was co-sponsored by the governments of Brazil, Denmark, Malaysia, Norway, South Africa and the United Kingdom; it was co-funded by the governments of Norway and the United Kingdom. Its 70 participants came from some 40 countries and had diverse professional backgrounds in government, the private sector, non-governmental organisations, investment institutions, international organisations, and academia.

The Workshop adopted a set of 'Highlights', a set of key messages from which the elements dealing with the private sector have been reproduced as Annex 1. The main report of the Workshop[1] which carries the full 'Highlights' has been issued, and its analysis draws attention to factors that can create an enabling environment for investment by both the public and private sectors.

WHAT IS THIS BOOK ALL ABOUT?

Worldwide, the private sector is expected to play a lead role in economic and production activities, while the public sector provides the supportive policy as well as the legal and other institutional environment for this. Given that national governments of most developing countries have limited financial resources to fund SFM, and that official financial transfers from the industrialised nations to developing countries are limited and not growing, society is increasingly expecting the private sector to fund SFM. However, the participation of the private sector is not as forthcoming as many would like to see.

Why is the private sector not already significantly engaged in SFM? How, and under what conditions, can it be encouraged to invest more? Conversely, how can it be dissuaded from engaging in unsustainable practices in forests? These are among the questions that the international community is still grappling with. The Oslo workshop provided an opportunity to address them. The papers prepared for it are, however, largely concerned with the situation of developing countries with relatively rich forests, where opportunities for private profit are most obvious but where private sector engagement to date has generally focused on unsustainable exploitation rather than responsible management.

This book presents the papers prepared for the Oslo workshop which convey the perceptions and views of the private sector, including:

- a glimpse of the current status of private sector involvement in the forest sector in general, and SFM in particular;
- the main obstacles the private sector currently faces that deter it from making greater investments;
- the desired changes in the policy and operating environment which can make conditions more 'enabling' for private sector engagement.

This first chapter gives a brief background on financing SFM, and a synthesis blending ideas from the papers on the role of the private sector with those from oral presentations and from discussions at the workshop. The next nine chapters are the original Oslo Workshop papers or extracts from them relevant to the private sector, each one constituting a separate chapter. The last part is composed of annexes giving extracts from the 'Highlights' of the Oslo Workshop, and a list of participants.

This publication is deliberately focused on conveying the commercial private sector's perspective on financing SFM, presenting the authors' views as directly as possible. It offers a chance for experts from this sector to state how private investors view SFM opportunities. A surprising outcome is that, in spite of the diverse conditions they face, the contributors from the developing regions of Africa, Asia, and Latin America carry remarkably similar messages.

WHAT IS THE BACKGROUND?

Much of society is interested in saving forests from widespread destruction. The alarming rate of deforestation during recent decades has led to calls by the world community for action in the pursuit of SFM that can balance the ecological, economic and social functions of forests.

The transition from unsustainable forestry to SFM will require a substantial increase in funding from all sources. Chapter 11 of Agenda 21 of the 1992 United Nations Conference on Environment and Development (UNCED) estimated annual funding needs at over US$31 billion to combat deforestation and improve forest management for the period 1993-2000. These investments are beyond the reach of many developing countries, and therefore private capital is an essential major source of funding for SFM.

But there is a challenge: sustainable forest management is a longer-term and more comprehensive approach than traditional sustained-yield timber production forestry. It is also complex, and consequently more expensive, at least in the short term. At the same time, many of its environmental services and some of its non-timber products are at present either under-priced or have not yet been commercialised, and thus bring in little if any revenue. How can the private sector have an interest in SFM under such circumstances? This is one of the crucial concerns affecting private SFM investment decisions, and it comes out clearly in all the papers in this book.

It is now generally accepted that countries that own the forests have the main responsibility for financing the forest sector, since they are the primary beneficiaries of sustainably managed forest resources. Their governments and domestic private sectors should take the lead. However, in the case of developing countries and those with economies in transition, local finance is limited and external funding must complement it. To secure such increased private sector engagement in SFM, the following issues must be addressed:

- Many of the benefits of SFM are public goods requiring public rather than private funding. Will governments be willing to pay their part of the costs and, if they are of developing countries, will they have the capacity to do so?

- A significant share of the benefits of managed forests (as well as the harmful effects of mismanaging forests) spill over political boundaries. How willing is the global community to share responsibility and to provide support to developing countries so that they can practice SFM that delivers such global benefits?

- SFM financing can come from private, public, and philanthropic sources, domestic or external;

- The need for SFM financing is substantial, and beyond the capacity of most developing country governments;

- National governments of developing countries and countries with economies in transition have differing capacities and give varying priority to promoting sustainable forest management;

- Official Development Assistance (ODA) is important but it is not substantial. Neither is it a sustainable source of funding, nor a substitute for private funding. In recent years, all ODA, including that into the forest sector of developing countries, has been declining;

- Developing countries are increasingly disillusioned by what they see as an apparent indifference of the international community to their calls for new and additional financial resources and other support for SFM. They also lament the failure of aid to reach many countries that need it most, or to be co-ordinated so that the limited aid can be more effective;

- On the other hand, developed countries are frustrated that recipient developing countries generally appear unwilling to commit counterpart funding by mobilising their own domestic resources for SFM, to use ODA effectively, and to prepare 'bankable' projects for funding;

- International private-sector investment in developing countries for all sectors, including for forest management and for forest products industries and related trade, is growing. However, much of this private forestry investment flows to only a few developing countries and this is mostly into plantations or industries.

WHAT ROLE DOES THE PRIVATE SECTOR PLAY?

The multiple challenge is how to attract more of this international private investment into SFM, how to make it go beyond the few developing countries currently considered to have acceptable risk and profit levels, and how to create an interest in natural forests other than for mere logging.

In moving forward, it will be important to recognise that there is a variety of private sector actors, all with different interests, capabilities and constraints. One classification recognises the following categories: a) large foreign multinational investors; b) local companies; c) highly regulated companies; d) individual private investment, such as SFM-related conservation activities by philanthropists; e) community investment in SFM; and f) small-scale forest owners. These have, in various

ways, been engaged in owning forests, particularly plantations in some developing countries. The larger ones have had plantations to support pulp and paper or other wood-processing mills, prime examples being seen in Latin America. Some multinational forest-product corporations and domestic companies have started investing more in large-scale forest plantations. Now, privatisation of national public forests is occurring in some developing countries such as South Africa. In Latin America, particularly in Chile, there is also much tree growing by small investors who responded to past plantation incentives. Furthermore, in many developing countries, community forestry has become significant thus enabling forests to be managed by local communities, on subcontract to industry, or to be co-managed jointly by communities and governments.

An encouraging trend is the emergence of interest from large institutional investors, such as pension funds and insurance companies of industrialised countries, in forestlands as a safe investment vehicle. This has contributed to a change in ownership patterns and management emphasis towards more responsible stewardship, but so far mainly in developed countries. This institutional investor interest in forest assets has led to launching of professional investment funds, known as 'Timber Investment Management Organisations (TIMOs)', to manage such portfolios. These form a base for probable continued private sector interest in forest investments, which have increasingly come to be seen as financial assets rather than industrial assets.

Worldwide, most private sector investment is in developed countries. As an example, a recent assessment of institutional fund investors in forestry showed that timber land worth US$7 billion was under management for institutional investors, but three quarters by value was managed in the United States alone. Of the share going to developing countries, much of the external private capital goes to only a few countries, with the focus on profitable business ventures rather than holistic SFM alone. TIMOs are, however, showing increased interest in acquiring lands for plantations in developing countries, and many are advertising opportunities in countries such as Argentina, Brazil, Uruguay, and Chile. Fuller accounts of the attributes and operations of TIMOs are given by Mertz (Chapter 6) and Moura-Costa *et al.* (Chapter 9.2). The TIMOs estimate the funding potential for the forest sector at between US$1 and US$2 billion per year, providing there is capacity to produce a flow of attractive investments. A major shift in new pulp and paper investment can be expected from traditional producing countries to developing countries where plantation wood will be the main raw material.

Private forestry investment is dominated by firms from North America, Europe and other developed countries, but in recent times, smaller, less conservative Asian multinational investors have emerged. They take more risks; they largely engage in natural rainforest logging within Southeast Asia but, due to growing log scarcity there, are securing concessions in the Pacific, Africa, and South America. In Brazil alone, an estimated 7 million ha has come into the hands of forestry companies from developing Asia in the last five years. The high returns derived from unsustainable logging operations seem to compensate for the higher risks taken by these firms.

Some private firms are beginning to invest in forestry for environmental services such as carbon sequestration, rehabilitation of saline soils, conservation or prospecting for biological diversity, and water protection services. Brand (Chapter 7) offers good examples and analysis of current practice and prospects for the commercialisation of services. There is also increasing investment in expanded eco-tourism and outdoor recreation (e.g., fishing, camping, hiking, etc.).

Environmental services yield new revenue streams that are crucial in making the net returns to SFM more attractive, and therefore may help encourage greater adoption of SFM practices by the private sector. Sensing this prospect, some governments are making property rights exclusive enough for private profits to be possible. They are also developing new ways of 'packaging' services so that they can be measured for easy tradability and compensation.

WHAT ARE THE PROBLEMS?

In getting the private sector more interested in forestry, including reorienting its timber-oriented management towards SFM, many hurdles exist. Some of the issues identified by the authors, as well as by the experts at the Workshop, require serious consideration by the international community. The issues include the following:

- The private sector pursues profits, but SFM is not as profitable for private investors as unsustainable forest management or other opportunities. There are often easier and safer ways to make comparable profits, both within the forest sector and outside it. Thus the main policy effort should be to make unsustainable forestry less profitable and to make SFM more financially rewarding;

- The private sector's scope for profit is diminished if it alone has to bear the additional costs of SFM[2] (which include the costs of producing many public benefits) while consumers remain reluctant to pay more for sustainably produced forest products, and public money is not forthcoming to meet the additional costs. As an example of imperfect market conditions, Barney Chan (Chapter 3) presents the example of Sarawak forest products being displaced in the prime Japanese market by imports of timber from the Russian Far East where it is believed that controls are more lax;

- SFM means more regulations and standards to meet. Again, this means additional costs without complementary revenue. As a consequence, SFM products and services cannot compete with non-sustainably produced ones;[3]

- The private sector perceives that society, particularly many environmental groups, does not appreciate that SFM cannot be achieved overnight;[4]

- For practical reasons, the private sector would rather have sustainable forest management pursued at the landscape level. Within a landscape, there can be a mosaic that includes some specialised forests (planted as well as natural production, protection and multi-purpose forests). It does not believe that requiring every single forest stand be managed sustainably for all forest functions is either sensible or feasible;[5]

- The private sector needs an enabling environment with reasonable but predictable laws and effective regulations. In particular, it needs clear and consistent rules on property rights, stable rules for SFM that do not unreasonably raise costs, simple and easily enforced laws, appropriate incentives and effective certification systems;

- The private sector believes that society should accept planted forests as a contributor to SFM;

- Risk is a big issue in any investment decisions. The private sector perceives SFM in general, and natural forests in particular, as a risky investment option in most developing countries. Thus it is takes a very conservative view in assessing risks before investing[6] and would need support to manage risk;[7]

- The private sector is willing to explore markets for some emerging products and services (e.g., carbon offsets, water, biological diversity, soil salinity offsets, etc.).[8] To be encouraged further in this direction, it would like to see conditions created which will support the development of these emerging markets that can improve financial returns to SFM;

- For small-scale private forest owners, there are particular challenges in adopting SFM practices. Therefore, they require additional incentives and supportive policy frameworks.[9]

CONCLUSIONS: WHAT NEEDS CHANGING?

Given the substantial need for financial resources to promote sustainable forest management, countries should not just remove barriers but should explore and encourage all sources and mechanisms of funding for the forest sector. The private

sector should be a key target. On the global scale, the challenge will be to encourage bold decisions so that investment is less concentrated on the developed world, and to seek opportunities in a larger set of developing countries. Within the developing world, the challenge will be to move the private sector beyond its primary interest in logging (rather than management) of natural forests, plantation forestry, and the timber processing industry. Ways must be found to change attitudes and perceptions, and to provide the motivation and incentive to take a longer term and broader view of forests, to take on emerging opportunities, and to place perceptions of risk in perspective.

For this, both the private sector and governments need to adjust their conduct:

- the governments need to play their part in establishing the enabling environment and providing incentives and investment for 'public goods' benefits of forests in partnership with the private sector;

- the private sector in turn should not expect that society owes it everything while its only goal is to reap profits. It has to assume a good corporate citizenship role and it should develop and internalise codes of conduct conducive to sustainable development.

Encouraging the private sector to invest with full confidence and commitment to SFM amounts to creating an enabling environment. "Enabling environment" became a rallying cry at the Oslo Workshop and was referred to in discussions, in many papers prepared for the workshop, and in presentations. It was found to have many dimensions, both domestic and international. To improve the enabling environment, the following areas need attention:

- Correct or reduce the severity of domestic policy and institutional problems that restrain or discourage private sector engagement in SFM;

- Seek strategies which ameliorate or respond to international factors that undermine the enabling environment for SFM investment;

- Avoid excessive and inappropriate regulations and bureaucracy that contribute to unduly high costs of forest management;

- Ensure stable and clear policies, institutions and operating environments, including those that relate to tenure and concessions;

- Have adequate government commitment to, and support for, the forestry sector, and provide public incentives and investment in public infrastructure;

- Seek ways to achieve a level playing field in which forestry has potential to be competitive as an investment option;

- Consider developing instruments, or associating with existing instruments, to hedge against excessive market fluctuations and seek mechanisms for better prices in international markets;

- Provide conditions that reduce perceptions of risk or the adoption of unduly conservative weighting of developing country risk factors, so that SFM investment can flow to more countries;

- Seek ways to deter major markets from buying low-priced supplies from unsustainable sources that unfairly undermine responsible suppliers conscientiously seeking to achieve SFM;

- Help to expand the profit base of SFM investments by creating conditions for income from hitherto little-commercialised environmental services;

- Find ways to attract interest in management, rather than mere exploitation, of natural forests;

- Ensure training and skills development and research for the forestry sector;
- Control, and seek to eliminate, corruption;

- Seek the political stability necessary to assure investors.

In all the above aspects, pay special attention to the needs of small-scale forest owners who need assistance more than larger enterprises.

ENDNOTES

[1] Chipeta, M.E. and Joshi, M. (eds.) 2001. Financing Sustainable Forest Management. Report of the International Workshop of Experts, 22-25 January 2001, Oslo, Norway. Center for International Forestry Research, Bogor, Indonesia. 100p.

[2] Barney Chan (Chapter 3) has observed that 'SFM has too many benefits which are not enjoyed by the private sector alone to be treated as the sole or main responsibility of the private sector.' Raga Castellanos (Chapter 5) has suggested a reasonable alternative for public/private sharing of responsibilities.

[3] In a 1999 review Pearce compiled a useful summary of comparative studies, some showing conventional (and often unsustainable) logging to be 1.5 to 4 times more profitable than sustainable timber management in the short term.

[4] Lack of recognition for incremental progress is criticised by Raga Castellanos (Chapter 5), who charges that some of society's expectations give SFM targets that seem troublesome, expensive and perhaps unreachable. Tomasselli (Chapter 4) stresses that the abundance of laws and regulations to engender SFM achievement causes cost escalation not matched by higher prices for forest products and services.

[5] Raga Castellanos reports lack of acknowledgement by some NGOs and the public of progress toward 'sound practices', preferring instead to insist on full and perfect SFM. He considers this unfair, unreasonable and, according to him, it leads to superfluous costs and restrictions.

[6] Investors in SFM in developing countries often require higher rates of return and earlier payback to minimise exposure. The papers by Mertz (Chapter 6) and Brand (Chapter 7) give the private sector's criteria for assessing investments. The paper by Moura Costa *et al* (Chapter 9.2) provides a useful categorisation of types of risk that the private sector seeks assurance about before making significant investments.

[7] A joint listing of risk assessment criteria from Brand and Mertz is in Box 1 (p. 27) in Chipeta, M.E. and Joshi, M. (eds.) 2001. Financing Sustainable Forest Management. Report of the International Workshop of Experts, 22-25 January 2001, Oslo, Norway. Center for International Forestry Research, Bogor, Indonesia. 100p.

[8] Brand (Chapter 7) has suggested that governments establish property rights for some services of forests that are not currently marketed, thereby providing private or profit-driven opportunities to drive investment. At the same time, they shoud create or expand markets for new environmental services of forests to increase revenues and enable investors to better absorb the higher costs of SFM.

[9] See in particular Landrot and Speed (Chapter 2); Tomaselli (Chapter 4); and Raga Castellanos (Chapter 5). On the certification costs side, see especially Goldblatt (Chapter 8) and Muthoo (Chapter 9.1).

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Most references are listed in the endnotes; the list below covers those not included there:

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Pearce, D. 1999. Recent advances in the measurement and valuation of non-market outputs - can non-market values save the world's forests? *In:* Roper, C. and Park, A. (eds.). The living forest - Non-market benefits of forestry. Proceedings of an international symposium on non-market benefits by forestry. Edinburgh 24–28 June 1996, 5-16. Forestry Commission. The Stationery Office, London.

Chapter 2

Private Sector Investment in Sustainable Forest Management in Humid Tropical Africa

Jean-Jacques Landrot and Steven Speed

Abstract

The objective of this report is to outline the extent of the private sector investment in SFM in humid tropical Africa. In order to meet this objective, the report is broken down into the following five sections:

- Introduction.
- The second section outlines the importance of the private sector in the region and its historical development. The most important points noted are the importance of the forestry industry to countries national incomes, as an employer and in the provision and upkeep of local infrastructures. The dominance of large trans-national companies is noted in terms of their positive role in the above factors.
- The third section looks into the areas where the private sector is already actively involved in financing and implementing SFM practices, giving examples. It was seen that there is a strong will to promote SFM practices amongst companies and that cooperation in the implementation of these practices with various International organisations, NGOs etc is healthy.

- The fourth section outlines the constraints to further investment in SFM by the private sector. These were seen to be a combination of administrative, policy and market failures, all of which act as a barrier to industry confidence in investing in SFM.

- The fifth section introduces the opportunities for increasing private sector investment in SFM, and stresses that all those parties involved from local and international governments, the industrialists themselves, NGOs and local populations etc., have a role to play in improving the environment for financing SFM.

It is concluded that the question of finance for the carrying out of Sustainable Forest Management (SFM) is one that is yet to be resolved, but that the private sector has started to contribute to and carry out numerous sustainable management practices and that it is willing to continue if given 'compensation' for its actions.

Finally, the need for continual partnership formation, and constructive dialogue in striving towards a solution to the financing problem is reiterated.

INTRODUCTION

The Food and Agriculture Organisation (FAO) stated in its publication 'The State of the Worlds Forests' (1999) that there had been a decline in the world's forest area of some 56.3 million ha between 1990 and 1995, 18.5 million of which (33% of the total), were in humid tropical Africa alone.

Obviously the underlying and direct causes of deforestation vary enormously between and within countries. However, it is widely recognised that the principal causes of the loss of forest cover in developing countries are the conversion of forestlands for cultivation as a result of ever increasing demographic pressure (Africa's annual population growth is running at 2.9%, resulting in massive demands for land, fuelwood and water), and to a lesser extent to the setting up of large scale infrastructure. The large disparity between the two causes is quantified by scientists such as Diehl, Bruenig and Myers who consider that the cultivation of forestlands is responsible for over 80% of forest destruction in developing countries.

It is therefore very understandable why the state of the world's forests, notably their surface area, quality and capacity to fulfil multiple functions, is arousing growing concern.

These problems received a great deal of attention at the United Nations Conference on the Environment and Development (UNCED) held in Rio de Janeiro in 1992, where forestry principles were adopted defining those measures that should be taken to manage all types of forest in a 'sustainable manner', to fulfil the social, economic, ecological, cultural and spiritual needs of present and future generations.

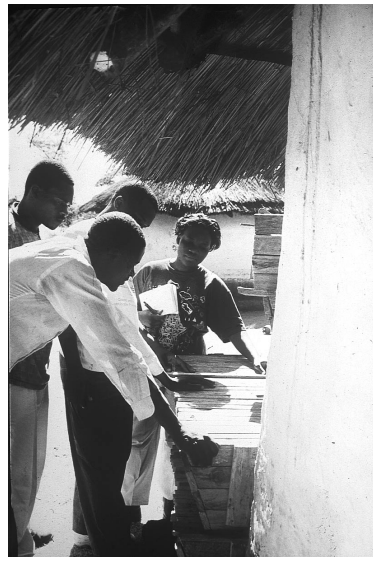
Today, some eight years on, achieving SFM is still a high priority amongst governments and policy makers. Private forestry companies also understand this priority and are willing to practice SFM. However, SFM is not free, and the need for financing to support SFM is substantial in developing countries while the supply of financial resources is limited. Therefore, the question of how to mobilise funding for SFM is today one of the major challenges facing forest policy makers and was deliberated during recent Intergovernmental Panel on Forests (IPF) and Intergovernmental Forum on Forests (IFF) meetings.

The task of achieving SFM in humid tropical Africa primarily concerns governments themselves as the owners of the forest. However, it is usually the private forester who is held responsible for this task. Moreover, debt dissuades many countries from borrowing for forestry programmes where financial returns are not very attractive and benefits are realised only in the long-term. This situation is further aggravated by frequent regional conflicts which hamper any kind of progress.

According to Joshi and Chipeta (2000), the level of ODA is less than the targets set by Agenda 21 for international public funds for the forest sector and it is not likely to increase given that overall public financing for development has been on the decline. Public funds for SFM have generally been lacking and existing funds have not been very effective in reducing deforestation or in achieving sustainability objectives.

One of the reasons is that the multilateral funding agencies and donor institutions are dissuaded from allocating additional resources to forestry in Africa, as most African countries attach low priority to the sector in their development plans. Indeed, according to FAO (1997) Africa receives less than 5% of international investments, with the bulk going to South Africa. Moreover, Africa is the region where a lack of institutional capacity has most impeded the achievement of SFM.

It is also true that many large environmental organisations have never accepted the harvesting of primary forests, resulting in the international community's unwillingness to invest in forestry. In addition, forestry has a number of unique characteristics that make financing forest operations more complex than in some other sectors. For example, long rotation periods are common in forestry; this represents a source of risk and uncertainty.



Therefore, many believe that private sector finance will be the most likely source of funds to make up for this current and possibly future shortfall of public finance for SFM. However, if private forestry companies resources are to be redirected and channelled towards SFM, methods of compensating them for the costs incurred must be found.

The solution to the problem of funding SFM lies in gathering more complete and reliable information to help guide the international policy dialogue towards pragmatic decisions as well as to assess the situation more realistically.

To shed light on the above challenges, this report outlines the existing state of private sector investment in SFM in humid tropical Africa, and discusses the constraints facing and opportunities for further private sector financing of SFM. To put the report into context it is felt that a brief overview of the private forestry sector in Africa is necessary; this will therefore be the subject of the first chapter.

THE PRIVATE FORESTRY SECTOR IN HUMID TROPICAL AFRICA

A brief history of the private forestry sector in humid tropical Africa

Since colonial times European companies have dominated logging activities and timber exports in humid tropical Africa, exporting quartered *Khaya Ivorensis* (African mahogany) and logs of *Aucoumea Klaineana* (okoume) in the last century and at the beginning of this century respectively. This European domination was generally due to the fact that investments, principally in infrastructure, were so great that they could only be met by European firms.

It was not until after World War II however, that the exploitation of African forests began on a large scale, becoming of real significance in national development.

After independence in the 1960s, governments progressively redistributed concessions and logging rights. Nationals profited largely from this redistribution, principally in coastal forests where infrastructures already existed. This resulted in the emergence of a generation of small-scale forest operators. However, their growing numbers have generally been inversely proportional to their financial means and competence, and accordingly unsustainable practices became common. Nevertheless, there still exist many European companies that have been installed in humid tropical Africa for between 30 and 40 years. Today, these companies still have a dominant, if

somewhat declining influence in the sector due to the fact that very few Europeans have entered the business in recent years.

For decades, the export of tropical timber from Africa went almost exclusively to Europe; however, in the past few years increasing volumes of logs have been shipped to Asia (more than 50% in 1998) due to growing demand and a shortage of supply in this region. This change in export patterns is most striking in those countries closest to the coast and with the lowest transport costs, such as Gabon, Cameroon and Equatorial New Guinea.

Much of this wood is being harvested by newly installed Asian companies (especially Malaysian and Indonesian), and several traditional European concessionaires have already been in negotiations to sell logging rights and processing plants to these new investors. Sizer (1999), estimates that up to 80% of all new investments in the region are made by Asian companies. None of these companies have yet established a local processing plant as the purpose seems to be the supply of raw materials to Asian factories, in particular Chinese. These new companies are less discriminate about species and quality, which has therefore resulted in the cutting of larger volumes of wood and of more species.

The importance of the private sector in humid tropical Africa

The exploitation of forest resources plays an important role in the national budgets of many humid tropical African countries, and is second only to petroleum in-terms of foreign earnings (Jeune Afrique Economie 1998); forestry is often first in terms of direct and indirect employment in many countries.

The international community often neglects the particular role of private forestry companies in Africa in the social and economic development of the countries and their fight against poverty. Indeed, such companies are often responsible for building and maintaining important infrastructure such as roads and bridges, in addition to providing schools, hospitals and other services for staff working in processing plants and in logging concessions. Such companies also provide direct employment for around 100 000 people (the vast majority of whom are African nationals), and thousands more indirectly. This role is even more important in remote regions such as Central Africa, East Cameroon, the third Gabonese zone (6 000 jobs in direct employment

and more than 10 000 indirect in this area of Gabon, for example), and the north of the Democratic Republic of Congo. In these last two countries, forestry activity has been the only stable activity to survive during times of war and national unrest.

The private forestry sector in humid tropical Africa is made up of the following parties:

- The large European groups, with a global turnover of US$100 to 500 million per year. These companies are often established in several African countries with business offices and factories and pursue a long-term strategy.

- Asian groups, generally of Malaysian or Chinese origin. These groups have been established in Africa since the mid 1990s. Certain amongst them have since closed down due to the recent Asian crisis, although others have arrived.

- Medium sized businesses, whether they are African national, European or Lebanese in ownership. These businesses often lack technology and financial means. They generally have either very short or medium-term strategies.

- Small national businesses. These are often family or village businesses, generally informal. The small size of their forest concessions, their lack of technology and financial means does not allow them to pursue any strategy other than from day to day. In Cameroon there are now over 800 of these small national concerns and in Gabon, more than 150.

- In many African countries such as Ivory Coast, Cameroon, Gabon and Southern Congo many joint ventures are built up by Africans with political connections but using European or Lebanese workforce/expertise. Here the object is to generate a maximum amount of money in the shortest possible time. It is therefore obvious that SFM and legal preoccupations are far from the objectives of these businesses.

Despite this wide range of parties involved in forestry in humid tropical Africa it has been estimated by the sector itself that more than 50% of forestry harvesting and processing enterprises in certain countries belong to large foreign groups. Amongst the most important are: the Dutch group Wijma; the Italian groups Mussi Bianci and FIP Bruno; the German groups Danzer, Wonneman and Fedmeyer; and the French groups Rougiér, Servant, Thanry, and Interwood.

These and other private sector firms cover some 20 million ha of forest and are traditionally selective in their harvesting techniques, logging vast areas for a few

fashionable species at low intensity (it is not uncommon for companies to extract as little as 2-3 m^3 per ha). In 1997, they were responsible for the harvesting of 5 million m^3 of logs (half of the African total), 2.5 million of which were transformed (processed) within the countries of origin.

AREAS IN WHICH THE PRIVATE SECTOR IS ENGAGED IN FINANCING SFM

We have seen that the private sector possesses limited means to tackle this new challenge of SFM, and that without sufficient compensation for the additional costs that it incurs, its wide spread adoption by the private sector is unlikely. Therefore, implementation at company level has been slow to take effect, as companies fear that changes will result in high operating costs, which they will find difficult to absorb or pass on to customers while remaining competitive in the global market. Despite this, many private industrial forestry companies in humid tropical Africa are at present actively engaged in carrying out/financing various aspects of SFM.

What follows outlines the various actions related to the financing of SFM that have been and are being taken by the private sector in humid Africa. The information is by no means exhaustive, and there are numerous other examples that could have been used to illustrate the private sector's commitment to SFM.

Partnerships, dialogue and cooperation towards SFM

Many private forestry operators are in close collaboration with national governments, research centres such as CIRAD (France) or Wageningen (Holland) and consultants in order to improve the sustainable management of their operations. Examples are:

- In 1999 the Dutch company Wijma invited the Tropenbos Foundation (a Dutch forestry research institute) into its concession for research to provide data for SFM. Wijma has stated that it is committed to implementing all practical recommendations from this report to ensure the highest level of SFM in its concessions. This same company has also been actively involved in financing reforestation schemes in Cameroon, Ivory Coast and Ghana with the help of local NGOs.

- The Congolaise Industrialle du Bois (CIB), with various NGOs, is involved in implementing an ITTO 'biodiversity management and conservation project' submitted by the Congolese government in the CIB forest concession adjacent to a totally protected area (Nouabale Ndoki National Park) in northern Congo. The total cost of the project was some US$1.2 million, of which US$410 000 was contributed by CIB. The objective of

this project is to establish SFM in liaison with fauna management over a surface area of 1.2 m ha. The project is to work in close contact with local people and is to have an educative approach.

- The French group Rougier, with the help of the Gabonese authorities, has helped finance and put into place an anti-poaching strategy and introduce wildlife guards in its concessions.

- Various other companies have established an internal code within their enterprises to tackle the problems of poaching and hunting, for example Leroy Gabon and Bois Tropicaux d'Afrique (BTA), CIB, Pallisco SHM, etc. This code includes the evaluation and monitoring of improvements in forest management, and awareness creation amongst local populations of the importance of wildlife.

Professional training

How can one speak of SFM and efficient industries without having competent forest operators and factory technicians?

Changes in forest management and logging practices can only be realised if employees are well trained and educated. Investing in the training of the workforce is an investment for the future, as these collaborators of today will be the forest contractors of tomorrow.

Most companies have realised this and have started to set up and run workshops on felling techniques, safe working practices, inventory and prospecting. These companies are enthusiastic about the results and are planning to continue with these training programmes. Many companies are also keen to be associated with the regional training of forest and factory technicians such as cartographers, prospectors, fellers, machine operators, grinders, sawyers, rollers, drying operators, etc.

The drawing up and implementation of management plans for SFM

Companies have become aware of the importance of management plans as a prerequisite for SFM and certification, several have therefore started the elaboration and implementation of forest management plans, based on sustained yields and with full integration of social and ecological conditions, examples of which are:

- In Gabon, where CEB/Thanry have already established a management plan of their concession, and many others have begun to establish this same plan. Others have started to elaborate contracts with the government based on long term management planning.

- In the north of Congo, where Danzer, Rougier and CIB are in the process of elaborating management plans of their UFA concessions. These plans concern SFM and assure sustainable social, economic and ecologic development.

- Central African Republic, where ISB with the help of CIRAD and the French development agency (AFD), have recently elaborated a management plan and have started its field implementation.

The forestry management plan is a major investment on the part of companies (who are in effect standing in for the owner governments); therefore, there are few (if any) examples of small national logging concessionaires drawing up management plans for SFM at present. This is for two simple reasons:

It is a financial investment which very few can afford to make to the detriment of other industrial and social investments.

It is very difficult to define SFM in small concessions under short-term allocation.

The creation of associations responsible for the promotion of SFM to the private sector

A further initiative on behalf of the private forestry sector in humid tropical Africa towards SFM was the creation in 1995 of the 'European Foundation for the Preservation of African Forest Resources' by fourteen European industrialists, among them the largest forestry and industrialist investors in Africa. The objective was to create a discussion group and carry out actions for the better management of the forest heritage entrusted to them.

Conscious of their leadership role, and therefore their responsibility towards an entire profession, these same industrialists decided to propose that their colleagues as a whole join in this dynamic action for better overall management. This resulted in the creation of the InterAfrican Forest Industries Association (IFIA), with its headquarters in Abidjan (Ivory Coast) and a secretariat in Paris which it shares with the European Foundation. Together the two organisations represent some 300 companies throughout humid tropical Africa. Foundation members pay an annual membership fee, part of which goes towards the financing and development of professional tools for SFM.

National unions associated within IFIA and the Foundation are indispensable professional instruments essential for negotiating with both governments and investors, and as tools for policy transmission and implementation. Their role is to centralise the common denominator of problems on the part of all African foresters and to try to bring about a communal solution through dialogue with all the parties involved.

This has resulted in the development of contacts and cooperative agreements at the business level with large international organisations such as FAO, the World Bank, ITTO, the European Union, and governments. This cooperation is further reinforced by NGOs such as the International Union for the Conservation of Nature (IUCN), the

Conference on the Ecosystems of Dense and Humid forest in Central Africa (CEFDHAC), WWF, the World Conservation Society (WCS), the Ape Alliance, and many others in areas where the foresters' competence needed reinforcement, such as in relations with rural populations, agricultural and professional training, wildlife management, and biodiversity protection.

IFIA has also formulated a strong cooperation with the African Timber organisation (ATO) to deal with forestry related problems in all countries in Africa where forestry is practised. This necessary cooperation was confirmed during the last ministerial conference (the 19th) of ATO countries in Brazzaville in October 2000. IFIA's primary vocation to date has been to develop a group of actions with the objective of helping African foresters to meet their new obligations towards SFM. The following are examples of these actions that IFIA is engaged in at present to encourage better forest management amongst all small and medium sized forestry companies.

Reduced Impact Logging (RIL)

Work on Reduced Impact Logging has a major impact on the recovery and natural regeneration of the forest after harvesting, in addition to the optimisation of the initial harvest. The project was presented by IFIA, in association among others, with the Association Technique Internationale des Bois Tropicaux (ATIBT), and the Worldwide Fund for Nature (CARPO, WWF). It involves the updating of forest methods, editing of a manual and training sheets, a videocassette, and finally the promotion of these methods amongst smaller forestry companies. The FAO, the ITTO, and the American Tropical Forestry Foundation are also interested in this report, which IFIA hopes to have published from the beginning of year 2001.

Definition of a practical management plan for natural forests

Everyone is talking about the forest management plan but few actually know what it implies. It was therefore seen to be necessary to promote the requirements of such a plan and adapt these requirements to the context of each African country, keeping in mind the need for this plan to be accessible to small and medium sized companies. The project is entirely financed by IFIA, and was carried out by the ATIBT. The study was the object of numerous consultations amongst planners, scientists, environmentalists, NGOs and forestry companies. The outcome of this work will be available from the beginning of 2001.

Code of Conduct

A code of conduct is in the process of being established by IFIA with the collaboration of CEFDHAC/IUCN in order that transnational companies respect exiting national and international laws. The principal objectives of this code are to promote all aspects of SFM and to contribute to the countries economic and social development policies, etc.

If European Foundation members agree to sign and apply this code, it will be the deciding factor for Africa to promote the code to the profession as a whole, and will be a large step towards sustainable management practices.

Formulation, adoption and promotion of a Pan-African Forest Certification (PAFC)

The PAFC approach is based on work demanded by African governments, and was established by the Center for International Forestry Research (CIFOR) for the ATO. The first phase is to be financed by the French Agency for Development (ADF) and the rest hopefully by the European Union and the ITTO.

Foundation member foresters judged that the Principles, Criteria and Indicators (PCI) outlined by the PAFC approach were the best adapted to African specifications, as they had been established specifically for Africa by the largest tropical forest research institute CIFOR, with the cooperation of the ITTO and they have therefore decided to adopt this PAFC. In the next few months, a group of experts must define the procedure and propose an accreditation panel of certifiers. IFIA hope that this procedure, which will bring together all the concerned parties including the NGOs, can be operational from the start of next year.

IFIA presented this PAFC at a meeting in Brussels last June organised by the European Commission and with the participation of most of the world's certification representatives (some 25 in total), such as the International Standards Organisation (ISO), FSC, Pan European Forest Certification (PEFC), and many others. It was decided to establish a mechanism of mutual recognition by the year's end, a type of 'WOOD MARK' which would allow for a finished product composed of products originating from various certifications to be certified itself. This component of traceability is very important and will be settled very soon.

The situations which we have just examined are unfortunately not always as easy and Cartesian to carry out as we have described; let us now examine why this is the case.

CONSTRAINTS FACING THE PRIVATE SECTOR FINANCING OF SFM IN HUMID TROPICAL AFRICA

The optimal implementation and financing of SFM by the private sector is constrained by many factors which act as important obstacles in keeping companies away from long-term investments in improved forest management. These constraints are related to risks and incentives and can affect company profitability.

The following sections outline those constraints that are seen by the private sector to be most important in preventing it from financing and implementing SFM

Poorly defined concession and ownership rights

Property rights refer to entitlements defining the owners' rights, privileges and limitations to a resource. An owner of a resource with a well defined property right

has a powerful incentive to use that resource efficiently, as a decline in its value represents a personal loss.

However, in most humid tropical African countries there are poorly defined property rights over forest resources and their products and services. Lack of attention to these externalities is often the cause of unsustainable forestry in most developing countries. The internalising of these externalities is relatively simple in the case of single ownership, but when different vested interests are at stake, it becomes a political challenge which is far beyond the capacity of the simple concessionaire to resolve.

Poor clarity of property rights causes uncertainty about the supply of logs and this in turn makes investment a complicated and risky exercise. It has resulted in there being tremendous insecurity amongst forestry companies concerning:

- *How long they are able to hold on to their concessions*. In Cameroon, the duration of permits can be as little two years, this is much too short as it does not allow time to establish local infrastructure of any quality or to plan long term. The optimum concession length is seen by the industry to be around 30 years, but such a time scale is rarely granted. Instead, permits are often renewed after the initial time period has lapsed although renewal can take a long time. This incertitude concerning the length of concession permits results in there being no guarantee of a second cut, thus no incentive to manage the forest in a sustainable fashion.

- *The size of concessions*. The size of concessions is important as a forest concession with a substantial area enables the supply of the required volumes to processing units. This is a crucial element since an investment decision will be heavily based on a combination of the maximum production volume of the forest and minimum input volume of the factory. Rougiér stresses that in order to be efficient, concessions should be at least 60 000 ha in size (Form Ecology Consultants, 2000) and should be conglomerated with other concessions. However, in order to carry out SFM, the minimum size of concessions should be realistically around 300 000 ha[1].

Under these circumstances there is no motive to manage forests in a sustainable way or to carry out long-term investment in SFM, as companies can not be sure of holding on to the fruits of their investments. Therefore, the issues of property rights and concession size, etc., are key structural barriers that should be removed before private sector investment in SFM can be expected.

Institutional requirements

Many countries have deficient infrastructure for example railroads are blocked in Liberia, Congo-Brazzaville and the Democratic Republic of Congo, and are in poor

condition in Cameroon and in Gabon where a group of forest concession holders was forced to take control of the *Transgabonais* railway to ensure its proper functioning.

Therefore, the state often obliges forest companies to construct and maintain infrastructure of national interest, for example roads, bridges, airstrips, schools and hospitals. It also imposes a series of fiscal instruments such as taxes, levies and user fees, the administration of which is not consistent and the levels of which are often disproportionately higher than other sectors. These financial requirements weigh heavy on forestry companies and do not permit them to be attracted towards financing SFM.

The commitment of States towards the forestry sector

Many countries possess *inadequate political will and commitment towards forestry*, which includes the failure to include forestry as an essential part of their national development plans. This results in forestry policies that are often outdated, inadequate or conflicting and are not conducive to investment, in addition to an inefficient administration of the public forest estate which is often treated as an open resource with essentially no value leading consequently to unsustainable forest practices.

An example of inadequate political will is the Congolese forestry laws which were developed in 1974. These laws are amongst the most advanced in the region, integrating concepts of forest management with definitions of forest management units and with the need for a forest management plan. However, over two decades later, very few plans have been written and none have been applied in the field. This is due principally to the difficult transport problems encountered when extracting the wood and the reluctance to invest in better infrastructure. Another example is Gabon's forestry laws (which are also very modern) that are still awaiting approval two years after being drawn up.

The stability of States

In many countries *governments are weak and unstable and corruption is rife*. This leads to massive deterioration of the economy, with the activities of all companies being seriously affected. For example, due to civil war in Congo the 1997 timber production was halved to around 300 000 m^3, and one of the foundation members Socobois had its factory completely destroyed. The same happened to Danzer in Zaire. How can the private forestry sector be expected to carry out SFM where the rifle still rules?

These same countries often have strong institutional weaknesses such as inadequate research facilities, lack of trained officials, weak inter-sectoral links and planning deficiencies all of which are not conducive to long-term planning and private sector investment. Indeed, there is a strong correlation between government weakness, corruption, illegal logging and poor SFM.

Market and policy failures

The two factors affecting the economics of SFM and its adoption are *market and policy failures*. To a great extent these economic factors acting against the implementation of SFM arise because there are no markets for many of the benefits derived from such management (i.e., capturing carbon, preserving biodiversity and maintaining scenic beauty), and consequently the investor has to shoulder the costs. This inability to value some of the benefits of SFM results in market failure .

The fact that the state or international community does not often taken any action to correct such market failure, results in policy failure. Policy and market failures result in a situation where SFM is profitable for neither the resource owner nor the resource manager.

Lack of knowledge concerning costs of SFM and its implementation

Few reliable estimates of costs of SFM are available due to the lack of specific information available on SFM implementation in tropical countries, thereby making accurate cost analysis projections problematic.

Various studies have shown however, that over the very short periods of time considered by private forestry companies, the financial profitability of SFM in the tropics is generally much below that of unsustainable methods. Two such examples that outline this are:

- A study carried out by C. Best and M. Jenkins of Forest Trends entitled 'Capital Markets and Sustainable forestry'. In the study it was pointed out that in conventional forest operations total income is derived 60% from timber and 40% from asset appreciation. In sustainable forestry, the division is 35% from timber 15% from other products and 50% from asset appreciation (the value of the forest is higher). If companies cannot secure the benefits from the appreciation in assets then they will focus on timber.

- A recent study stated after an analysis of logging in tropical forests that the traditional non-sustainable logging method is two to five times more profitable than logging in a sustainable way[2] .

Two major factors behind the financial disadvantage of SFM are the extensive nature of management and the slow growth rate of most tropical species (which is between 0.5-2 m^3/ha per year). This growth rate is in most cases not sufficient to outweigh the benefits that could be achieved from liquidating all the commercially valuable timber in the stand in one go.

There is also fairly limited knowledge concerning silvicultural methods for SFM, therefore the long-term benefits of such practices cannot be measured.

As a result of this uncertainty over costs and SFM techniques, a management switch is ever more unlikely as private investors have little financial incentive to adopt SFM practices.

OPPORTUNITIES FOR INCREASING PRIVATE SECTOR INVESTMENT IN SFM

If the private sector is to finance SFM, it must have the incentive to do so. This incentive can only be realised if major policy changes are put into place on the part of all the various parties involved in tropical production forests. The following chapter therefore outlines those areas that could improve private sector investment in SFM.

At local government level

The public sector should make every effort to make private sector investment in SFM secure and commercially viable as there is a clear indication from private investors interested in SFM that they require *stability and reliability in the rules and conditions governing investment*. For this governments need to address inherent barriers to investment in SFM, such as investment risks and uncertainties. For this to be possible, a stable and transparent social, economic, and political environment will remain an important pre-condition. Therefore, governments need to:

- *Establish secure regional forestry development programmes* which prioritise forestry activities, internalise externalities associated with land use and forest policies, maximise rent capture, reinvest a greater share of forest revenues into SFM, and improve coordination.

- Concerning land use problems, there should be a *creation of a clear and permanent definition of national plans for terrain occupation* in: total conservation forests (forest sanctuaries), production forests under sustainable management and conversion forests for agricultural or industrial purposes.

- *Value forest resources properly* and create markets that reward sustainable forest management.

- Encourage private sector investments in forestry through various *financial and tax incentives that are simple, incentive-giving, and remain stable over time*. Simple because complications breed corruption, incentive-giving because very clear signals must be sent to operators, be it on forest

management, industrialisation, social evolution or training. And finally, stable, because faith is based on reference points which, if continually changed, risk the establishment of mistrust.

- *Adopt land and forest legislation, guaranteeing the investor the fruits of his labour*. For example, give companies the right to get back benefits from investments that they have made in forest management, the granting of larger concessions (larger areas are easier to manage sustainably than smaller ones), for longer time periods thus allowing companies to profit from the second rotation. In addition, forest concessions accorded to nationals should not be distributed in order to generate votes, but genuinely to promote entrepreneurs. It is therefore necessary to verify the competence and solvency of beneficiaries and to create an obligation for the direct management of permits.

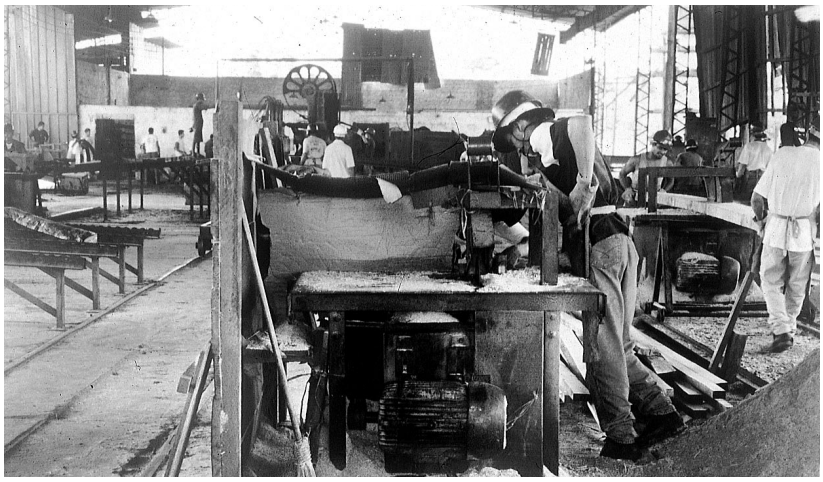
- *Establish a master industrialisation plan so that an industrial capacity superior to the potential of the forest is not created.* Therefore, do not follow the example of the Ivory Coast and Ghana, which presently have serious factory supply problems.

- *Grant incentives for industrialisation,* based on the added value of conversion work, not on the volume entering or leaving the factory.

- *Invest in professional training and research* adapted to the needs of administration but above all adapted to businesses.

- *Share with the region of production part of the profit derived from forests* in order to develop a better constructive relationship between economic operators and populations.

- *Improve respect for the laws* concerning forestry taxes and social regulations.



In turn, foresters will have to show that forestry contributes to a country's economic development. They should strive to sell their sector to the politicians, ensuring that it is included in national development plans.

At the international and donor level

The international community has a responsibility towards those countries undergoing development, and SFM is certainly an area to develop. Moreover, it is evident that none of the actions proposed above are possible without the necessary financial means. It is for this reason that donors have a fundamental and determining role in these actions. Both can help in the following ways:

- Consider *partial debt relief*, which would release funds for sustainable management and give new impetus to investment in the sector. In addition, more ODA could be channelled into the forest sector if an enabling environment is created and if SFM were given higher priority within national development strategies.

- *Aid to offset private investment into aspects for general public gain.* It is clear that in most cases investments in technical and social infrastructure, and the cost of management plans, do not allow the forester to economically bear this extra work for very long-term investments. There should therefore be some form of aid put into place on the part of donors (at present only the French development agency and to a lesser extent the Netherlands have agreed to finance SFM with long-term loans).

- An *'International Forest Fund'* to ensure a flow of minimum sustained financing for SFM activities in developing countries needs to be set up. Such a fund could internalise at least partially some of the externalities and reward forest owners and countries for the public good and environmental services from their forests.

- *Encourage politically and financially, all involved parties* to evolve in their mentalities and actions towards SFM.

- A *dialogue between donors* must be put into place in order *to harmonise*:

  - Policies, notably between economic policies (repayment of debts by the increasing exploitation of forests), social policies (standard of living, development) and environmental policies (freezing of forestry exploitation).

  - Actions and subventions. For instance, before creating a new national organisation, one should make sure that such an organisation does not already exist which could already serve as a base with better economies of scale (example: ATO/CEFDHAC).

- Carry out various *country studies to assess private flows* and trends for SFM.

The experts of international and donor organisations must be experienced and must first listen to and discuss ideas before imposing their policies. Their missions must be carried out over a long-term period and they should take note periodically of the good that has been and is being done by their advice and actions.

At the business level

The following recommendations could help the private sector to strengthen its position within countries, and the profession as a whole:

- *Strengthen union power as an instrument of dialogue*. The transmission and application of a social, forestry and industrial policy.

- *Create investment insurance* against major risks such as civil war, natural or technical disasters (highway disruption, etc.).

- *Evolve marketing techniques*, and examine the potential of innovative financial mechanisms and schemes to mobilise resources for SFM.

- *Provide encouragement and incentives* to follow the code of conduct.

- *Establish a system of cooperation/partnership between large and small enterprises*, covering the aspects of sustainable management, industrialisation and commerce. A cooperative system could be considered.

- *Improve the profitability of the second and later harvests* (see box 1)

- Set up and adopt the Pan African Forest Certification (PAFC), generating the potential for companies to increase market share and thus improving share price performance through the redistribution of the benefits of SFM, whilst avoiding incidents that can damage returns to shareholders.

At the local village level

The success of sustainable management relies more and more on discussing and collaboration with local populations. There can be no forest management if agricultural burning, poaching, or even the mass marketing of forest by-products do not respect this same forest. In a growing population, it appears that customary right must progressively give way to national right, which itself must take into account the specific customs of each region

Local populations must be taught to understand the benefits of SFM and as far as possible be involved in its implementation. This will result in them having a greater respect for the forest and its survival. This is especially important concerning the importance of fauna and commercial poaching. Concerning this problem of bush meat, there needs to be a substitution of wild game protein by that from reared livestock. But this transition should not be to the detriment of the forest (La Lopé workshop, November 2000).

At the international NGO level

There was once a great opposition between the environmentalist NGOs and the private forestry sector. This opposition seems now to be over; most large NGOs have become more pragmatic in their outlook of the situation. They have therefore evolved internally and now recognise the will of the forestry sector to change. However, there are still areas of uncertainty that seem to remain in the policies of certain NGO's, as follows:

- In accepting a degree of modification in the original biodiversity of production forests and accepting new definitions for production forests.

- The economic and social evolution of countries can only take place

Box 1. Profits after the first cut

Due to the extraction of large diameter trees of commercially marketable species at the first cut, a large proportion of the forest value is lost after initial logging, and does not have time to recuperate. Therefore, the second cut only offers a limited potential in terms of lesser diameter trees and species of secondary commercial value. Knowing that the profitability of forest extraction in remote areas is acquired solely through a drastic selection of species and qualities, and that it is almost impossible to raise the minimum logging diameter without negating profits, one can become anxious about the economic profitability of following cuts.

Therefore, *increasing the profitability of the second cut* could be of great importance to future incentives to finance SFM. This profitability could be increased by, enriching the forest in part with the regeneration of commercially marketable species.

In many already degraded forests massive plantation work must be carried out. Africa possesses only 4% of the world's plantations; this blatant discrepancy between Africa and South America and South East Asia has grave consequence for the present and the future. Indeed, in 30 years time there will be a combined decline in the commercial value per m3, due to the exploitation of ever smaller diameters; the productive volume by hectare; and the number of hectares. In fact at present a dramatic deficit in wood raw material is being felt in certain countries such as the Ivory Coast, Nigeria and Ghana at least when it comes to providing outlets to local and regional markets. Moreover, most of the world's plantation timber is currently sold at an FOB price below US$100, which simply represents the transportation costs (truck or train) of most African timbers. We can therefore be really pessimistic regarding the future competitiveness of African timber originating from natural forests as only several m^3 or tens of m^3 per hectare are extracted, whereas world plantations now have production capacities of several hundred m^3 to the hectare, and are mostly within proximity to ports (Chile, New Zealand, Brazil, etc.). Provided that one can remain rational in the balancing of ecological and economic criteria, we can therefore affirm that the enrichment of primary production forests and forest plantations is essential to the future of the African continent. Governments and donors should take note and accelerate the concrete establishment of a plantation policy, many private forestry companies are ready to join in.

Finally, many are also suggesting that plantations will relieve the pressure on reserve forests (sanctuaries) and even on primary production forests.

progressively. Foresters wish to participate in this development but cannot be held responsible for the weak economic level of developing countries.

- The problem of ethnic minorities concerns the state. Foresters wish to facilitate the integration of these minority groups, but cannot assume the responsibility for this integration.

- The destruction of fauna is a concern for all village populations and for humanity as a whole. Foresters wish to participate in the safeguarding of this genetic heritage, but cannot alone be held responsible for its destruction nor bear the costs of correcting it.

- The confusion between total protection forests, production forests (where foresters are operating), and conversion forests (those that are subject to slash and burn agriculture) has also often been used as propaganda by Western environmentalists. This confusion of terms and responsibilities which can twist the spirit of the consumer is very damaging for the consumption of tropical wood and the development of African countries.

- The NGOs must not try to resolve local problems by imposing their own Western conceptions, but instead be realistic.

- The link which has been forged by the promotion of Certification by the Northern media between sustainable forest management and deforestation, appears to us to be very harmful. What will happen to the consumption of tropical timber when the northern consumer discovers that despite the certification of tropical products that he buys, tropical forests continue to burn and wildlife to be destroyed for consumption? This question must be of concern to Western NGO's and environmentalists. The causes of deforestation are far more complex than simple SFM and certification issues; for example, in Ivory coast only 2 million m^3 per year are harvested for the wood industry in comparison to some 15 million for fuelwood and 50 million for agricultural projects.

All these measures are concrete examples of pragmatic solutions, which if adopted would certainly increase the profitability of SFM systems, thus increasing the likelihood that they would be accepted by the private sector in the future.

CONCLUSION

The sustainable management of tropical forests has become a priority due to increased deforestation, chiefly as a result of forest clearance for agriculture (estimated to be responsible for more than 80% of forest loss) and to a lesser extent to traditional logging techniques. However, its financing has been and remains a major 'stumbling block' to its widespread implementation.

This report proves with numerous examples that the private sector has already, and continues to be willing to incorporate and help towards part-financing SFM practices, but before this trend becomes the norm, there are a number of fundamental barriers that need to be overcome to provide the private sector with the incentive to invest further in SFM:

- For example, if market and policy imperfections such as land tenure, user rights and resource security together with appropriate legislation were corrected, the relative profitability of SFM would certainly rise, increasing the likelihood that its financing would be accepted by the private sector.

- In addition to correcting these imperfections, if SFM is to be widespread, current evidence needs to be augmented substantially before it can be concluded that SFM will be a better land use alternative than unsustainable practices in terms of profitability.

- An important question that needs to be addressed is, 'Who benefits from the wider aspects of SFM?' The answer is the whole of mankind. Therefore, financing should be a joint effort and not just at the expense of the private sector. To this end, more funding should be channelled into SFM from all sectors.

- In addition, the importance of developing partnerships amongst all sectors cannot be overemphasised in order to arrive at a realistic forestry policy which is beneficial to all parties concerned. This is one of the biggest challenges facing policy makers today, and will continue to be so for the foreseeable future.

- Finally, the future of the importance of natural tropical forest exploitation is uncertain, faced with ever increasing areas of plantations and substitutes for tropical wood such as plastic and metals. However, what is certain is that if greater implementation and financing of SFM are employed, tropical forest 'survival' will be assured.

ENDNOTES

[1] This area could allow an annual cut of 10 000 ha over a period of 30 years with an average cut of 6 m^3h/a having a potential of 60000 m^3 per year; it would allow long-term plans to be drawn up for investment in social infrastructure and processing plants.

[2] Despite this evidence, foundation members feel the difference is exaggerated, especially for the larger companies who already implement good practices which are profitable.

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Chapter 3

The Private Sector and Sustainable Forest Management — Southeast Asian Perspective

Barney S.T. Chan

Abstract

Sustainable forest management (SFM) has too many benefits which are not enjoyed by the private sector alone, therefore the public sector is a critical partner in implementing SFM. In Asia, the timber business currently faces critical commercial problems like market saturation, weak demand and market failures. These problems create the following concerns: (1) SFM needs both private and public sector involvement, (2) international markets have yet to recognise SFM, (3) tropical against temperate timber, and (4) pivotal role of planted forests. These concerns can be addressed if the United Nations Forum on Forests (UNFF) creates a new fund specially for planted forests, supports SFM with new instruments/mechanisms and small encourages the private sector to carry out relevant training, research and development towards SFM.

INTRODUCTION

A personal view

Nobody can truthfully claim he can give a truly Asian perspective on such a complex issue when you consider how vast Asia itself is in terms of national forestry initiatives, national development aspirations and stages of national economic development. I certainly cannot speak on behalf of 60% of the world's humanity[1]. However, through my own work, I do know about the East Asian tropical timber trade and industry in general and about Sarawak, Malaysia in particular. My own experience is derived mainly from a production country in Southeast Asia with a high percentage of forest cover which exports mainly to South Korea, Japan, China and Taiwan. With the above caveats in mind, this paper is essentially a first-person narration of personal opinions.

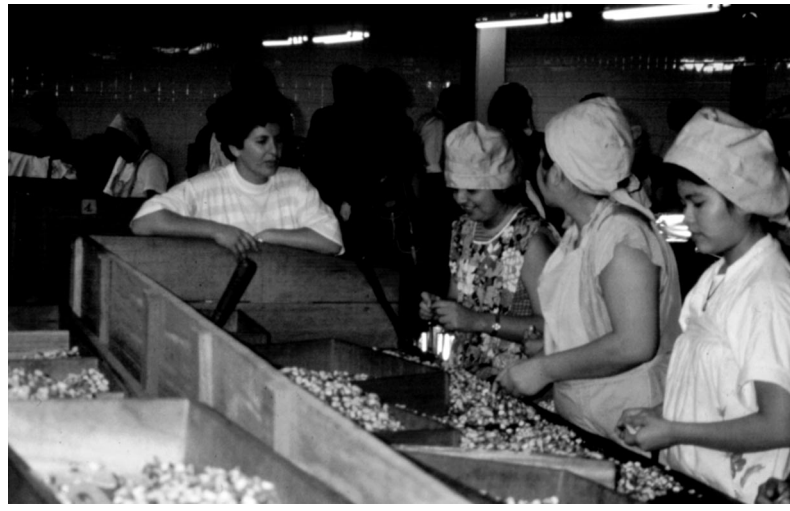
Though it was not stated as an objective, this Workshop nevertheless gave an opportunity to expose the private sector's perspectives to the various proponents and detractors of the United Nations Forum on Forests (UNFF). It allows a rare opportunity for the private sector to ask: why has the private sector been targeted to carry the financial burdens of sustainable forest management (SFM)?

This paper shall argue that the benefits of SFM go well beyond the confines of the 'private sector' and hence the financial burdens of SFM should be shared by all the recipients of those benefits.

After the United Nations Conference on Environment and Development (UNCED) in June 1992, the world witnessed the formation of the Global Environment Fund (GEF) by the World Bank, the United Nations Development Programme (UNDP) and the United Nations Environmental Programme (UNEP). Unfortunately, GEF funding is applicable for forestry projects only if there is a strong biodiversity conservation element in the projects. SFM by itself is not attractive to GEF funding though the role of biodiversity is mutually recognised. Of late, the world has watched the negotiations breaking down for implementation of the Kyoto Protocol in the Convention on Climate Change. The international government-to-government initiatives on Biodiversity and Climate Change are attracting all the attention, and most of the limited funding, away from SFM.

Where is the new and additional financial aid promised by the developed countries to help the developing countries move towards SFM? Is it the breakdown of such promises that brought the private sector unfairly into the limelight, to step in and finance SFM in the absence of new and additional government expenditures?

Let it be very clear that the ambits of SFM are far too wide and complex for the private sector to tackle by itself. The public sector has to do much more, especially on elements of the forests that do not produce direct profits for the private sector.



A NOTE ON PRIVATE INVESTMENTS

Private investments are profit motivated. The goals, functions and activities of private companies are geared towards the generation of profits. Management does not put a high priority on work which increases costs but does not contribute to a profit centre. However, recent developments indicate that more and more companies are moving towards 'good corporate citizenship' where non-profit efforts are tolerated and even encouraged. This is mostly in relation to employee welfare and local communities. Still, SFM will only take place if it is economically feasible to the timber companies.

This does not necessarily brand timber companies as 'eco-pirates', or whatever terms is used to denote a lack of care for the environment; rather it highlights the difference in perspectives and priorities. In recent years, Asian private investors have been struggling with three critical problems; though these problems are not related to SFM *per se*, they are nevertheless significant problems of a commercial nature:

- Market Saturation. The production of timber and timber products in Asia can more than satisfy the demand in the region, hence the importance of exports beyond Asia. As a product, plywood will illustrate the implications of this situation well. Plywood is the most significant processed forest product for the region which has a bearing in international markets. Indonesia and Malaysia alone produce something like 10-12 million m^3 of plywood a year, which is more than enough to supply the entire world demand for tropical plywood (given the current weak market conditions). The oversupply has pushed prices down to an extent that the survival of producers is at stake. In such a scenario, it seems very unlikely for any new investments to go into tropical plywood production.

- Weak Demand. The traditional buyers of timber and timber products in Asia are Japan, South Korea, Taiwan and China. They have been joined recently by Thailand and Philippines, which were once exporters themselves. The biggest buyer, Japan, has been struggling for years with a weak economy and Japanese demand for new houses has been on the decline for the last several years, from 1.7 million units in 1990 to 1.2 million units in 1999. China over the last few years has turned more to her own supply of timber and new Russian supply, thus hurting the traditional producers (more on this later). Current weak demand and market sentiments are far from conducive to any investments.

- Market failures. Timber is a commodity and like all commodities it faces the boom-and-bust cycle. This unpredictability is a damper for any investments. One of the many market failures is the lack of an instrument to hedge against future market changes. Another failure is the lack of a price determination mechanism in international markets. These failures need to be addressed to create a more transparent international market for sustainable investments. Without this, prices which are not remunerative will only force producers to cut corners, maybe at the expense of SFM. Moreover, the presence of illegal activities in the forests is a major disincentive for legitimate companies to carry out SFM.

CRITICAL PRIVATE SECTOR CONCERNS

An understanding of the prevailing business climate in Asia, especially of the three problems outlined above, will form the basis for the discussion that follows on concerns facing the private sector in the timber business and industry. These concerns are critical and have strong effects on the entire investment process. The concerns are grouped under the four headings below.

Concern 1. The private sector and SFM

Most countries in Asia are members of the International Tropical Timber Organization (ITTO) and therefore subscribe to the decisions made under the ITTO process. Asians choose to accept the ITTO's definition of SFM amongst the many definitions floating around. Producer countries in Asia use the 'ITTO Criteria and Indicators for sustainable management of natural tropical forests' (ITTO 1998) as these were debated and agreed upon by all the 56 ITTO member countries.

There are seven criteria (see Appendix 1.) in the ITTO Criteria and Indicators (ITTO C&I) and they have indicators which have differing impacts on either the National Level or the Forest Management Unit (FMU) level. 'National Level' in this

sense refers to activities carried out by government agencies which generally cover the entire country. FMU refers to 'a clearly defined forest area, managed to a set of explicit objectives and according to a long-term management plan'; generally speaking, this management is undertaken by the private sector.

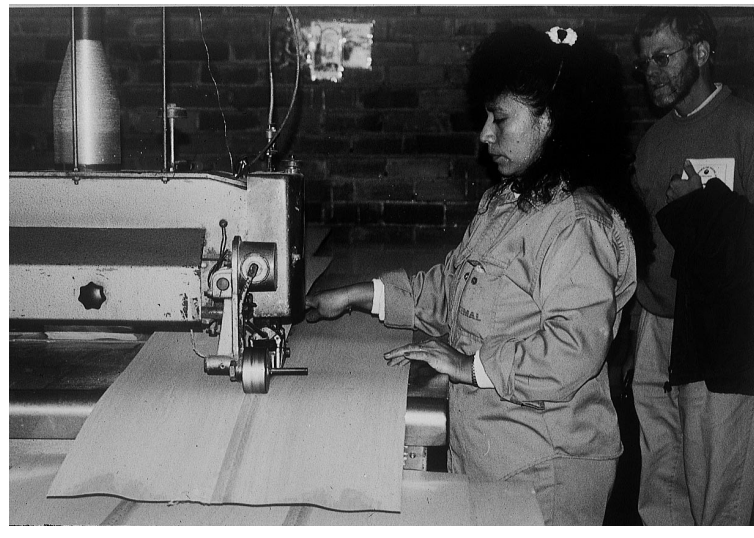
Of the seven criteria in the ITTO C & I, only three have indicators with direct impact and one with indirect impact on business decisions (thought it is admitted that the other criteria have some sort of intangible impact). The following criteria have little or no input into the decision making process of running profitable private companies:

- **Criterion 1. Enabling Conditions for SFM.** The private sector has no decision making control in the legal and institutional frameworks of a country.

- **Criterion 2. Forest Resource Security**. This is more on national planning and land use policies in which decisions are made by the government.

- **Criterion 3. Forest Ecosystem Health and Condition.** This covers the effects of humans and nature on the biological functioning of the forests. Logging is but one of the many human activities listed.

- **Criterion 5. Biological Diversity**. Not the prime interest of private companies though the actions of such companies may impact adversely on biodiversity.



The four points listed above confirm the importance of the public sector in SFM; at least it is obvious that both public and private sectors must work together in order to achieve real SFM. The private sector alone will not be able to do so.

Concern 2. Markets choose not to recognise SFM

By and large, major international markets for timber and timber products have yet to respond to SFM initiatives. There is no affirmative support by the markets for actions towards SFM. Rather, the market punishes SFM!

As the private sector is profit motivated, it reacts to SFM efforts by measuring the incremental costs and then factoring those costs into prices. This is true for both the producer and consumer of timber and timber products.

A key factor in sustainable forest management is the production of logs. The process of logging can either contribute towards or destroy SFM. The example of log production and log exports in Sarawak is very telling.

At the request of the state government, the ITTO sent a Mission to Sarawak at the end of 1989/start of 1990, basically, to check if the log production there is sustainable. The Mission eventually recommended steps to be taken for Sarawak to move towards sustainability. These steps were difficult to implement and came with high costs.

Generally, there have been considerable improvements in forest management in Sarawak since the ITTO Mission of 1989/1990 though there have been no further studies to quantify such improvements. However, one can assume that log production costs have increased since 1990 as loggers adopted new and more complicated methods of working. Let us discuss the log exports with these two points in mind.

Table 1 shows a steady decline in log exports from Sarawak to Japan, with a corresponding increase in log exports from Russia to Japan. *The increased SFM efforts by loggers in Sarawak were neither rewarded by higher export volumes nor better prices; rather, the Japanese switched to cheaper Russian logs in order to maintain their profitability* (see Box 1, see also Box 2 for China). A recent Report said that more than 90% of the logging in the Russian Far East is by clear cutting and as much as 40%-50% of Russian timber is sold to Pacific Rim countries under dumping prices and faked contracts (Friends of the Earth 2000). The same report stated 'forestry practices in Far East and Siberian forests are destructive and unsustainable'. Be that as it may, the fact remains that Russian logs are sold cheaply.

The Japanese markets deemed Sarawak logs to be more expensive than Russian logs, hence the substitution of Russian logs for Sarawak logs.

Concern 3. The tropical versus temperate timber debate

It cannot be denied that over the last ten or so years, discussions on the sustainability of tropical timber have brought on the Tropical versus Temperate timber debate; the ramifications of this debate do have an impact on private sector investments.

Table 1. Japan Log Imports (Unit: '000 m^3)

Year	Total South Sea	Sarawak	Russia	New Zealand	Africa	Total Logs
1991	10 114	6 684*	4 303	1 604	96	16 117
1992	9 969	6 418*	4 268	1 812	100	16 149
1993	7 438	4 924	4 985	1 539	512	14 474
1994	6 802	4 462	4 847	1 757	652	14 058
1995	5 925	3 905	5 464	1 754	531	13 674
1996	4 781	3 486	5 448	2 045	626	12 900
1997	5 233	2 826	6 134	1 799	666	13 832
1998	3 192	1 976	4 761	1 805	153	9 911
1999	3 404	2 013	6 096	1 511	202	11 213

Sources: Japan South Sea Logs Association, Japan Lumber Importers' Association, Ministry of Finance, Japan, and *Department of Statistics, Malaysia.

The root cause of this is ironically some environmental NGOs that were trying to address the issue of sustainability by focussing mainly on biological diversity, genetic resources, carbon sinks (global warming), species extinction, wildlife and local communities. 'Ironically' because these NGOs have identified and interpreted the errors and problems they perceived in tropical forest logging, but the very same NGOs have been slow to come up with solutions or at least a road map for the tropical countries to follow.

In their zeal and enthusiasm, these NGOs organised boycotts and demonstrations against the use of tropical timber and timber products in the consumer countries (mainly Europe initially). However, tropical timber trade can only take place when there is a producer and a consumer, so both producers and consumers are responsible; they are two sides of the same coin. These NGOs are concentrating on the wrong side of the coin, instead, they should also help the producers.

It has been observed that Japanese users are moving away from tropical timber and replacing it with unsustainably-produced temperate timber (for example, see Table 2). And this has a big impact on investment sentiments.

In the Asian region, tropical timber overwhelms temperate timber in production volume and, more importantly, in export volume. Therefore, in the Asian context, private investments in the production of timber and timber products will factor in the perceived discrimination by the international markets towards tropical timber. This bias will distort the investment calculations. On the other hand, investments by consumers are moving away from tropical timber into temperate timber (e.g., recent plywood manufacturing capacity in Japan using temperate logs).

Perhaps in all fairness, can the above be attributed to a short-term adjustment due to the environmental NGOs' concerns? In the long term, one hopes that the playing field between Tropical and Temperate timber will be levelled. As it is today, there are several big bumps in the playing field.

Figure 1. Logs Imported into Japan for 1991-1999

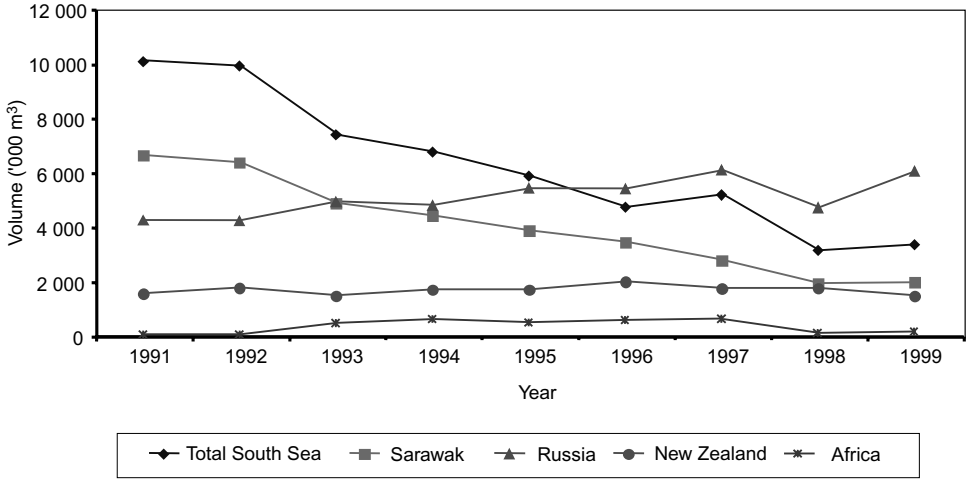


Table 2. Japan Plywood Production (Unit: '000 m^3)

Year	Plywood from Southsea Logs	Softwood Plywood	Total
1993	6 969	254	7 223
1994	6 040	457	6 497
1995	5 512	517	6 029
1996	5 044	778	5 822
1997	4 755	914	5 669
1998	3 258	816	4 074
1999	3 101	1 003	4 104

Source: Japan Plywood Manufacturers' Association Reports for STA/JPMA Plywood Dialogue

Forest certification is one such big bump. For all its favourable points, forest certification has been 'forced' (though everyone says 'voluntary') on the tropical forests while the temperate forests, with all their environmental concerns, are not scrutinised by the consumers in general. *[I recognise, of course, that this very Workshop in Oslo is part of a long process to address this disparity in the world's forest dichotomy!]*

In the long run, one hopes that forest certification, and subsequent timber certification, will become a marketing tool to promote SFM; but in the short term right now, it is a discriminatory tool. Moreover, forest and timber certification adds to production costs; these additional costs are not reflected in selling prices yet.

Private investors will continue to pay close attention to the ongoing debate by the users of timber on Tropical versus Temperate.

Concern 4. The pivotal role of planted forests

There are real moves, by the Asian private sector, towards investments in planted forests and therefore an opportunity for influence by appropriate financial instruments.

Discussions of tropical and temperate timber eventually boil down to natural and artificial forests. There are claims that timber from temperate planted forests is 'green' and consumers can use it without any fear of harming the environment (though with some caveats). Similarly, there are claims that timber from old growth temperate forests is considered bad for the environment. The same arguments can be applied to tropical timber except that there is currently very little timber from planted forests in the tropics. This is an area which will attract considerable investment attention in the near future.

Investors are keen to plant trees in the tropics. The reason is purely economics. Planted forests are more efficient in producing volumes of timber than natural tropical forests. Production costs of timber from natural tropical forests are high when compared to those of temperate plantations (e.g., the cost of Sarawak meranti logs versus New Zealand pine). Industrialists in the tropics fear that they may be priced out of international markets if they do not have cheaper log inputs because the end consumers are not discerning in terms of the inherent quality of timber.

On the plus side, rightly or wrongly, some private investors feel that planted forests will take the pressure away from production in the natural forests, though this seems to imply that production in the natural forests is 'bad' or at least not sustainable. Moreover, in the context of global warming, it is certainly useful to have significantly more areas under forests in the world.

On the minus side, tropical plantations face the same environmental issues as temperate plantations: mono-culture, ugly landscape, exposure to pest and disease attacks, exotic species, etc. However, these issues can be properly addressed and mitigated to an acceptable level.

In short, planted forests in the tropics will take place and should be encouraged actively in many countries with severe forest degradation, in or outside Asia. One of the many problems faced in establishing planted forests is in the finance side; *and this should be vigorously addressed in the UNFF.*

As it is, tree plantation developments are hindered by a lack of funding because traditional banking instruments were not designed for projects which such long gestation periods. Moreover, tree plantations have to compete against other agricultural plantations that may be more financially rewarding.

PROACTIVE PRIVATE SECTOR IN UNFF

This Workshop in Oslo is a follow up to the IPF/IFF process, in particular, to deliberate the mobilisation of financial resources for sustainable forest management and to come out with concrete proposals on finance.

Whilst the private sector can only blame itself if it does not make a case for itself, the private sector can also blame the international fora for not taking it seriously. All blames aside, this is the time for both parties to make a concerted effort to place the private sector prominently on the UNFF agenda. *Proponents of the UNFF process must recognise that the private sector is a major stakeholder in SFM and must, accordingly, be very actively engaged in the due process.*

The above four main concerns explain the reluctance of the private sector to go into new investments in the Asian timber business and industry. But a proactive distillation of those four concerns point to the essence which is lacking in the private sector; the essence which with well designed financial instruments, society can encourage, or even force, the private sector towards SFM. The missing essence can be addressed by way of the following four concrete proposals:

- **Market Instruments/Mechanisms**. *The international markets for timber and timber products must respond and send the correct signals whenever products are from SFM sources. Good SFM practices must be financially rewarded.* New market mechanisms must be developed (e.g., Carbon trading, an international market for certified timber) to address not only Reduced Impact Logging but also the other non-timber aspects of SFM (e.g., conservation of biodiversity, forest eco-health, legal conditions). New markets must be developed to recognise products with a sustainable life cycle (e.g., use of timber against aluminium/steel in house construction). Non-timber forest products must be brought into the mainstream of international marketing so that their real values can be ascertained;

- **New Fund for Tree Plantation**. The case for this was made above (see Concern 4) by way of two problems. Firstly, *traditional bank loans cannot cover the development of tree plantations because of the long gestation period even for the very fast growing species.* Secondly, investors are spoiled for choices. Studies have shown that, for all the benefits to mankind, tree plantations are not attractive investments when financial returns are studied. (An example of this can be seen in Indonesia and Malaysia where oil palm plantation investments are very active by comparison to tree plantations). *A new type of fund must be created to break through the current banking barriers* and to overcome the above two problems. UNFF must be engaged in the planting of more global forests by owning this new fund specially designed for planted forests;

- **Training**. Without a doubt, SFM is not possible without skilled and trained manpower. Unfortunately, 'training' is a major distraction in many international fora. The debates are endless in, say, FAO and ITTO circles, about the importance of training, and then an appeal is made for financial

assistance which presumably leads to an execution of the much needed training itself. However, closer inspection may expose the inappropriate level and quality of said training. *In the case of the tropical world, there is a lack of home-grown expertise, so often experts with temperate experience are used for training. The tropics must develop their own training institutions as a cornerstone for SFM*. Here the benefits of privatisation can also be reaped: the private sector must be encouraged to train, and to train intensely as an ongoing non-stop process. However, without appropriate financial instruments in place, this will never take off;

- **Research and Development**. In general, R & D are carried out by the public sector, thus it is necessary to use some financial instruments to nudge the private sector into this critical arena where its very existence will be determined in the long run. But, the private sector will only handle short-term R & D with direct benefits for profitability; long-term and fundamental R & D often has to be left to the government agencies. Here lies a significant problem: the private sector is not party to the design of the R & D programmes. Right now, there is very little economic research in the timber business; for example, why are the prices not remunerative in tropical timber to reflect its inherent quality?. Why is there no R & D on price stabilising mechanisms like, say, a plywood futures market? This type of work will form the basic fundamentals which an investor can call upon to make his decisions.

In conclusion, there is nothing very extraordinary about the above four proposals (except the direction of R & D). Many international fora have tossed them around enough times for years. The only extremely significant difference this time is that the proposals are made by the private sector.

The private sector must have a hands-on participation, and ownership, in developing the four proposals into solutions that will not only profit the private sector but also ensure SFM for global forestry.

Box 1. Japanese switching from tropical to temperate logs

The Japan Lumber Reports reported on the release of statistics of lumber and plywood by the Ministry of Agriculture, Forestry and Fisheries.

Quote:

> 'In an attempt to escape from heavy dependency on south Sea hardwood logs and to diversify sourcing of material logs, plywood mills shifted to using more softwood logs like Russian larch and New Zealand radiata pine. The prices of these species are overwhelmingly lower than south sea hardwood logs. Such superior cost performance has contributed to develop the market for softwood plywood in the housing sector, such as for structural panel and roof sheathing.'

Source: Japan Lumber Reports. 26 May 2000. No. 324.

Box 2. China Log Import Trends

Deputy Secretary General of the China Log Distribution Association, Li Xiaobin, reported on the import trends for the first nine months of 2000:

- Log imports were 10.06 million m^3 or up 43% over the same period last year. It was expected that total imports for the year 2000 will exceed 13 million m^3, an all time high for China.
- Orders have changed from bulk order of single species to smaller orders of a variety of species. This satisfies the diversified markets of China.
- Log imports from Russia increased sharply to 4.65 million m^3, an increase of 55%. It was expected that the total imports from Russia will be 5.8 million m^3 for the year 2000.
- Russia is expected to be the main supplier of logs. In 1999, Russian logs made up 38% of all imported logs. By September 2000, that share rose to 46%.

Source: Tropical Timber Market Report. ITTO, 1-15 December 2000

China Imports of Russian Logs, 1995-1999 (m^3)

Year	1995	1996	1997	1998	1999
Logs from Russia	357 788	529 374	949 324	1 591 272	4 304 946
Total Log Imports	2 582 601	3 185 483	4 470 669	4 823 042	10 135 683
Russian Logs, % of total	13.9%	16.6%	21.2%	33.0%	42.5%

Source: Chinese Customs Yearbook (1995-1999). Quoted in *Plundering Russia's Far Eastern Taiga.*

Box 3. Philippines: from exporter to importer

After 12 years, the Senate and House of Representatives decided to present a common bill on forestry, entitled the Sustainable Forest Management Act, 1999. This sought to make it a policy of the Government to ban commercial logging in natural primary forests.

The dependency of the final action by Congress on this bill, and the fact that other bills do not offer many incentives, has stymied plans of the wood industry to develop forest plantations, invest in re-tooling of wood processing mills and undertake marketing networks.

The capability of tree plantations to supply industrial roundwood is suspect as its capacity is estimated at 400 000 m^3 a year while the annual requirements of the country are around 2.5 million m^3. Logging in the residual natural forests currently yields 600 000 m^3; but if full access is allowed, it may produce 2.0 million m^3 of round logs.

Thus, the wood industry has to rely on increasing imports of logs, lumber and veneer to meet the domestic need of the country for wood materials.

Adapted from the Philippines Country Report, Asia Pacific Timber Organisation, twelfth meeting, 12 Nov. 1999, Hong Kong and *Pers. Comm.* L D Angeles (ED, PWPA)/Chan.

ENDNOTES

[1] In 1997, the population of greater Asia was about 3.5 billion out of a total world population of 5.8 billion. Pocket World in Figures. The Economist, 1999.

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APPENDIX 1

ITTO Criteria and Indicators for Sustainable Management of Natural Tropical Forests

No.	Criterion	Description
1.	Enabling Conditions for Sustainable Forest Management	This criterion addresses the general institutional requirements that are necessary to make sustainable forest management possible. Most of them cover the legal and institutional frameworks and are mainly descriptive in nature. Taken together, the information gathered indicates the extent of a country's political commitment to sustainable forest management.
2.	Forest Resource Security	Sustainable forest management is a long-term enterprise and depends critically upon the stability and security of a nation's forest estate. Hence, this criterion lays the basic foundation for sustainable forest practices. It considers comprehensively the extent and percentage of land under natural and plantation forests, the needs for conservation of biological diversity and the aspirations of present and future generations in relation to forest goods and services in the overall context of national economic planning, as well as in the quest to achieve sustainable development.
3.	Forest Ecosystem Health and Condition	This criterion relates to the condition of a country's forests and the healthy biological functioning of its ecosystems. Forest conditions and health can be affected by a variety of human actions and natural occurrences, from air pollution, fire, flooding and storms to insects and diseases.
4.	Flow of Forest Produce	This criterion is concerned with forest management for the production of wood and non-wood forest products. Such production can only be sustained in the long-term if its is economically and financially viable, environmentally sound and socially acceptable. Forests earmarked for timber production are able to fulfil a number of other important functions such as environmental protection and the conservation of species and ecosystems. These multiple roles of forest should be safeguarded by the application of sound management practices that maintain the potential of the forest resource to yield the full range of benefits to society.

No.	Criterion	Description
5.	Biological Diversity	This criterion relates to the conservation and maintenance of biological diversity, including ecosystem, species and genetic diversity. At the species level, special attention should be given to the protection and of endangered, rare and threatened species. The establishment and management of a geographic system of protected areas or representative forest ecosystems can contribute to the maintaining of biodiversity.
6.	Soil and Water	This criterion deals with the protection of soil and water in the forest. This is best ensured by specific guidelines for different situations; to monitor the quality of soil and water in the forest and aquatic ecosystem, and also downstream water quality and flow.
7.	Economic, Social and Cultural Aspects	This criterion deals with economic, social and cultural aspects besides those mentioned under Criteria 4, 5 and 6. As a sustainably managed forest is a constantly self-renewing resource which produces a host of benefits, it can enhance the quality of life of the population and contribute to the sustainable development of the country.

Source: adapted from Criteria and Indicators for sustainable management of natural TROPICAL FORESTS. ITTO, July 1998. Manual for the Application of Criteria and Indicators for sustainable management of natural Tropical Forests, Part A and Part B. ITTO, May 1999.

Chapter 4

The Private Sector and Sustainable Forest Management – South America Perspective

Ivan Tomaselli

Executive Summary

South America is a large continent and most of its land is still covered by forests. As in other parts of the world, countries of the region have for many years considered forests as an obstacle to development and to have relatively low economic importance.

The total forested area in Latin America is around 880 million ha. Most of it is natural forest located in Brazil, Peru, Bolivia and Argentina. Forest plantation area is relatively small, only 8.8 million ha, but the plantations have an important contribution to the socio- economic development of the region.

Most forest plantations, which are particularly important in Brazil, Chile, Uruguay and Argentina, were established based on fiscal incentives. Brazil and Chile are successful models of forest plantations development while Argentina and Uruguay are still developing theirs. The fiscal incentive programs implemented in the past to establish plantations were important to attract investments from the private sector, to increase employment and revenues, and finally to generate taxes. The incentives were and still are limited to forest plantations. No incentive or other mechanisms were identified to help fund sustainable forest management (SFM) of natural forests.

Forest regulations are growing in most Latin American countries. These regulations tend to be excessive and inappropriate; this fact, together with the low managerial capability of local governments, increases the costs of public administration. These costs are at the end transferred to the production chain, and funding of operations to improve forest practices at field level remains a problem to be solved.

Decentralisation policies adopted by many countries in the region are not working as expected for forests. Decentralisation in forests has created overlapping structures and legislation, increased bureaucracy tremendously and added new costs.

Costs of SFM will continue to grow during the coming years as new issues are incorporated into the concept of sustainability and further improvements in forest practices and forest protection are required. The governments of South American countries will tend to accommodate external pressures and the size of the State will grow; this will further increase costs.

Certification is gaining importance and it will become an important element to ensure market access in the future. The control and monitoring mechanisms of governments, and the government-established permit systems *per se* should be sufficient to ensure that forest products traded in the market (that have fulfilled government requirements and are documented) have originated from properly managed forests. This has so far not been the case. It is said that the governments' control and monitoring systems have failed and thus are not sufficient to assure customers that the goods they are buying are from well managed forests. The result is another overlap of functions, and a source of more costs.

In Latin America, the private sector is already a major investor in SFM, but governments have a role to play in attracting more private funds to further improve forest practices. Some lessons can be learned from programs developed and implemented to support the expansion of forest plantations. There are several alternatives to be explored and tested to encourage private sector investments. In a first stage incentives can be used as a catalyst for the adoption of SFM. A second stage could consider

incentives for the enhancement of performance and, finally, mechanisms to sustain the process should be considered.

At the same time, the existing regulatory measures should be revised and efforts should be made to increase the efficiency of the governments of the region. Reducing regulatory measures and bureaucracy and increasing efficiency in enforcement of laws and regulations are among the important issues to be discussed. International cooperation has been very significant and active in the region but has not been able to effectively help governments to improve their managerial capability and to overcome existing limitations. International cooperation needs to review the progress made so far, and based on lessons learned, to find alternatives to improve their efficiency and effectiveness.

The solution requires coordination among all stakeholders, and this means governments, international cooperation, the private sector and civil society. It has to be recognised that the private sector is already playing an important role in financing SFM, but for sure can do more. The private sector needs to work towards continuous improvements in forest and industrial operations to gain productivity.

The introduction of new species in the market is also in principle a task for the private sector, but other stakeholders need to be involved and to cooperate. Introducing new species is fundamental to make compatible the raw material source (forests) compatible with the market demand (consumers choice). This has a direct effect on productivity and also on facilitating the implementation of forest management plans accordingly to the principles of sustainability.

There is no simple solution envisaged but the basic principle is clear: if the private sector has to increase its contribution to financing SFM, governments and other stakeholders need to create the necessary environment for investment. Investment is needed to improve performance and competitiveness in the market. The market is, in the end, the main source of funds to finance SFM.

Incentives need to be developed to catalyse adoption and to enhance performance, but to sustain the process, other conditions need to be met. These other conditions include, among other things: appropriate, stable and transparent regulations, economic and political stability, guarantee of access to forest resources and to markets.

INTRODUCTION

This paper was prepared at the request of CIFOR in order to support discussions on how to attract more private investment toward sustainable forestry activities, aiming to facilitate the implementation of IFF proposals for action, that called upon countries and relevant organisations 'to encourage private investments in SFM by providing a stable and transparent investment environment, within an adequate regulatory framework that also encourages the re-investment of forest revenues into SFM'.

This paper deals mainly with the South American perspectives, although the main aspects discussed and concepts presented might be more generally applied.

In the preparation of this paper, emphasis has been given to policy issues. The discussion presented is based on the hypothesis that the private sector is actually the main investor in SFM, and that governments in the region need to be more efficient and develop new mechanisms in order to improve their contribution to the effective adoption of SFM.

South America is a large continent and most of its land is still covered by forests. In the region are located over 30% of the world's tropical rainforests, but there is a large variety of other forest types with an enormous biodiversity.

In the past, as in other parts of the world, forests in Latin America were considered an obstacle to development and to have relatively low economic importance. In fact, until recent years, the potential of forests to contribute to the social and economic development of the region was, with the exception of some countries, not fully recognised.

For a long time the region had a negative international forest products trade balance. Only after the 1960s did land, agriculture and forest policies developed by some countries contribute to changing economic perspectives related to forests and forestry in the region. In the 1960s and 1970s new forestry policies put in place had a substantial impact particularly in Brazil and Chile. These countries developed fiscal incentive programs to support the establishment of fast growing forest plantations. In a short period, the plantations made available uniform and low priced raw material and this has been recognised, as probably the most important element to attract capital needed to further develop forests, and also to establish a competitive forestry industry in these countries.

Around the same period, land and agriculture policies, including incentives, led to the occupation of tropical forest areas, particularly in Brazil. As a result, large volumes of high quality and low priced timber were made available. Also during that period the tropical timber industry was flourishing in Asia and tropical timber products gained new markets. These facts opened new perspectives for investment, particularly in the Amazon basin, but forest operations were carried out mostly based on unsustainable practices.

Following the 1992 Rio Summit, sustainable forest management (SFM) started to occupy more space in the global discussions. Many South American countries, as in other parts of the world, started to develop and implement new policies and mechanisms to enforce the adoption of SFM.

To achieve desirable changes (improvements) in forest practices, new and additional financial resources are required. The issue started to be discussed domestically and also became part of discussions in international fora. The discussions continue, and mobilisation of international and domestic financial resources for SFM remains one of the most critical and politically sensitive issues on the international agenda.

It has been recognised that availability of domestic *public funds* especially in developing countries, even when combined with resources made available by international cooperation, have not been sufficient to implement SFM. It has also been recognised that additional funds should be made available and that the private sector has a role to play, and that it can fill the gap between the needs and the present availability.

At the moment the flow of capital from the public and private sector is directed mostly at monoculture plantations and is concentrated in a few countries of the region. Thus the financial resources needed to ensure SFM in natural forests, particularly in the less developed (tropical) countries, are still limited.

FORESTS IN SOUTH AMERICA

Most of the South American land area is still covered by forests. There are various forest types in the region, varying from tropical rainforest in the north to temperate forests in the southern cone. Most of the forests are native and plantations are only significant in some countries.

Areas covered by forests in South America are presented in Table 1. Total forested area in the region is around 880 million ha of which about 80% are concentrated in four countries: Brazil (with 63.2%), Peru (7.7%), Bolivia (5.5%) and Argentina (4%).

Table 1. Forest area in South America

Country	Area (1 000 ha)			% of Total
	Native	Plantation	Total	
Argentina	33 942	950	34 892	4.0
Bolivia	48 310	30	48 340	5.5
Brazil	551 139	4 500	555 639	63.2
Chile	7 892	1 900	9 792	1.1
Colômbia	52 988	200	53 188	6.0
Ecuador	11 137	120	11 257	1.3
Fr. Guyana	7 990	-	7 990	0.9
Guyana	18 577	-	18 577	2.1
Paraguay	11 527	40	11 567	1.3
Peru	67 562	300	67 862	7.7
Suriname	14 721	-	14 721	1.7
Uruguay	814	300	1 114	0.1
Venezuela	43 995	500	44 495	5.1
TOTAL	870 594	8.840	879 434	100

Source: FAO, adapted by STCP

In South America the rate of conversion of native forest land to other uses over the last ten years was on average around 0.5% per year (FAO 1999). This rate is much lower than the general perception, but in any case over the years large forest land areas were converted to other uses. Native forest areas continue to be reduced, but as a result of new policies and regulations developed by local governments to protect the environment and also improvements in the enforcement of the laws, the deforestation rate in the region is now declining.

Forest plantation areas are relatively small, contributing only 1% to the total forested area in the region. Plantations are important in the southern cone, with areas located in Brazil, Chile, Argentina and Uruguay. These countries, together with Venezuela, have over 90% of the total existing forest plantations in South America.

As previously mentioned most of the existing plantations were established during the 1960s and 1970s when some countries of the region developed fiscal and other financial and incentive mechanisms. These mechanisms were fundamental in making available the required capital to invest in forest plantations, particularly in Brazil and Chile. Forest plantation areas in South America are generally increasing. In the last few years, forest plantations areas have increased substantially in Argentina and Uruguay, as these countries have put in place incentives to expand them.

EXISTING FUNDING MECHANISMS FOR FORESTS

In spite of the reduction in the rate of deforestation during the last few years, and at the same time an increase in forest plantation areas, there is still much progress to be made to ensure the sustainability of forests in the region.

Demand for forest products is growing, as countries seek to satisfy their domestic needs and at the same time to increase exports to raise foreign currency for priority social and economic development programs. Reinvestment in forests has generally not been a real priority for most countries of the region.

Past development of forest plantations in Brazil and Chile served as a model to other countries of the region, and some have to develop and implement their own mechanisms. Argentina, for instance, developed and is putting into practice a very aggressive program to expand forest plantations. The results have been very positive (see Box 1).

Box 1. Forest Development Program in Argentina

In 1995 the Agriculture, Cattle, Fishing and Food Secretariat - SAGPyA, based on Law 21695 of 1992, issued regulations to promote forest plantations in Argentina, and created the National Program of Forest Development.

The program includes allocation of funds for direct investment by the Government in the establishment and management of forest plantations. From 1997 to 2000 around US$60 millions were invested by the Government in the Program.

The Program defines priority regions for forest plantations. The amount made available by the Government to establish plantations depends on local conditions and varies from US$340.00/ha to US$700.00/ha. Additional funds are made available to manage the plantations: US$40.00/ha for pruning and US$50.00/ha for thinning.

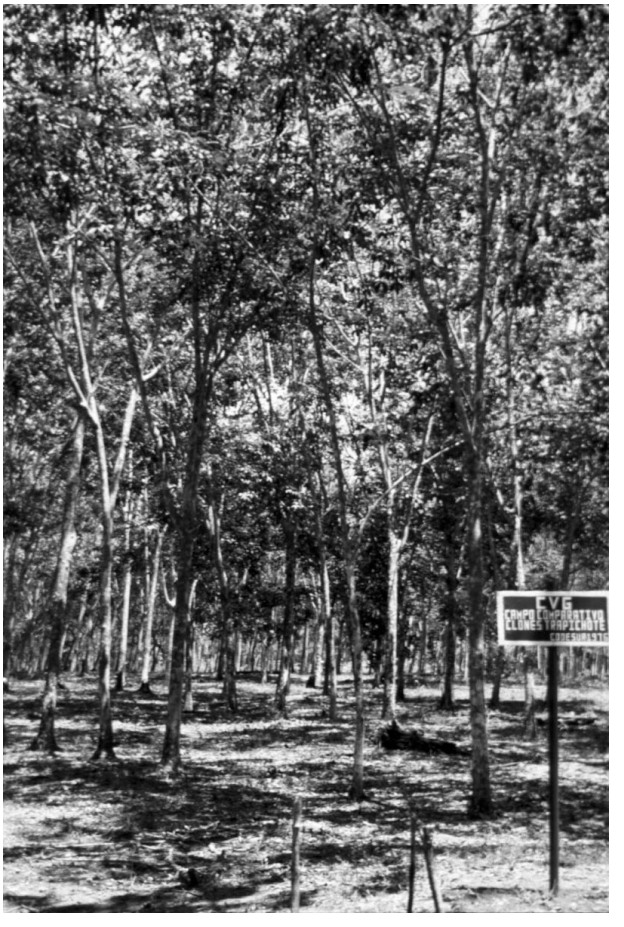
The Program has been an important mechanism to enlarge forest plantations in Argentina. Most of the plantations are in small properties (so far over 4000 small landowners benefited from the Program) but funds are also available to large landowners and companies. It is expected that by year 2003 forest plantation area in Argentina will reach 1.5 million ha, and increase of 50% over the pre-program area.

Besides the direct investment the program also includes other important mechanisms, such as the Law of Fiscal Stability. This law establishes a fiscal stability period of 33 years for activities related to forest activities, including fiscal implications related to plantations establishment, management, harvesting and trading of forest products. The private sector in Argentina considers this instrument as a key element, as stability in the rules is fundamental in long-term investments, such as in forest plantations.

On the whole, forest plantations areas are expected to expand rapidly over the next few years in Argentina, Uruguay and Paraguay. There is no doubt that funding mechanisms and other forms of incentives put in place by Governments are, at least for plantations, an important element in starting a process that ends up attracting new funds from the private sector, used both to enlarge forest plantations and to develop the potential represented by the forests (industrial investments). Additional private funds, and revenues from the investments, will sustain the process.

Taking this into consideration, the Government of Brazil which has been very reluctant to reintroduce incentive mechanisms for the forestry sector, at least based on the model used in past, has recognised at least the need to have more appropriate credit lines to support private company programs to expand forest plantations. As a result of this recognition credit lines for the establishment of forest plantations are available at the National Economic and Social Development Bank (BNDES), a Government organisation engaged in the implementation of national economic and social development priorities.

In spite of this fact, it seems that there are still limitations in Brazil on financing forest plantations. The private sector claims that the existing financing mechanism is neither sufficient nor appropriate. Interest rates are said to be too high and grace and repayment periods are too short. Independently of these facts it has to be recognised that some progress has been made, and BNDES loan terms are better than credit lines made available by the private banking system.



In any case, it is felt that direct incentives (such as fiscal incentives) should not be just banned from the discussion. There are cases where further analysis is needed. A fiscal incentive is at first a problem since government revenues are reduced. The establishment of incentive has to be based on technical and political aspects. It should take into consideration, among other things, how efficient the process can be in order to ensure attractive returns on the long term 'invested capital' which the incentives represent.

More and more governments will need, within certain limitations, to think as investors. The funds available are limited, and investments need to be made in those opportunities where higher socio-economic returns are possible.

Studies carried out in Chile revealed that the fiscal incentive program for forest plantations achieved an attractive rate of

return on the investments made. The Chilean program attracted substantial amounts of private capital, increased employment and revenues and finally taxes returning to the government. When all aspects were considered, it was found that the internal rate of return (IRR) of fiscal incentives for forest plantations in Chile was around 15%, higher than most of the investments made in the country during the last decades.

On the whole, forest plantation areas are expected to expand rapidly over the coming years in Argentina, Uruguay and Paraguay. No doubt that funds and other forms of incentives put in place by Governments are, at least for plantations, important to start a process of ensuring forest area expansion and that will attract private funds to sustain the process. Studies carried out in Chile also point out that fiscal incentives had a positive and attractive rate of return on the investments made, since the long range investments made by the private sector increased employment, revenues and finally taxes returning to the government.

The governments of most countries in South America have other social and economic short-term priorities that need to be met, and thus sufficient capital is not available for long term investments in forest plantations. Thus, public funds to support forest plantation establishment are still limited, and it has accordingly been generally accepted that investments from the private sector will gain importance in this area, and so the gap in plantations financing will be gradually solved.

The problem really remains of how to finance SFM of natural forests. In the region, no mechanism has been identified to fund SFM of natural forests that could, as in the case of plantations, be used as a catalytic element to attract private investments that, in the end, would sustain the process.

CONSTRAINTS IN FINANCING SFM OF NATURAL FORESTS

Low sustainability of agricultural projects in the Amazon and environmental pressures were important factors for the development of new forest policies in South America. The process started in Brazil, where several legal instruments to further regulate forestry activities were developed in the last 20 years. In recent years other countries of the region have also developed new mechanisms to regulate forest-related activities. Bolivia adopted a new forestry law in 1996 (Gobierno de Bolivia, Law 1700). Peru just approved a new forestry law in 2000 (Gobierno del Peru Law 27308) and other regulatory mechanisms are under development (Ministerio de Agricultura/INRENA 2000).

The models adopted may vary among the countries, but in terms of concept, the policies are similar. Resource ownership and forms of access to resources are, for instance, different. For example in Brazil, production forests are basically private, while in Peru and Bolivia native forests are, by constitution, State-owned, and their use is made available to the private sector (privatised) under a concession model.

It seems that one of the most radical changes in the region during recent years was in *Bolivia*. The enforcement of the new forest law introduced, no doubt, the principles of SFM for natural forests, but on the other hand the economic sustainability of the process can be questioned (see Box 2).

There are indications that it will probably be necessary to revise the forestry law and to find new alternatives if forests are to be protected in Bolivia. Under the present scenario, the private sector of Bolivia (that at moment is basically the only party responsible for financing SFM) will probably not be able to survive. The impact of having transferred SFM costs to the private sector, the application of excessively high standards in forest practices right from the beginning, and the creation of several regulatory bodies and uncontrolled bureaucracy are now part of the equation. They create a major problem to be solved to turn forestry activities in Bolivia into a viable activity to support national development.

In practice, the new forestry law of Bolivia, instead of supporting SFM, has created new and additional costs for both the private and public sectors, and this has been detrimental to forestry activities and to Bolivia as a whole. Industrial activities collapsed after the new law, forest products exports drastically decreased in 1999 and private sector debts soared.

A recent study (STCP 2000) indicates that there were other factors that contributed to the present situation, but in any case the new forestry law had a substantial impact. At the moment, Bolivian forestry sector debts are over US$250 million, an amount much higher than the existing capacity for re-payment, taking into consideration current interest rates. Bolivia is a small economy, but has large forest areas that can be sustainably managed and forestry can play an important role in socio-economic development. The forestry sector plays an important role in the country and there is no doubt that the poor performance of forest industry in the recent years has contributed to the growing social problems, and hence also to the political instability of the country.

Box 2. The New Forestry Law in Bolivia

After a long process of consultation coordinated by the Government of Bolivia, involving several stakeholders, the new forestry law was approved in 1996 (Law 1700). Accordingly to the Bolivian Constitution, forest belongs to the State and the new the law establishes that natural forests concessions can be made available to the private sector by an open bidding process under certain agreed conditions.

Law 1700 establishes that payment for the concession made available to the private sector (timber companies) is to be based on the total area of the concession, at a rate of US$1.00/ha per year; this values paid every year, independently of the amount of timber or other forest products removed from the area. The concessionaires are also responsible for costs related to planning, forest inventory, preparation of the forest management plan, and implementation of SFM, as well as for the infrastructure establishment and maintenance, security and protection of the area (against illegal logging, hunting, deforestation, and other non permitted activities), for the conservation of protected and/special environments within the concession and other related costs.

The law also establishes other forms of access to forest resources, the so-called ASL (Agrupación Social de Lugar) and TCO (Tierra Comunitaria de Origen). These other forms of concession were specially developed to accommodate local communities (ASL) and indigenous populations (TCO) interests. In these types of concession most costs related to SFM are covered by specific funds, mostly based on the payments (royalties) paid by the timber industry. Also in the ASLs and TCOs responsibilities of the concessionaires are reduced and payment is based on the area operated, rather than over the full area of the concession as in the case of the private sector. The overall result is that payment by cubic metre and costs of operation in concessions made available to the private sector is much higher than in the case of other alternatives.

Outside of the concessions, forest areas can be converted to agriculture. The so called 'agriculture lands' are private and logs obtained during the conversion process can be made available to the timber industry. Also 'agriculture land' can be kept forested, and managed for timber production. In this case no payment over land area (as in the private sector concessions) is due to the government.

In order to enforce the law new regulatory bodies, were created at federal, state and municipal level (as established by Law 1700). The increase in control and monitoring structures and in the bureaucracy increased government expenses substantially. At the same time, as a result of the new law, large concession areas were returned to Government and the total area under concession in the country was reduced from about 22 million ha in 1997 to the current 6 million. Thus, government revenues dropped below initial projections, resulting in a 'sectorial' government deficit.

The reduction in the government revenues might not be the main negative impact. Land returned to the State has had no protection. Illegal logging and deforestation in the returned areas have increased substantially in the last few years.

The law did not consider any transition period. The private sector was not ready to cope with the new and additional costs to sustainably manage the forests and

Box 2. *Continued*

at the same time, to cover additional costs imposed by the government increased expenses as a result of the expanded structure established to enforce the new regulatory measures.

Furthermore transition to the new situation took place at the same time the international market for tropical timber was suffering due to the Asian financial crisis (Pleydell and Tomaselli 1999). With increasing costs and reduction on returns due to low market demand and price collapse, the private sector of Bolivia has shrunk in the last two years.

Prospects for the near future are not good. Private sector debts are out of control and companies have no way invest to further in SFM, as investment to reduce debt became a priority to continue to work. There is no development agency or state bank that could take into consideration the particularities required in financing SFM. Private banks consider the forestry sector of Bolivia as high risk, and concessions are not accepted as a bank guarantee.

Peru is following the same track, and will also face the same problems in the future if regulatory measures under development at the moment do not take into account the lessons learned in Bolivia.

Early this year, *Brazil* created the National Forest Program (Ministério do Meio Ambiente 2000). The Program foresees, among other aspects, the expansion of government owned production forests in the Amazon region (expanding National Forest areas). The intention is to make these areas available to the private sector through a concession model.

The basic concept in Brazil is different from other countries. It has to be remembered that while in Bolivia and Peru natural forests belong, according to their constitutions, to the State, in Brazil natural forests can be (and mostly are) private. The adoption of a forest concession model in Brazil has been defended as way to facilitate access to the resource by the private sector. Defenders of the process have basically two explicit arguments:

- The private sector is largely composed of small and medium size companies, under-capitalised, with limited capacity to invest and maintain sufficient land forest land areas as required to implement SFM;

- Implementation of SFM in private areas would concentrate private land ownership, and this would create a potential risk of increased social conflicts.

These arguments are no doubt valid, and the combination of the two models, having private and government land under SFM might be, in the case of Brazil, a better solution than the existing system.

The model to be considered is a constant part of the agenda in discussions between government and the private sector in most South American countries. It is also generally a point of disagreement. In the end it really does not matter if forests are privately or publicly owned. The crucial problem relates to how SFM is going to be financed, especially considering that as the concept of sustainability develops, the requirements for SFM (and thus costs) increase.

At international fora, governments have agreed on several standards to implement SFM that are gradually upgraded. Nevertheless it seems that most governments have, during this international dialogue, underestimated the needs for new and additional funds to implement SFM. Trapped by the process, governments are now inclined to:

- Leave the task of finding new and additional funds to finance SFM to the private sector;
- Increase regulations and the monitoring/control structure and bureaucracy, thus creating more costs;
- Search for new revenues to cover sectoral fiscal deficits due to misdirection of funds and increasing bureaucracy.

So in fact, besides finding ways of meeting the new and additional costs of implementing SFM in natural forests, the private sector is now also being requested to support growing government expenses resulting from excessive regulation and the growing size of the State.

Bolivia is an example of how the State and its expenses have grown in South America. The Federal government was the only one dealing with forest related issues in the past. With the new forestry law, state and municipal governments are also involved. The basis for that decision was the decentralisation law (Gobierno de Bolivia, Law 1654), but decentralisation in forests seems not to have worked as expected since government structures are now needed at the three levels, with more expenses and bureaucracy. Furthermore the new model has so far not promoted the social and public interest in SFM that would be expected.

Government decentralisation policies are spreading everywhere, and no doubt this has advantages. It improves transparency, facilitates adjustment to local specific conditions, involves local communities and in principle it should increase efficiency (and reduce expenses).

Brazil is also moving towards decentralisation in forest regulation and control. Some States have already established structures to regulate and control forest activities. So far, the results have not been positive, as several overlapping areas have been created, tremendously increased the bureaucracy, opened new areas for conflict and added new costs to the private sector (see Box 3).

As it is at the moment, the private sector is paying for two bills: new and additional costs for the adoption of SFM and costs of covering the growing government expenses. As the private sector is not willing (or has no means) to pay the full bill, the result is less money to SFM, and growing informality (illegal logging). Of course, in this context, to cover government expenses will always be a priority, and more money is now flowing to maintaining the overlapping structures governments think they need for growing control and monitoring and less for the implementation of SFM at field level.

Box 3. Decentralisation of Forest Regulation and Control in Brazil

The federative pact considers that the responsibilities related to forest and environment control and monitoring are to be taken by State governments, and the Federal government would be responsible for the development of general polices related to the matter.

As the rules are not clear, overlapping in legislation is quite common, and it has become a problem to the private sector. The conflicts now need to be solved between the private sector and the two different levels of Government. Besides, State Governments are now discovering that forest and environment can be a source of revenues to cover growing government expenses. All this ends up in new and additional costs to the private sector.

One of the cost implications arises from the permit system. In several states permits for forest and forestry industry operations now need to be requested at Federal and State levels. So the decentralisation process has resulted in two times more bureaucracy and costs.

Conflicts between the Federal and State Governments are, as expected, increasing. An example of conflicts is in Rondonia. In the recent years Government of Rondonia, supported by international cooperation carried out a program called PRONAFLORA. Under this program a land use zoning activity established that 60% of the territory has to be kept as forest (Governo de Rondônia, 2000). This is not compatible with the national legislation that established for the Amazon region a minimum forest (original vegetation) coverage of 80% (legal reserve area).

As a result of the national legislation, existing degraded land needs to be recovered in order to achieve the minimum level of 80% for the legal reserve. The most peculiar fact is that forest plantations are not acceptable as legal reserves, so degraded land cannot be used for forest plantations as recommended in the land use zoning defined by the State of Rondonia government.

As long as the governments do not decide, private companies that established plantations in degraded land are under threat, and can be penalised by federal government authorities. Basically forest planters have two options: destroy the already established forest plantations and recover original vegetation converting into legal reserve or purchase new forest land (with original vegetation) to compensate.

Another example is the new state law under discussion in Mato Grosso State. The law under discussion introduces under the permit system the requirement of an Environment Impact Assessment (EIA) in forest management plans. There is a specific regulation at federal level on EIA, and for this reason the federal government removed this requirement for forest management plans two years ago.

The law under discussion in Mato Grosso will enable the state government to create new forms of taxes and duties over timber produced from natural forests. The parameters under discussion suggest that if the new law is passed and enforced costs of raw material will be increased by at least 30%.

PROSPECTS FOR THE FUTURE AND POSSIBLE SOLUTIONS

SFM costs will continue to grow

It is likely that during the coming years, new issues will be incorporated into the concept of SFM and further improvements in forest practices and forest protection will be required.

The governments of South America will continue to be in a weak position to defend their interests in international fora. Many governments are also not capable of screening out what is really needed to ensure sustainability of forests from those points that are in fact driven by the interest of pressure groups.

Internally, governments in Latin America will try to pass the responsibility for financing the growing costs of SFM to the private sector. In order to have this task completed, new regulatory measures will be developed. To enforce the regulations it will be necessary to strengthen institutions, and this will lead to a larger state.

Governments will continue to accommodate pressures with no real plans for the future

SFM in fact has, no doubt, opened up new options and opportunities for international cooperation, and this will continue. Support for institutional strengthening, policy development, and other related matters are amongst the most frequent offers from international cooperation partner.

There are several outsiders that for several and different reasons are interested in the continuation of this process. For the governments there are also different reasons to maintain the present move towards more regulations and increase in the government size. There are parties with legitimate interests in the process, and there are others that are willing to progress slowly and accommodate pressures from outsiders.

Very few have realised or want to discuss the fact that the process is leading to a growing size of the state (and other organisations), with limited results in the implementation of sustainable forest practices. In fact financing the new government structures, and to keep other national and international organisations of various types operating and visible, has in many cases become a priority while funding SFM practices in natural forests remains, and will in the coming years continue to be, an unsolved problem.

Other costs and factors are gaining importance

As already discussed, the adoption of SFM increased and will continue to increase direct forestry costs and also government expenses. These new and additional costs have been mostly transferred to the private sector. Besides, as already mentioned, there are clear indications that the costs will continue to increase in future and this fact *per se* is a problem to be solved. Nevertheless it has to be remembered that there are other indirect emerging costs to be covered. Among them it is worth mentioning the costs of *forest certification*.

The primary reason for forest certification, as stated by certification promoters, is to create a credible system that could assure the market that forest products made available to consumers were produced under sound forest management practices, in conformity with internationally agreed criteria. In practice, governments should be doing that, as:

- The governments have discussed and agreed at international fora criteria and indicators (C&I) for the measurement of progress towards sustainable forest management;

- The principles of sustainability have been incorporated into the legislation of most countries;

- National institutions have been restructured and strengthened, and other actions have been taken to enforce law, improve monitoring and control.

So it would be expected that forest products traded in the market, have been authorised by the government, taking into consideration the existing legislation. As governments have put in place an institutional framework compatible with internationally agreed principles of sustainability, including internationally agreed C&I, products traded in the market duly authorised by governments should be considered as a certified products.

The reason for requiring an additional certificate of origin is said to be the lack of credibility of governments and failures in the official control and monitoring system. The result is in fact another overlap of functions, and in the end more cost. Certification costs are high, and are directly paid by the private sector which in fact already pay taxes to governments. So the private sector is in principle charged twice for the same work. Furthermore, the incorporation of new concepts will in the near future increase the costs of certification.

There is no premium for certified wood products, but it is becoming a must to ensure market access, and for the private sector market access is of crucial importance. Pressure groups have been able to use certification to create market impediments, and this will in future years make forest certification gain space in South America and in other parts of the world.

Among South American countries, the fastest developments in certification of natural forests have happened in Bolivia, promoted basically by international cooperation partners that provided technical assistance and also covered part of the costs for certification. There was a strong expectation that certification would help to overcome the forestry sector crisis in Bolivia, but this apparently did not happen. No price premium was paid, and other decisive market factors did not change with certification: price, quality, delivery time, and preference for traditional species continue to be the main market selection factors (see Box 4).

Box 4. Forest Certification in Bolivia

The new Forestry Law with support through international cooperation has favoured forest certification in Bolivia. In 1996 there were only 53 thousand ha of certified forests in the country. The certified area increased to 550 thousands ha in 1999, the world's largest (Forest Stewardship Council) FSC certified area of tropical forests in a single country.

Certification has apparently not contributed to mitigating Bolivia's national forestry sector crisis. In fact, in spite of relatively large certified area, only US$2.8 million of certified timber products were exported in 1999 (around 5 % of total exports).

Most important is the fact that 98 % of the total volume of certified timber exported in 1999 was from a single species (Roble). Also the market for certified timber was concentrated in only one country. This indicates that certification did not open new markets. Traditional buyers continue to buy their selected species as usual.

First statistics for year 2000 indicate some improvements, both in terms of volume as well in terms of number of species (around 70% is presently Roble). Volume will grow anyway. First, because the promotion of certification in main European markets and in USA has been intensified by certification promoters. The second reason is the fact that most of the production areas, at least of the major timber producers in Bolivia, have been certified. So most of the offers to the market (exports) will be timber coming from certified forests, regardless of the buyer's requests.

Role and actions of various stakeholders to improve future conditions

As already mentioned, there are several differences in terms of forest ownership and other issues related to forests among the South American countries. Thus, as expected, the role of several stakeholders and actions needed to be taken by them in order to improve future conditions and to facilitate the attraction of more private investments towards SFM, will depend, of course, on the particular conditions of each country.

In any case, as in other parts of the world, governments in South America have an important role to play in attracting more private investment towards sustainable forestry activities in natural forests. Lessons can be learned from programs developed and implemented to support the expansion of forest plantations.

Especially for natural forests, but not exclusively, there are at least two basic elements (or conditions) that governments need to take into consideration to facilitate investments from the private sector in SFM. They are (a) a stable investment environment and (b) clear and appropriate regulatory mechanisms. The sections below expand on these:

Stable investment environment

Forestry activities are only sustainable if long-term investments are envisaged. In South America, guarantee of access to the resource (and that includes land tenure in countries having private forest land as the case of Brazil) is among the most important issues for attracting private investments in SFM. Fiscal and legal stability is also of particular interest in long-term investments. Furthermore, as in any investment area, general economic and political stability is required.

Clear and appropriate regulatory mechanisms

The growing concern directed at environmental issues is a driving force for increasing regulation and for creating complex instruments that are normally costly, difficult to understand and, in general lack transparency. Moreover in many cases the instruments are based on experience gained in other conditions and do not take into consideration local peculiarities. In most cases regulations become a source of conflict, and inevitably lead to a substantial increase in costs and open opportunities for corruption. There is no doubt that this situation needs to be revised. Besides, it is also necessary to find ways of increasing efficiency at different government levels, to avoid overlapping and new expenses that, unavoidably, are transferred as costs to the production chain.

There are several other alternatives that could be explored and tested by governments in order to encourage private investments in SFM of natural forests. One possibility would be to consider the phased implementation of the following aspects that would sequentially promote adoption of SFM, enhance performance of management regimes, then sustain the process:

<u>First phase: incentives for the adoption of SFM</u>

On this aspect, lessons can be learned from incentives that were made available for plantations. The fiscal incentives (subsidies) were not developed to be in place forever, but to serve as a catalyst element in the development process. The results obtained prove that this premise was correct.

In the case of SFM of natural forests no mechanism has been foreseen. In fact in most cases regulations were not even agreed among the stakeholders, local knowledge was ignored, and internationally agreed criteria were used as parameters. Costs are now difficult to internalise.

So, properly designed incentives are important to facilitate and motivate the adoption of SFM, but, as in the case of plantations, the most important point is that the incentives should be designed to work as a catalytic element for the adoption of improved forest practices.

Second phase: incentives for the enhancement of performance

The regulatory instruments should set, from the beginning, the minimum requirements. In some cases further improvements can and need to be made, and higher performance standards should be achieved.

In practice anyone achieving better performance than the minimum required standards should be eligible for a premium. An innovative incentive scheme can be designed for this purpose. Facilitated access to capital would be an example of such an incentive, but there are several other options to be explored, taking into consideration gains in environmental, social and economic performance.

In the development of such an incentive scheme, the following basic premises should be considered:

- Regulations should be kept to a minimum (simple and transparent, covering core issues only). This would help to reduce corruption and government expenses;

- Incentives should include participation of government in financing SFM, taking into consideration the fact that as performance in the implementation of SFM by the private sector increases, costs to public sector (requirements on monitoring and control) are reduced.

Third phase: mechanisms to sustain the process

Forestry activities will only be sustainable if long-term planning is taken into consideration. There are no financing mechanisms in Latin America for SFM, and the development of appropriate mechanisms is of outstanding importance.

Other and innovative mechanisms are also needed here. Among them, it is worth mentioning the need for *hedging mechanisms*, to create more stability in the market place. This is an important factor to increase investments from the private sector in SFM. Lessons on how instability can affect forestry activities were learned from the Asian financial crisis (I997/1998); an ITTO study (Pleydell and Tomaselli 1999) carried out on its effects on tropical timber already recognised the need to develop a hedging system.

International organisations need to be involved in the process and their investments and priorities need to be reoriented. There are cases where the policies of the organisations need to be fully revised. A more proactive approach is needed from most international organisations.

One of the examples is the 1991 World Bank Forest Policy. The policy does not have the necessary elements to attract more private investments to SFM. It does not create the necessary environment to attract investments nor support actions to improve efficiency in the production chain, which would help to generate new funds, based on

the market, to finance the adoption and implementation of SFM. In fact the World Bank 1991 Forestry Policy was one of the elements that contributed to increasing the bureaucracy and added new costs to the system. There is little expectation that this will change substantially with the new policy now under discussion.

The private sector is already playing an important role in SFM. It has to be recognised that among the stakeholders the private sector is, for many countries, by far the most important, if not the only, direct investor in SFM. In any case there is no doubt the private sector can do more.

In general, the private sector is reluctant to cooperate with other stakeholders. There is no doubt that in many cases the reluctance is based on concrete arguments, as cooperation among stakeholders has not been easy, and conflicts are frequent.

In any case there are key issues that will need to be faced by the private sector, and the solution will be much easier if cooperation among stakeholders improves. Perhaps among the most important issues at the moment is to find ways to make SFM practices compatible with market requirements. In this connection, it is of extreme importance, for example, to find markets for less known species (LKS). The market has been extremely reluctant to accept LKS as this requires development of processing technologies. Given generally conservative market, it is most important to break traditions if introduction of LKS is to succeed.

The existing mechanisms, such as certification, are not and will not solve the problem. There is no question that during the coming years the market will increase its demand for certified timber products, but it will also continue to buy mostly the best grades and from a restricted number of selected species.

To solve the problem, the private sector in South America dealing with natural forests has to coordinate with other stakeholders in order to:

Improve the forest and industrial operations performance

Again a bench marking can be made with the timber industry based on plantation forests operating in the region. Basic technology and knowledge are available to improve forest and industrial performance, and in the end upgrade product quality and gain competitiveness. On the other hand this will require investments in equipment, adoption of new technologies and an increase in human resources skills.

Governments and international cooperation agencies need to support these efforts. By improving industrial performance better products will be produced and made available to the market and at a lower cost. This will increase profits and make more funds available to invest in SFM.

Increase the number of species in the market

The diversity of species, and the lack of markets for LKS, is perhaps the most serious constraint for the implementation of SFM. The diversity of species and lack of a market for LKS has been one of the factors responsible for failure in several forestry

investments in the region. The market is very selective in terms of species, and working with a few species increases operational costs (see Box 5). Logging a reduced number of species is a constraint not only from the cost point of view, it can also represent a problem in the implementation of forest management plans, if agreed SFM criteria are to be fulfilled.

Box 5. Impact of Timber Volume Harvested on Costs

A recent study carried out in Bolivia shows that by increasing the volume harvest of natural forests under sustainable management, costs of timber production can be significantly reduced.

Most tropical forests in South America have high species diversity. LKS have market restrictions with the market continuing to give preference to traditional species. When a market for LKS is found, prices are much lower, and in the case of Bolivia it does not cover the costs of production and distribution. Thus in fact LKS, at this moment, have no market.

As a result of lack of a remunerative market for LKS, timber producers in Bolivia are only harvesting a few species, and removals during harvesting are generally low (on average 3 m^3/ha). Recent studies have shown that with a small improvement in the market conditions (acceptance of a few more species) the volume to be harvested could reach around 12 m^3/ha.

The increase in the volume removed would have a substantial impact in log production costs. Costs of logs delivered at the mill would drop from the present average costs of about US$45.00 per m^3 to an estimated US$26.00 per m^3. This represents a reduction in costs of more than 40% over the present situation.

Increasing the volume reduces the cost per unit volume of all operations: forest silviculture and management, harvesting and transportation. The efficiency gained in forest operations has important impacts on the final product cost. First estimates indicate that by only increasing the harvested volume per unit area from 3 to 12 m^3, the costs of primary products at the mill gate (ready for shipment) could be reduced in certain cases by 25% or even more.

In the case of Bolivia, the increase in harvesting volume per unit area is fundamental to allow local producers to regain markets. With the adoption of SFM, enforced by the new forestry law, the Bolivian timber industry lost large market shares, and to regain the market it is fundamental to enable the industry to increase production and revenues. This, of course, would enhance the financial capacity of the Bolivian timber industry, and it would be a market-driven incentive for the private sector to re-invest into SFM.

To improve the situation, much has to be done but in the end, opening markets for LKS is probably one of the most important points to enhance the financial capacity of the forestry sector, and thus increase the resources needed to finance SFM.

The introduction of new species in the market is a real problem. The solution is not simple, especially when market issues are involved. Changes in market patterns involve several aspects. Market forces are mostly based on the competitiveness of the product in the market, taking into consideration mainly economic-related factors (price, payment terms, delivery, availability and quality).

Non-economic related factors can also be used to change market patterns. It is often mentioned that market education can take care of changing consumer' perception and thus influence market patterns. The experience indicates that market education is normally an expensive exercise, results are only obtained in the long run, and the involvement and commitment of all stakeholders, including government, the timber industry, trade and civil society is required. The importance of market education cannot be over-emphasised, but it also has to be recognised that market education alone is not the solution.

CONCLUSIONS

For some South American countries the financing of forestry operations based on plantations and sustaining this plantation-based process is practically a solved problem. Incentives made available by governments have played an important role and catalysed the process. The flow of private capital into forest plantations is expected to increase in the future.

By contrast, there is no mechanism available in South America to finance SFM of natural forests yet. In spite of having several problems that are and will continue to inhibit the private sector from investing in SFM in natural forests, most of the financial resources flowing into SFM come at this moment from private sources.

One of the factors limiting investments in SFM is the existence of excessive and inappropriate regulations.

Governments in the region have failed to put in place proper mechanisms to make environment concerns and development policies compatible. Low managerial capability is the main problem, and this is not likely to be solved in the next few years. International cooperation has not been able to help to solve this and other limitations. In the end it seems that international cooperation has been an expensive and inefficient mechanism.

Governments are motivated internally and externally to increase regulations, which require new structures to enforce the legal instruments. The process is and will continue to increase government expenses that in the end will be transferred to the private sector, adding costs to the production chain.

Reducing regulations and bureaucracy is amongst the important issues to be discussed. Regulations, when needed, should only set a minimum standard in a clear and transparent way, while at the same time they should help to solve conflicts, accommodating different interests and creating a stable investment environment.

There is no simple solution envisaged but the basic principle is clear: if the private sector has to increase its contribution to financing SFM, governments and other stakeholders need to create the necessary environment for investments. Investments are needed to improve performance and competitiveness in the market. The market is, in the end, the main source of funds to finance SFM.

Incentives need to be developed to catalyse the adoption of SFM and to enhance performance, but to sustain the process other conditions needed to be meet. These other conditions include, among other things: appropriate, stable and transparent regulations, economic and political stability, and guarantee of access to forest resources and to markets.

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Chapter 5

The Private Sector and Sustainable Forest Management – A Private Perspective from South America's Southern Cone

Fernando Raga Castellanos

Executive Summary

Latin America is an important forestry region at present as well as having great potential for the future. In line with a worldwide trend of growing sensitivity towards the multiple values of forests, their conservation and development have become an issue of increasing concern in the region. Many countries have considered sustainable forest management (SFM) among their development policies. In addition, the region, as in other parts of the world, has seen the evolution of a powerful and influential segment of Non-Governmental Organisations (NGO's) seeking to promote forest conservation, which acts and has an influence on the public and on decision-makers. In spite of this, the practical results of action in favour of SFM in the Region have been modest, due to several reasons, among the most important ones being the need for investment funds as well as the costs involved.

One of the main problems in promoting SFM is the everlasting debate about the proper definition of this concept. The various objectives that it implies, some of them contradictory, as well as the costs involved in each attempt to make those objectives match, make the debate much more complicated. In practice, there have been two approaches to the problem: one vision we shall call 'microscopic sustainability' and the other 'macroscopic sustainability'.

The first one ('microscopic sustainability') requires that each stand of forest should meet all the sustainability requirements and cover the multiple demands of

society. Most of the NGO's and some European countries support this view. The second one ('macroscopic sustainability') argues that sustainability is more feasible and social and economically efficient when practiced at a larger landscape level. Within the landscape, a variety of specialised forests can exist, each according to their best aptitude, and when taken together meeting society's many demands. This view is supported as being a feasible model by the private sector in several countries, particularly in the Southern Hemisphere, and can be especially significant for South America's Southern Cone, whose countries have a great potential for forest plantations.

The complexity and delay in resolving the SFM debate and its likely evolution towards the ideal concept of SFM, which in many cases involves high costs to private operators, have somehow made improvement a burden to many owners and forest operators. Such operators would like society to acknowledge the value of sound forestry practices, even if they do not reach the status of 'ideal SFM'. In forestry, as in other sectors, society needs to accept that seeking perfection before acting may be worse than accepting incremental improvements.

If it were intended that private operators and owners carry out realistic SFM practices, it should be taken into account that this would only be possible if the private operator achieves competitive profitability against the alternative use of his capital. Some perspectives of SFM (especially the 'microscopic' variety) get private operators involved in the production of various public goods (such as biodiversity and landscape conservation). So far, the only sources of income to cover the private costs of SFM are

the income from timber sales and the potential income from carbon sequestration, which is still an incipient market. The private sector is, in effect, being asked to perform public service at no cost to society; it cannot do so indefinitely and still remain profitable and competitive. A more reasonable option is to adopt basic requirements towards sound practices that can be financed privately, or if society requires full SFM, society should develop a willingness to contribute to financing the private sector production of public goods by means of subsidies.

When trying to promote SFM among private operators, it should be taken into account that there are encouraging and discouraging factors. On the plus side is the worldwide development of certification, society's valuation of SFM, respect for and acknowledgement of forestry and property rights, stable regulations, reasonable costs, simple certification systems and incorporation into formal economy. On the negative side are: vague definition of property rights, lack of acknowledgement with regard to efforts towards sound practices on the part of some NGOs and the public, unfair or unreasonable restrictions, and the difficulty of promoting sound practices among small and medium-sized operators within an informal economy.

South America's Southern Cone (Chile, Argentina and Uruguay) shows fewer deforestation problems than the rest of the continent and it stands out because of its great potential to increase forest plantations. If viewed in terms of a 'microscopic' view, the current development of SFM is insignificant; but from a "macroscopic" view the Southern Cone shows large areas of well-preserved natural forests in tandem with increasing areas of plantations, many of which are managed under a "sound practices" standard. The main legislative frameworks in general have appropriate measures to promote afforestation and compel proper forestry practices. Most forest activity is privately based, so that any policy towards SFM should take this fact into account. It is also to be considered that large areas are in the hands of small and medium - sized private operators generally operating in an informal economy.

The main challenges/opportunities for SFM in the Southern Cone lie in reducing deforestation and the degradation of natural forests. In order to achieve this, it is necessary to take advantage of the chances to increase plantations and to improve the contribution of forestry to low income rural communities.

In this decade, the region expects a private investment of over US$ 5 000 million in forestry and forest industries. Great progress towards SFM can be made by promoting investment and private activity through: the creation of an investment-friendly climate; the intervention of the State by setting prices for externalities provided as benefits to other sectors; the promotion of carbon sequestration; the contribution to financing the production of public goods when the private cost: profitability ratio requires it; simple and easy enforcement of laws; appropriate incentives; and the support of a certification system that makes control easier and that is feasible for and accessible to forest owners whatever their size may be. Most attention has to be paid to small and medium - sized owners where a significant part of the current problems related to forests can be found. They should be regulated through feasible and realistic rules.

The NGOs can contribute to the success of all we have mentioned above by: relaxing their views with a view to matching ideals with reality; acknowledging and supporting as useful basic advances towards SFM; being open to the macroscopic sustainability view which tends to make SFM economically feasible; paying attention to the small owner segment mentioned before; and proposing initiatives and practical solutions to solve their problems.

INTRODUCTION

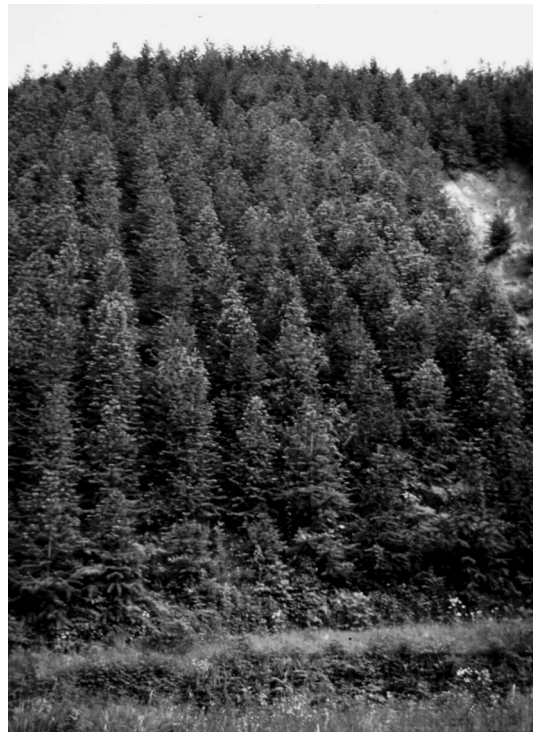
Latin America is an important region from a forestry point of view, at present as well as in the outlook for the future. Its 776 million ha of forests represent about 22 % of the world's total forest areas and 40% of all tropical forests (Prado 2000).

Although the deforestation rate of natural forests in the region is declining (see Figure 3), it is still running at a rate of 0.5 %, concentrated mostly in tropical forest areas. Some evident reasons are the conversion of land to farming and livestock, wildfires, illegal logging, degradation caused by unsustainable exploitation in some areas, and replacement by industrial plantations. However, many of these obvious reasons are, actually, symptoms reflecting more fundamental underlying causes to be found in the economic signals perceived by those taking part in forestry and whose incentives often conflict with the aims declared by society in favour of retaining large areas of forest. Moreover, in many cases, the aims declared by society are a long way from what it is willing to finance when the benefits and all associated costs are made clear to it.

In an environment of growing sensibility towards the social, cultural and environmental values of forests and towards their permanence as an asset for future generations, deforestation and degradation of forests in the region has also become an issue of growing concern. Therefore, many countries are including the sustainable management of forests among their development policies, based on the notions of the UN Conference on Environment and Development held in Río de Janeiro, Brazil, in 1992; and an array of other international agreements and ideas related to forests, such as: Agenda 21; the UNCED Forest Principles; and Proposals for Action of the Intergovernmental Panel on Forests; diverse criteria and indicators for sustainable management of forests and the proposals of the Intergovernmental Forum on Forests.

As elsewhere, in Latin America there has been a major increase in NGOs concerned with environmental issues and focused to a great extent on aspects related to forests. This is a worldwide sociological trend whose significance has been, perhaps, insufficiently analysed as the driving force behind the evolution of the debate on environmental issues. In many cases it is not ordinary people but this segment of society – made up of different groups whose thoughts and actions around the core of the environmental issue vary vastly – is the real reference point for what has been called 'society's awareness of environmental issues'. In this region, a significant percentage of people are not in a position to focus on environmental issues; many live

in impoverished areas with precarious education, whereas sectors with a higher level of education are poorly informed on environmental issues. The NGO's are some of the most (if not the most) relevant elements of the dynamics of the environmental processes in the region.



But, in spite of what has been mentioned before with regard to the will of governments to set measures aimed at sustainable forestry management, the public's growing environmental awareness, and the power of the NGOs, the region's success has been modest in terms of turning higher level discussions into real action. There are many reasons for this but, undoubtedly, financing is one of the key aspects in achieving specific results.

The promotion and development of better environmental practices requires the allocation of financial resources to cover short- and long-term opportunity costs and to attract even more financial capital for cash investments. The latter is related to different aspects, such as target definition and effective policies and the creation of an appropriate climate and investment incentives. These aspects must go in tandem with the reality of each specific region, sub-region or country and their potential to contribute, according to their characteristics, to the future sustainability of the planet. This paper presents some of these aspects, stressing the reality of the Southern Cone of South America (Argentina, Chile and Uruguay).

DIFFERENT PERSPECTIVES OF SUSTAINABLE FOREST MANAGEMENT (SFM)

In considering investment for promoting SFM and the obstacles thereto, we must begin with the basics: the concept of SFM is only defined in very broad terms, mostly vague and ambiguous (Ljungman *et al.*1999). At this general level there is a large degree of agreement. But, as soon as it comes down to specifics, different interpretations appear, causing endless discussions. One of the most complicated matters is the variety of objectives that exist when interpreting a range of demands on forests. Some of these demands are: preservation of biodiversity; maintenance of economic productivity;

respect for intergenerational equity; responsibility for social and cultural needs; soil and watercourses protection; safeguarding the values of native people and rural communities; offering recreation; preserving existence values, etc.

It is easy to see that some of these matters are problematic and lead to technical and ideological discussions on how to deal with the trade-offs in order to find practical solutions. Of course, each approach has economic consequences which make the discussions even more complicated, suggesting that we are far from reaching a consensus and a realistic view of how to turn these matters into reality.

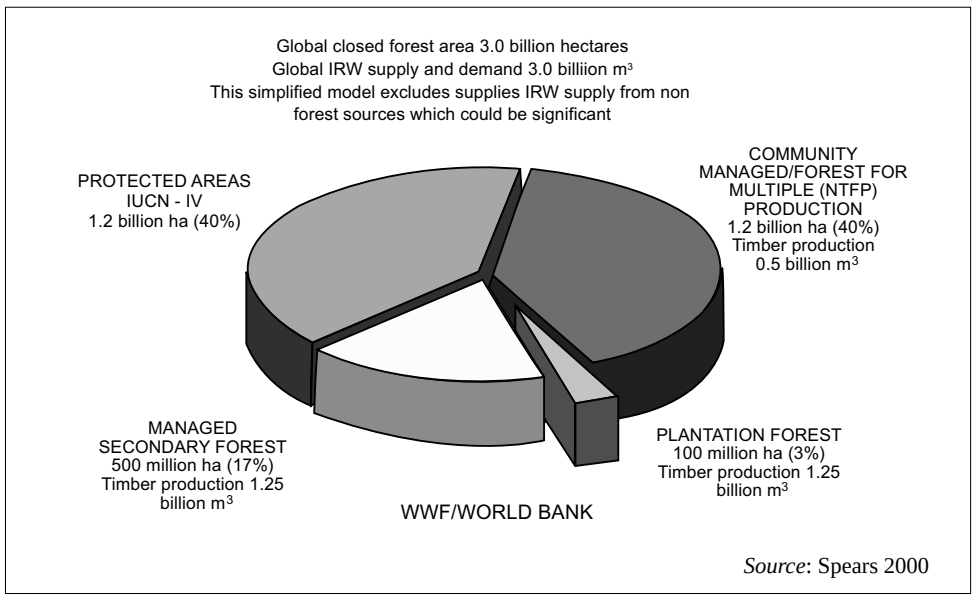
But in the meantime, as productive activities related to forests continue to develop, two trends aimed at bringing us closer to SFM are emerging. The odd thing is that they are, apparently, opposite: one is aimed at less intensive management, in line with a trend called 'New Forestry', and the other one, aimed at very intensive management in the production of timber is one whose utmost example is 'tree farming'.

We say that these trends are apparently opposite because, looking beyond them, we see that their differences arise from the geographic scope at which society tries to define sustainability. In the first case it is about a 'microscopic level' where each forest should meet a wide range of requirements whilst trying to 'imitate nature' in its management. The second case considers an implicit or explicit definition of bigger areas (a basin, region or other large landscape, or even a country) to which sustainability is applied, so that the requirements are met in the whole area but where individual forests are used according to their natural and socio-economic advantages.

The first trend, that we will call 'microscopic sustainability', is supported and driven by most of the NGOs and taken as a model in some European countries. It is also promoted, indirectly, through some certification systems. The second trend, which we will call 'macroscopic sustainability' is vigorously emerging as a spontaneous trend driven by economic forces and pressures for the preservation of natural forests. The 'macroscopic model' is presented as a viable model from a technical, economic and environmental point of view of SFM by countries like New Zealand and the private sectors of South America (Argentina, Chile, Uruguay). As we will see, this perspective of SFM has great relevance for this region. That is why we will enlarge on it.

Together, the WWF and the World Bank are working on the ambitious Global Vision project. One of the main conclusions reached at the first stage, points out that 'research suggests that a trend towards an intensification of forest management could have a great impact on the future world's supply of industrial round wood (IRW). It could lead to a situation where, by the year 2050, total demand for IRW could be produced from approximately 20% of the current forest area' (Spears 2000). This 20% may be made up of 17% intensively managed secondary natural forest supplies, and 3% forest plantations as illustrated in Figure 1. The remaining 80% of the forest area, may come under different conservation categories. Taken together, the small area under intensive plantations and the larger natural forests would offer all the goods and services of forests, so amounting to SFM. Taken separately, both would not fully meet the expectation of SFM. One because it offer production with only limited environmental service; the other because it does the reverse.

Figure 1. A Possible Global Forest Situation by Year 2050



Source: Spears 2000

Here we understand the way in which the trend towards intensification of management can not only harmonise with the sustainability of the world's forest resources but also make it possible in real terms by releasing 80% of the world's natural forests from production pressures by concentrating timber production on relatively small, high productivity areas. The contribution of planted forests areas is key to this balance because it would allow 45% of the volume to be produced on just 3% of the total area. This could be considered as a 'macroscopic sustainability' approach on a global scale.

It is important to note that there are different views on the likely impact of the trend towards the intensification of forest management on deforestation and on overall forest sustainability. However, some concerns arise and some aspects are not yet fully understood. Therefore, forest plantations can be seen simultaneously as sustainable or non-sustainable. From a 'microscopic sustainability' point of view, they are often seen as non-sustainable because of their ecosystemic simplicity and relatively scarce biodiversity. Seen from a broader perspective, as 'macroscopic sustainability', plantations emerge as a significant contribution to the preservation of vast natural forest areas containing more biodiversity and a more valuable landscape than could ever be obtained if restrictions like 'new forestry' are applied to the planted forests themselves. Applying 'new forestry' eliminates the great contribution of plantations to macro sustainability, which is precisely their ability to produce big timber volumes on small areas.

The perspective of 'microscopic sustainability', directed towards a balanced management and the multiple utilisation of forests on every single piece of forest, apparently tries to solve the total issue through keeping together its parts every where (under the assumption that if each part is sustainable, so should its sum be). However, it reduces in practice the possibility of achieving high productivity in small areas. Therefore, if this approach came to be the norm, in order to attain the required timber balance, the following measures or a combination of them would have to be taken: a) harvesting over a much larger area of natural forests; b) reducing per capita timber consumption and/or c) reducing the world's population. These alternatives do not seem to be either positive for preservation or realistic.

To use large areas of natural forests raises the question of costs (it should be noted that currently 1.6 billion ha are not available for timber production for reasons such as inadequate roads, high costs, legal considerations, etc.) Resistance from environmental groups and public opinion would also not take kindly to harvesting over much larger areas of natural forests. If it could be done, it would be difficult to imagine its beneficial effects on the preservation of biodiversity.

On the other hand, a trend towards reducing per capita timber consumption is already on its way as a result of paper recycling and the utilisation of engineered wood products (EWP), which are more efficient in using wood fibre. But it is difficult to imagine a massive replacement of timber utilisation, because of its huge volume, and the polluting, energy-consuming and often non – renewable nature of its known alternatives. On the other hand, the trend towards a more efficient use of wood must face another opposing trend, which is the prospect of low income sectors of thickly populated countries aspiring to a higher level of forest products consumption. Reducing their chances for increasing their standard of living does not seem compatible with sustainability at a global level.

Regarding worldwide population, it seems as if the fear of an uncontrolled demographic explosion has vanished and many experts agree that the 6 billion inhabitants the world has at present will stabilise at around 9 or 10 billion by the year 2050. This means a significant slowing down of the population growth rate, but it does not seem realistic to think that the world could revert to 3 billion people or less in the near future (as would be required if some scenarios of 'microscopic sustainability' were to be applied on a global scale), unless a huge planetary cataclysm intervenes (for more references on the topic of 'micro' and 'macro' sustainability, see Duinker, *et al.* 1998; Vincent and Binkley 1993).

What has been said before leads us to think that the discussion about SFM will go on for a long time. But the world cannot stop meanwhile and it becomes necessary to reverse, as soon as possible, the negative trends which hurt the forests. Ljungman, *et al.* (1999) should be transcribed literally here:

> 'Pursuing a consensus definition of SFM should not be used as an excuse for inaction. There are many situations that we know are clearly poor management, or at least management that falls below acceptable professional standards. We know that we can do much to "improve" management of the forest estate even if we cannot reach the ultimate SFM. Being less rigorous on the interpretation of this term may help us to unleash a whirlwind of effort to improve forest management and begin the journey forwards, even though the final destination is always changing'.

THE PRIVATE FOREST SECTOR AND SFM: INCENTIVES AND DETERRENTS

General aspects of costs and private benefits

As we have seen before, society's demands on forests have diversified beyond simple permanent timber production (sustainable yield). But the major part of those demands do not become markets where the forest owners can obtain economic rewards for producing the environmental goods to pay for their production. In fact, efforts to assess the value of other non - timber forest products have shown much less value than what the public debate has conferred upon them (Table 1).

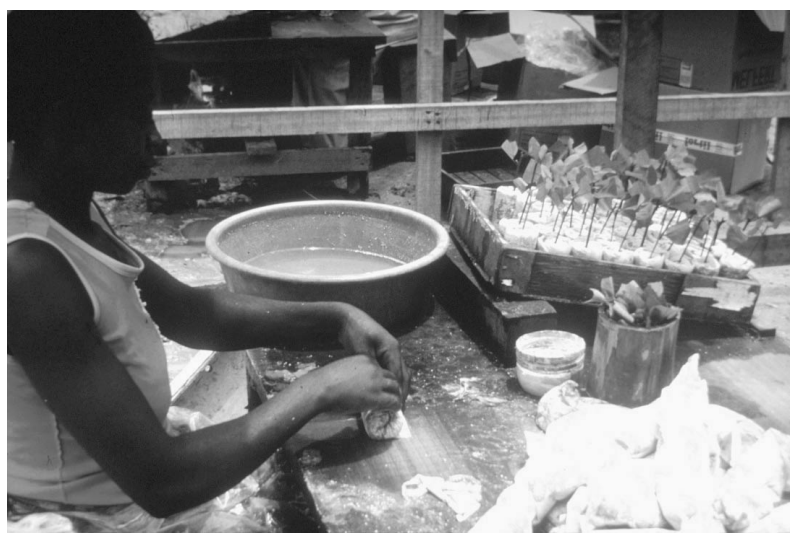


Table 1. Some examples of the comparison between local and global market and non-market values of forest benefits.

Product of type of benefit	México	Costa Rica	Indonesia	Malaysia	Peninsular Malaysia
Roundwood (market value)	-	1 240	1 000-2 000	4 075	1 024
NWFPs (market and non-market value)	775	-	38-125	325-1 238	96-487
Carbon storage (non-market value)	650-3 400	3 046	1 827-3 654	1 015-2 709	2 449
Pharmaceutical (non-market value)	1-90	2	-	-	1-103
Ecotourism/recreation (market and non-market values)	8	209	-	-	13-35
Watershed protection (non-market values)	<1	-	-	-	-
Non-use value (non-market value)	15	-	-	-	-
Option value (non-market value)	80	-	-	-	-

Note: All figures al in US$/ha; non-wood forest products (NWFPs) refers to resins, nuts, mushrooms, wildlife and other forest products (some of which have market values); option values relate to the non-market value of preserving forests for future use; and existence values are those attached to forests by people even if they will not use them. This table is adapted from Pearce (1995)

Source: Contreras 1999

The example of Table 1 is not intended to say that timber and carbon sequestration are the only major products and services that forests provide, but that they are the only prospects to offer current or potential significant and realistic private cash incomes to the forest owners.

Therefore, of the mentioned objectives referring to SFM, the only non-timber activities which could be profitable for the private sector are those aimed at keeping or improving soil productivity; and those which increase or accelerate the capture of carbon, like forest management (thinning). The remaining goods and services expected by society through SFM, are 'public goods' whose costs fall on the private producer depriving him of economic rewards in return. Some of these public goods could be

produced by the private sector anyway because they emerge as positive externalities with no marginal costs. Problems arise when the demands for public goods are such that they lead to incremental costs for the private owner without any private revenue to finance them.

SFM could lead to private profitability under several circumstances, but sometimes non-sustainable forest practices are financially more appealing in the short term (Ljungman *et al.* 1999).

Aspects which discourage private investment in SFM

- *Undefined property rights and changing the 'rules of the game'.* – In the forestry sector, the private investor assumes a bigger risk than in most of other activities due to the period of time involved. That is why a clear definition of property rights is necessary in order to allow revenues to recoup the investments, as well as the guarantee of a proper body of regulations during the whole period of the project. The nature of the debate about SFM itself, often, leads to changing legislation. In countries like those in Latin America whose fiscal budgets have to meet many requirements stemming from social problems like poverty, health, education, etc, additional costs caused by changes in forestry policies normally fall on private owners, sometimes under threat of confiscation. This not only discourages investment in SFM but investment in forestry in the long term as well. In addition, claims brought by indigenous groups also cause uncertainty with regard to property rights, through boycott action, land occupation and threats of confiscation.

- *Lack of recognition of some efforts already being made towards SFM.* Regarding the environmental trend, the NGOs offer an array of views. Some of them plead for strict definitions of SFM which often prove to be quite expensive. They also often refuse to give credit to 'sound forestry practices' which do not fully meet their ideal requirements. As a result, valuable initiatives for improvement under ISO 14000, for instance, which are far distant from poor management of the forest estate, are not recognised; sometimes they are even impugned by NGO's. This obviously discourages investment in SFM because the targets seem unreachable, troublesome, expensive and, sometimes even doubtful from a rational point of view.

- *The structure of the forest estate and the characteristics of small owners.* In the Southern Cone of South America, most natural forests are private property belonging to medium and small owners. In general, small forest owners in the Southern Cone differ from the better educated and more

organised small owners of Northern Europe, who are capable of reaching high forest management standards, even being certified, like in Sweden and Finland. In Chile, there are vast segments of poor farmers, with low levels of education and information and marginal ownerless operators performing small fuelwood operations on timberlands belonging to the State or to investors living in the big cities. Many of them operate outside the formal economy; others operate without any Management Plan, the Chilean Forest Service (CONAF)'s control instrument. According to Ministry of Agriculture information, it is estimated that the majority of natural forest in private hands belongs to 30 000 to 50 000 small owners. Due to CONAF's limited resources, it is materially impossible to exercise strict control over them. In the Province of Misiones, Argentina, where large areas of natural forests are located, a significant part of them are in the hands of impoverished settlers; and also marginal ownerless operators are also common. It is estimated that more than 30 % of the total volume of lumber produced in Argentina is handled outside the formal economy. Part of the deforestation and degradation of forests in the region is related to forest owners and operators as described above, who are often unaware of SFM and lack the scale economies and financial resources with which to deal with SFM and its related costs.

- *Costs and restrictions perceived as unreasonable, unfair or superfluous*. Public discussions on environmental issues often involve politics. Political sectors tend to gain popularity among people with little awareness of the costs of opportunity; they call for more restrictions, and this creates a trend of increased regulations. Some rules and regulations and even criteria for several certification systems burden the private operators with costs perceived as unreasonable or superfluous (for instance, costs for the conservation of non-endangered species, or strict regulations aimed at preserving biodiversity and the landscape in non-scarce forests whose main purpose is timber production, etc.). In the countries of the Southern Cone little attention is paid to or few regulations are imposed on the category of small operators described above, while strict restrictions, control and levies are imposed on settled businesses which are normally more visible to public scrutiny, easier to control, and often do less damage (Box 1). In this way, the most responsible may be getting punished and discouraged. This climate definitively does not encourage investment in SFM. Settled businesses feel themselves over-regulated, while serious problems remain unchanged in other sectors and among small scale operator. Rising costs can lead to an increasing area of forests becoming unprofitable for timber production (Ljungman, *et al.* 1999); reducing their value, exposing them to further destruction and creating an undesirable incentive for them to be used for other purposes[1].

Box 1. Examples of differential scrutiny of small and larger firms

- Most of the medium-sized and large forest companies in Chile are in the process of forest certification or they are already certified. According to CORMA, by mid 2001, companies holding 60% of planted forests in Chile will be ISO 14001 or FSC certified; while the possibility of small owners being certified still seems very remote. A national standard is currently being developed, and one of its main purposes is to allow small owners to be certified.
- Information from the Instituto Forestal shows that in Chile, 70% of native forest timber is used as fuelwood, and is mainly operated by small producers, in many cases outside the formal economy. Very little attention is paid to them by NGOs and Government agencies. On the other hand, chip exports accounted for about 25 % of the total timber from natural forests in the peak period (this is much lower nowadays), and companies related to this activity are under strict scrutiny by NGOs, and are heavily controlled by the Chilean Forest Service.
- In the Province of Corrientes, Argentina, just a small number of medium-sized and large forest companies have submitted the Environmental Impact Assessment as requested to fit into the new Forest Law. One big company was required to ask for special authorisation to perform afforestation operations (involving expensive studies and monitoring activities), due to the possible existence of an endangered species (a deer) on its lands. Those lands had been used before for decades by non-industrial farmers for raising livestock, planting soybean, rice and tea, and never had there been any mention of deer. Nor have any other non – industrial farmer or forest owners in all the Province been required to do so up to now. (Source: Papelera del Plata, Forestry Division).

Aspects which encourage private investment in SFM

- *Worldwide development of certification*. The worldwide trend towards forest certification, which is beginning to become a requirement in some segments of the market, encourages private producers towards better forestry practices. This creates an incentive for SFM, although it is not easy to believe that the market will offset its costs. On the other side, this incentive seems to have a limited impact because it rewards certification and improvement for those who already perform sound forestry practices while having a very limited impact, if any, among those performing poor forestry practices or working in informal economies.

- *The value of SFM for society*. The increasing value of SFM for society is an additional incentive to improving forest practices because it improves forestry operators' public image and their social acceptability.

- *Respect and acknowledgement of the value of forestry activities.* An environment in which forestry activities are seen as undesirable and depredatory, will hardly attract private investment to activities rooted in a formal economy and therefore, neither will it do it towards SFM.

- *Stable and clear rules with regard to property rights.* This is key for stable investment in the forestry sector because of the long time before that investment matures and because of the high exposure of the sector to public debate. In addition, stable investment conditions play a crucial role in promoting investment in SFM.

- *Stable rules for SFM and reasonable costs*. Basic economic logic suggests that private operators could adopt rules towards SFM if, after paying its costs, the profitability of the forest operation remains competitive relative to their alternative uses of capital. Therefore, when defining the rules regarding SFM, its cost-effectiveness ratio must be considered. On the other side, a scenario of constantly growing requirements and taxes will cause a natural lack of confidence with regard to the future profitability of forestry, thus discouraging investment.

- *Formal economy.* It is clear that any program intended to promote SFM among private operators, should first strongly encourage them to join the formal economy. As mentioned above, many forest operators in the Southern Cone still work informally and there is little prospect of improvement in their forest practices if they are not upgraded.

- *Development of simple certification systems, suitable for small owners.* As further commented on later, this should assist forest operators towards SFM, helping them to solve some of the most serious problems afflicting the sector in the region.

SOUTH AMERICA'S SOUTHERN CONE AND PRIVATE INVESTMENT IN SFM

General aspects. The Southern Cone[2] countries in the South American perspective

South American countries have significant forest resources (Table 2), both because of the area they cover as well as the biodiversity they contain. Many animal species and plants form the forest ecosystems of the Amazon as well as the temperate forests in the south of the continent.

Table 2. Forest Resources in South America (thousands ha)

Country	Native Forests	Planted Forests	Total Forests
Argentina	37.000	800	37.800
Bolivia	56.000	4	56.004
Brasil	451.800	6.000	457.800
Colombia	54.000	280	54.280
Chile	13.404	2.001	15.405
Ecuador	10.533	165	10.698
Paraguay	20.831	54	20.885
Peru	71.864	400	72.264
Uruguay	667	563	1.230
Venezuela	48940	727	49.667

Source: Prado 2000

The forest cover of Brazil, Bolivia, Peru, Ecuador, Venezuela and Paraguay represents one of the most significant tropical and subtropical rainforest reserves on the planet, accounting for about 715 million ha of natural forests and 7.5 million ha of forest plantations. On the other hand, Argentina, Chile and Uruguay have 51 million ha of natural forests and 3.1 million ha of forest plantations. The natural forests in Southern Chile and Argentina have temperate ecosystems that have been considered of high environmental interest by scientists and experts worldwide.

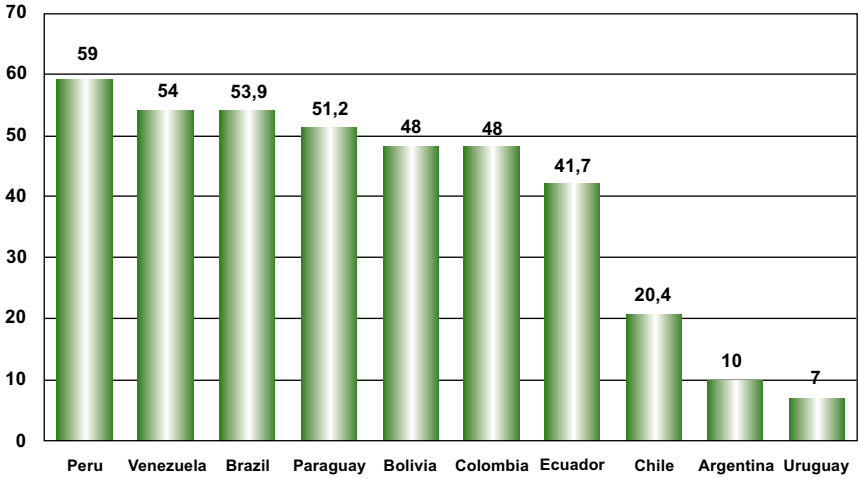
The ratio of forest cover in Amazon countries is high (Figure 2) where Peru, Venezuela, Brazil, Paraguay and Bolivia stand out with 50% or more of their total area covered by forests. Whereas the Southern countries, with relatively more prairies, deserts and ice sheets, have a lower percentage forest cover: Chile, 20,4%; Argentina, 10% and Uruguay, 7%.

Deforestation is a serious matter in South America (Figure 3). Forest cover has declined by as much as 23.7 million ha during the 1990-1995 period. Brazil accounts for more than half of this with 12.7 million ha. Bolivia, with 2.9 million ha and Venezuela, with 2.5 million have significant losses. The countries in the Southern Cone show the lowest deforestation rate: 595 000 ha for the period, including Argentina, Chile and Uruguay together. In these countries the problem is moderate in terms of average rates of losses over the total area of natural forests: Argentina, 0.24% yearly; Chile 0.22%; and Uruguay almost 0, trivial rates if compared to Paraguay, 1.56%; Bolivia and Venezuela, 1% and Brazil 0.56% yearly.

Forest plantations in South America's Southern Cone and their growth potential

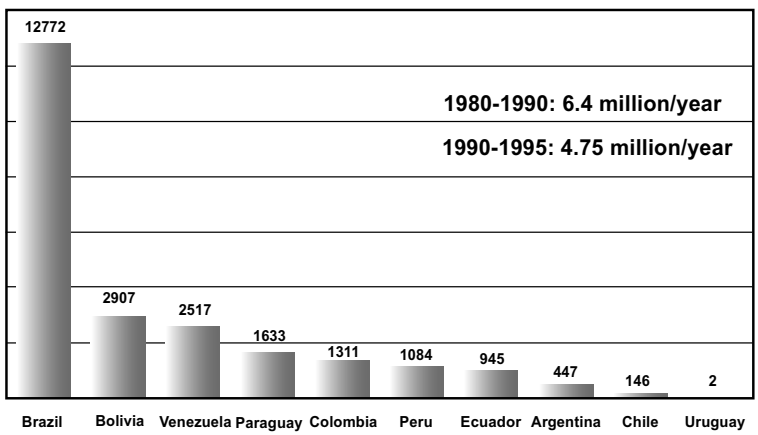
The Southern Cone is characterised by its ability to develop forest plantations. Chile has 2.1 million ha, mostly radiata pine and eucalyptus *globulus* and *nitens*. Argentina

Figure 2. Percentage of Forest Cover per Country (%)



Source: Prado 2000

Figure 3. Rate of Deforestation 1990 –1995 (thousands ha)



has 800 000 ha, mostly *taeda* and *elliotti* pine, poplar, willow and a variety of eucalyptus. Uruguay has 470 000 ha of pine and eucalyptus. Forest plantations are usually placed in areas uncovered by natural forests. It is estimated that in Chile, between 1985 and 1994, nearly 1% of the native forest has been replaced by plantations. In Argentina, new plantations are being developed mostly in areas used for livestock, although between the 60's and 80's, there was some replacement of secondary forests by plantations in the province of Misiones. In Uruguay replacement is non-existent due to its forestry and geographical characteristics.

Forest plantations in the Southern Cone support the bulk of the forestry industry; in Argentina nearly 70% of raw material supply and in Chile nearly 90%. In Chile, these resources have led to the development of industry of regionally significant size with exports of over US$2 000 million by the year 2000, it being the country's second biggest industry. Forestry industry performance in Argentina and Uruguay is more incipient but with great potential due to the existing plantations, as well as both countries' prospects of increased plantation areas in future.

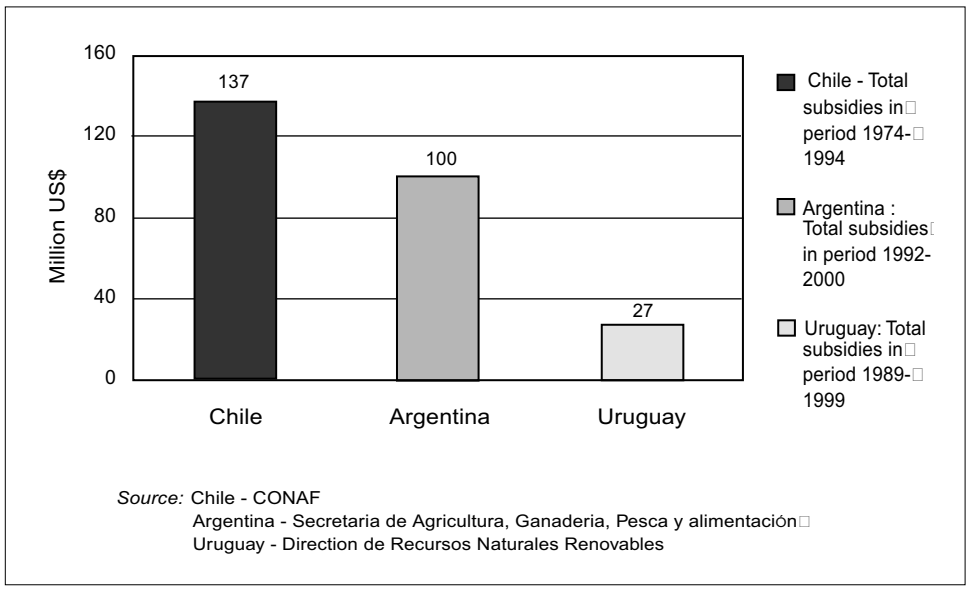
In the Southern Cone, Argentina is the country which has the biggest area suitable for forestry, estimated at 20 million ha of land. About half of this is located in areas with a suitable climate for fast growth. If afforestation continues at the rate of between 50 000 to 70 000 ha yearly, the plantation area of Argentina could reach over 2 million ha by the year 2020. Uruguay has 3.57 million ha officially declared suitable for forestry; but when including the land used for raising livestock, this area could easily reach 5 million ha. At present it is progressing at a plantation rate of about 60 000 to 70 000 ha yearly. At this rate, Uruguay could reach a productive plantation area ranging between 1.1 and 1.3 million ha by the year 2020. Chile already has 2 million ha planted but the increase rate of new plantations has been declining due both to the consolidation of forestry development and to loss of economic dynamics within the sector. CORMA, the Chilean Association of Forest Industries, estimates that there is still potential for some 2 million ha left, but as projections currently stand, it is more likely that the planted area will amount to 2,7 million ha by the year 2020.

Private investment in the forestry sector

Although in the past, public investment in afforestation played a major role, increasingly over the past three decades, afforestation has been financed mainly by private sources. In the countries of the region, the State fostered policies aimed at encouraging afforestation, acting as promoter and controller, but generally keeping away from direct operation. The first program, which proved to be successful on a large scale, was introduced in Chile in 1974 and today, Argentina and Uruguay have similar promotion policies (Figure 4). It is estimated that during the 20 years the forestry promotion law was in force in Chile (D.L 701), the State invested about US$140 million in subsidies for afforestation and management, something that catalysed private investment amounting to more than US$4 000 million in afforestation, management and industry

In forestry, it is particularly interesting to realise that certain projects of social interest (such as SFM in natural forests) might not be sufficiently profitable for private investors, and if they are meant to be carried out by the private sector producing 'public goods', private profitability should be increased by means of subsidies. In this case, the subsidies are none other that the transfer of a part of the profitability or the value that society earns through the 'public goods' resulting from the SFM, so that private incentives fall into line with society's interests[3] .

Figure 4. Subsidies to Promote Afforestation

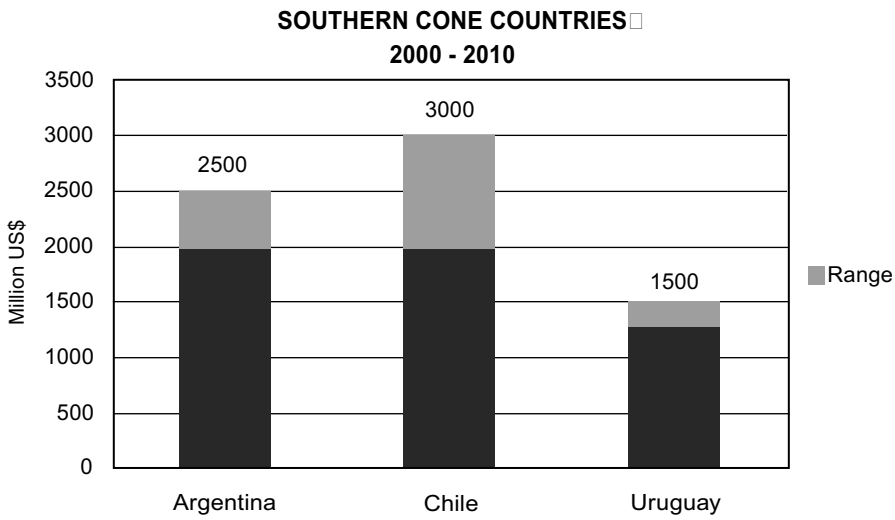


Source: Chile - CONAF
Argentina - Secretaria de Agricultura, Ganaderia, Pesca y alimentación
Uruguay - Direction de Recursos Naturales Renovables

It is important to note that subsidies, by themselves, might not to be successful. In the Chilean case, in 1974 when the forest subsidy was set, there was a business environment in which forestry profitability was not privately attractive due to market uncertainties, the long time frame involved, recent bad experiences with regard to seizures, etc. Incentives through subsidies were successful because they were complemented by the creation of a credible environment for investment, guaranteed private property, and stable 'rules of the game'. With none of the above, subsidies would probably not have been as successful as they were. As economic tools when markets do not accurately reflect social values (as happens with regard to different environmental aspects related to forests) subsidies can be very useful in two senses: moving private operators towards the production of public goods desired by society, and revealing to society the real cost of producing them. The latter is of more significance when it gets to judging if the demands of society stick to reality.

It is estimated that in Argentina, investment in afforestation amounts to about US$70 million yearly (including a fraction for land acquisition) and investment in the sector this decade is set to be US$2 500 million, mostly from private sources. For Uruguay, the outlook is not that clear, but an investment ranging between US$1 300 and US$1 500 million in afforestation, industry and related infrastructure over the decade is likely. In Chile, despite the slowing down of its forestry sector, additional investment from private sources ranging between US$2 000 and US$3 000 million in the decade is expected (Figure 5). To be sure, the major part of this investment is directed toward plantations and their related industry. The natural forest sector normally

Figure 5. Projected Private Investments in the forestry sector



Source: Personal research in CORMA (Chile), AFOA (Argentina) and Independient Consultants (Uruguay)

offers lower and more uncertain profitability and a more unstable climate for investors, who, in addition, face the opposition of environmental groups to medium – sized or large projects (Box 2).

Generally, in the region there are no clear rules and norms referring to the native forest which would allow investors to perform their activities with the confidence that they will neither be exposed to attacks on their public image nor to increasing restrictions that could even end in confiscation.

In the Southern Cone, the productive forestry sector and its more dynamic operation is almost completely in private hands. That is why it is reasonable to think that any SFM promotion policy in the region should consider the leading role of private investment. This idea gains further weight in view of the countries in the region being ones undergoing development which have to deal with overburdened fiscal budgets to cover still pressing social requirements in terms of health, education, infrastructure, the fight against delinquency and others, which obstruct the availability of a significant amount of fiscal resources to operate programs for SFM on a broad scale.

SFM's situation in the Southern Cone

The sustainable management of natural forests, in the sense that it achieves timber production and other environmental services simultaneously ('microscopic

Box 2. Examples of Investments in the Natural Forests of Chile

Río Cóndor and Cascada are the main projects presented during the last decade in Chile, in relation to the productive use of natural forests

1. **Río Cóndor Project (Chile).** The project started in 1994 on Tierra del Fuego, XII Region, in Southern Chile.The main investor is Forestal Trillium from the USA, with an investment of US$ 200 million. The project includes a sawmill and a MDF mill. The raw material to be used will be obtained from Magallanic Lenga and Coigue forests. The project will provide employment for nearly 500 people and covers 272.7 thousand ha of forestry land and 147.9 thousand ha of forests. The harvesting plan included thinning out while keeping the forest cover. Lenga is the second most abundant species of all Chilean native forests, covering 3.4 million ha, which represents 25.5% of all Chilean native forest areas; whereas Magallanic Coigue covers 1.8 million ha representing 13.3% of Chilean native forests.

   In 1994, Trillium volunteered an environment impact assessment (although at that time Chilean legislation did not require it) worth nearly US$ 3 million. The assessment was presented in 1995. From then on, the main environmental NGOs and related groups of parliamentarians launched a strong campaign against the project including reports, accusations, propaganda in the media and legal action against the State resolutions by means of which the project had been approved. Finally, in 1998, the Board of Ministers of the National Environment Corporation approved the project with very many restrictions, requirements and modifications, including an expensive environmental insurance (never required before in Chile). Trillium is redefining the project and it looks as if there is a slight chance of making its original purpose true, namely, the utilization of timber from native forests and the operation of its related industry.

2. **Cascada Project (Chile).** The project was launched in Chile in 1998 by the Compañía Industrial of Puerto Montt, which is an alliance between Maderas Cóndor (a local business) and Boise Cascade Corporation. The site of the project is located at Ilque Bay, Puerto Montt, X Region, in Southern Chile. The investment amounts to US$ 180 million and includes an oriented strand board (OSB) mill for the production of 500 000 m^3 yearly and a deep water port. The project attempts to acquire native forest timber from independent suppliers, the reason why no land or forests were purchased. Chile is a major chip exporter for paper production and before the project was launched, the chips came mainly from native forests (today they come mainly from eucalyptus plantations).

   The main NGOs concerned with forestry issues have firmly opposed the export of chips from native forests and their main argument has been that the forest was being exported with 'no added value'. The Cascada project would solve this apparent problem by industrially using the chips in the country. In spite of this, as soon as the NGO's and related politic sectors learnt about the project, they launched a strong campaign against it. In 1998, the company prepared and displayed an environmental impact statement in accordance with the requirements of the country's Framework

Box 2. *Continued*

Environmental Law. The project was approved in 1999 by the regional environmental institution in charge, but environmental NGO's and related groups appealed against the resolution in the Court of Appeals in Puerto Montt. The appeal was rejected so that should leave no more legal hurdles in the way of the project. However, this year (2000), some Chilean NGOs asked the Chile-Canada Cooperation Commission to intercede against the project by virtue of the bilateral treaties between both countries. Some NGOs from the USA also launched an international campaign against Boise Cascade (a partner firm) including an assault on its headquarters. The project has, as of now, been indefinitely postponed. According to Boise Cascade, 'it is waiting for a better economic climate'.

Source: CORMA (Chilean Association of Forest Industries)

sustainability'), hardly exists in the region. In Chile, for instance, between 1985 and 1994, it is estimated that managed native forest area amounted to 106 000 ha (Emanuelli 1996) which is less than 0.8% of the total area.

But, if we take a broader point of view of SFM, in the sense of the 'macroscopic sustainability' mentioned before, then we should consider the role of native forests devoted deliberately to conservation as areas under management, whether or not they are being worked. In the same sense, significant areas of forest plantations managed with the primary aim of timber production should be considered as areas under management because they complement their role with the conservation role of the areas of natural forests mentioned before. Considered in this light, in the case of Chile, 28.8% of all natural forests fall under the category of preservation within the Protected Wildlife Areas of the Country; while it is estimated that 23.1% of all natural forests are carrying out tasks of hillside and watercourse protection, and therefore they are not managed for production. It can also be estimated that about 80% of all forest plantations in Chile are carrying out management plans supervised by the Forestry Service, with the prime objective of producing timber.

Countries in the Southern Cone have legislation regarding SFM. In Uruguay, Law 15.939 of 1987 protects the natural forests with a ban on logging while afforestation practices in forestry priority areas are regulated by Afforestation and Management Plans to be displayed by the foresters. Forests are classified according to the forests' primary objectives as Yield Forests, Protective Forests and General Forests (once more the concept of 'macroscopic sustainability' is implied because they complement each other). In Argentina, the Law on Investments in Cultivated Forests (1998) requires that every project wishing to gain access to its benefits undertake an Environmental Impact Study. The regulation of native forests in Argentina adjusts

more to provincial rules, which makes it more heterogeneous. In Chile, as mentioned before, afforestation and its management must adjust to Management Plans approved by the National Forestry Corporation, which also ensures compliance thereof. Operations in large native forests are regulated by the Draft Environment Law, which requires Declarations or Environmental Impact Assessments, according to the features of the activity. There has been debate over a new law for natural forests in this country but due to the lack of agreement between NGOs and the industry it has not yet been passed, even after eight years of discussions.

Private initiatives towards SFM should also be pointed out. Lately, and particularly in Chile, the industrial sector has taken some steps towards the certification of environmental management systems ISO 14 001, and some companies are being certified by the Forest Stewardship Council (FSC). It is estimated that by the middle of the year 2001, 60% of the planted forests areas in the country will be somehow certified (CORMA). Moreover, the industry, together with research organisations and the support of the government, is defining a National Standard that could match the international requirements of the Pan European Forest Certification (PEFC) or some other national certification systems. One of the main tasks of this program is to promote certification among small producers. The definition of FSC criteria for the country is being developed as well. In Argentina and Uruguay, certification systems and certified forestry businesses are still rare, but, they are undoubtedly on the increase. This is because the major forestry businesses in Argentina and Uruguay are related to Chilean, European or North American investments, which surely will manage their forestry practices corporately.

It is more likely that forestry practices in the Region, in general, come closer to SFM when performed by large companies, due to the level of their information and financial resources and to their exposure to the market and public opinion. Small and medium-sized companies perform their practices within a wide range, from simply carrying out their management plans (which already means, in many cases, afforestation, soil care, forest ordaining, etc) to no sustainability at all. As mentioned earlier, in the Southern Cone a significant proportion of plantations and native forests belong to small owners. In Chile, for instance, nearly 40% of all pine plantations and over 50% of eucalyptus plantations belong to small and medium-sized producers; while large and medium-sized companies control nearly 5% of the native forests outside the State Wildlife Protected Areas, of which the main part belongs to 30 000 to 50 000 owners. This is particularly relevant when trying to promote realistic SFM policies involving the private sector.

Environmental challenges and opportunities for SFM in the Southern Cone

Next, some key aspects that can help point policies and private initiatives towards SFM:

- *Determine definitions with regard to the conservation needs of natural ecosystems*. One element that could help define policies in order to promote SFM, would be to make these conservation needs visible and comparable to other needs. This discussion must be held with full knowledge of the social and economic as well as the environmental costs and benefits related to the different levels of conservation. In the absence of this information, the practical result is a clash between the private desire to productively use the most and the NGOs preference to preserve the most. The policies arising from this conflict tend to favour those with more influence or pressure power and rarely reflect the optimum balance required by society due to either insufficient safeguards for environmental values or to excessive and unnecessary productive immobility.

- *Reduce deforestation rates with proper policies*. Although, as mentioned before, deforestation is less of a problem in the Southern Cone than in the rest of the Latin American region, there is much that can be done with proper policies and promoting better forestry practices among private operators.

- *Add larger natural forest areas to production under forestry management*. From the private sector's point of view, the main cause of deforestation and the destruction of natural forests is the private devaluation of the forest estates in the eyes of their owners or operators. The management of natural forests adds private value to these and favours the production of "public goods" for society. The almost insignificant level of this practice in the Southern Cone raises significant challenges and opportunities.

- *To take advantage from the opportunity to increase plantation areas to be managed according to environmentally sound practices*. Countries in the Southern Cone have an immense potential to increase their plantation areas, something that could add great environmental benefits for them and the world (according to a macro sustainability view), besides sparking important socio-economic development opportunities for them.

- *Offer forestry solutions to impoverished rural communities*. Forestry, through proper solutions and with the support of the government and private organisations (NGOs) can lead to an improvement in the situation of impoverished small owners and rural communities, contributing positively to improving overall forest practices.

HOW TO IMPROVE THE MOVE TOWARDS SFM?

The required business environment

To promote private investment in SFM, private investment in forestry as a whole has to be promoted. For that purpose we need to create a 'favourable climate for investment', which means:

- create a respectful environment towards private activity being ready to recognise its contribution to society; create a country-wide mentality with regard to the contribution of the forestry sector to society and recognise forestry as a positive activity in a social and environmental sense, if properly performed;

- have a clear and stable legislation;

- have accurate definitions of the scope of property rights and respect them thoroughly;

- create a clear information environment about the forestry sector and its activity and fight those misinforming activities that tend to twist forestry's image before the public; and

- try to build up a culture able to recognise and value total or partial achievements towards sound forestry practices.

Policies and initiatives

A policy oriented to promoting sound management with continuous improvement

The outcome of certification worldwide is that, as a whole, forest operators already performing sound practices are certified, while little, if no result has been achieved among those who operate unsustainably. The main environmental problems related

to forests (deforestation, damage to the soil and watercourses) can be solved, in general, at the primary and basic stages of sound forestry practices, rather than at the more perfectionist level where the debate on SFM rages. Important progress towards SFM could be made if policies focused on the achievement of basic levels of sound forestry practices and continuous improvement were to be promoted according to the reality of each productive unit.

The promotion of notions of sound management at a low private cost

In countries where the private sector plays a crucial role in forestry, any realistic approach in aid of better forestry practices should consider that the private balance between benefits and costs must be positive; even more, it must ensure competitive yields compared with other sectors of the economy. Therefore, it is of great significance and absolutely essential to define concepts of sound management focused on eliminating or reducing the most serious environmental problems as well as encouraging the production of all those public goods which do not entail an additional cost for the private operator.

Those demands for public goods that burden the private operator beyond his competitive balance between benefits and private costs, should be financed by society as a whole, or simply sacrificed in the interim until society can afford to progressively underwrite the costs.

The definition of priority management objectives reduces SFM costs and makes it feasible

The contrasting approaches favouring 'micro sustainability' or 'macro sustainability' have been discussed above in presenting contrasting perspectives of SFM. The latter notion makes the balance between development and conservation more feasible. It allows priority areas of conservation to be defined, many of which have a low economic opportunity cost and can be acquired by the State, ensuring that society's resources concentrate on those areas where they are most needed. On the other hand, it allows more basic standards of sustainability to be assigned to priority areas of production which makes it possible for private operators to finance their costs so that these sound basic practices can be enlarged upon. The notion of 'macro sustainability' lies in the same economic logic as the 'theory of comparative advantage' and it has been demonstrated (Vincent and Binkley 1993) that this is the way that involves the lowest social and private cost to cover the various demands on forests.

The definition of realistic action for real people. Involve small producers

As said before, the ownership or exploitation of forest resources in the Southern Cone is, to a large extent, in the hands of private operators, many of them of small scale. In

many cases, the main problems of inappropriate management are related to this segment due to a lack of knowledge, or resources, or both. It is therefore remarkable that this segment is often under little or no pressure on the part of organised sectors of society (NGOs) which causes people to focus on larger operators that often have fewer problems and already act more responsibly. The State and the NGOs can, at this point, play a major role in grouping producers into associations or productive groups with access to technical advice that will help them to adopt 'sound forestry practices' (Box 3). For this segment of operators, it is essential to ask for basic 'sound management' rather than perfect SFM to ease their cost-benefit ratio through a 'macro sustainability' approach.

Box 3. Incorporating and financing small forest owners

Chile is working on a management and financing project that seeks to bring small owners into the formal economy. Fundación Chile, an autonomous, publicly and privately funded organization that undertakes technological transfer, carried out a project through which small owners will obtain annual benefits for timber producing forest plantations. This is possible through a financial tool called 'securitisation' which works as follows:

- Creating the company that will manage the system.
- Small-and medium-sized owners hand their land over to the project under a 'deed of usufruct'.
- The management company makes a deal with private forest companies so that they afforest the land with competitive technology and, simultaneously, establishes a contract in which they commit themselves to buying timber at market prices in the future.
- The management company provides an annual payment to the landowners through securitisation. In addition, the latter will: receive subsidies for afforestation, recover land and other actions; be able to supervise plantations, get forestry jobs and receive part of the income from timber sales, when the forest matures for harvesting.
- For their management, forestry companies will get paid a part of the timber when harvested, and have the first purchase option through a contract. As they have control over the timber, they will be able to increase the supply of their industries with no need to buy land.

The project is at an experimental stage on over 7 000 ha which do not correspond to usufruct rights with independent owners but which were acquired directly by the management company. In addition, the management company is already holding negotiations to incorporate the financing of carbon transactions to enhance the project.

Source: Fundacion Chile

The State: incentives and control. National certification

Generally, in order to give private operators an inducement to take positive action, it is better to try to align their targets with those of society. To force positive action on them through bans, levies and police control has proved to be ineffective. These coercive approaches often fail due to a lack of resources for control purposes and vulnerability to corruption. A good balance between simple legislation, well-aligned incentives and effective control (easier, thanks to well-aligned incentives and simple norms) can lead to a substantial improvement of forestry practices. A positive contribution could be achieved through national voluntary standards of SFM, which permit certification at various levels so that small operators can be incorporated. The validation of national standards by international ones like the PEFC could encourage these operators to adopt them, and also offer an additional alternative to industry. The State could benefit from these norms allowing, for instance, that those who are certified by third parties are granted exemption from certain State controls. This way, instead of investing in wide-ranging controlling bureaucracies, many resources could be assigned to finance association and certification costs for small producers. And this tool can be used to encourage SFM, as we will see next.

The State: Financing and promotion

As said before, one key aspect is society's willingness to contribute to financing, through the State, those public goods demanded from forests whose financing is not privately viable, for instance:

- Subsidise the management of the native forest in order to enable its private profitability to compete with other alternatives, such as plantations, or even more, with non-forestry alternatives that lead to deforestation.

- To promote voluntary certification as commented under 'incentives and control' above, by means of tax exemptions or reductions. This can reduce control costs and introduce a real incentive to operate using 'sound practices', especially among small operators.

- Promote the financing of some environmental services, helping private operators to get carbon capture returns on their SFM projects. This can relieve the fiscal costs of financing conservation areas, subsidising management and supporting certification.

- To set prices on some positive externalities: for instance, letting the tourism industry participate in financing SFM in those cases in which it benefits from the forest landscape. If this is not done, to demand SFM from forestry operators alone may burden them with a cost that benefits others.

The State: Guarantee property rights and outline their boundaries

As said before, a clear definition of property rights is essential for investment in the forestry sector, and crucial if SFM among private operators is to be promoted. At the same time, it is very important to keep these definitions stable in order to avoid private operators from perceiving a trend of constant increases of levies and confiscations with no cost compensation. The State has to make sure that changes in norms or legislation that involve the production of more public goods, provide compensation for changes in vested rights, especially when they have an adverse effect on the minimum profitability that a private operator may expect from his forestry operations. Otherwise, it risks useless legislation and increasing abandonment and private devaluation of the forests, which leads to their damage and destruction.

Information

Information is vital to promote SFM practices. It is necessary to know about the reality of forestry in order to focus incentives and control policies where they are most needed. Furthermore, it is of utmost importance to let the public get an impartial view of the reality of forestry, so that its concerns are properly cleared up, without generating pressures based on myths or beliefs that cannot be supported in reality. It is also important to inform the public about improvements as they are achieved, resulting in an encouragement to those who contribute to them, through an acknowledgement by public opinion.

Cooperation between Society and the NGOs

The NGOs can contribute towards major progress in the direction of SFM if they move from a stance of 'perfect SFM or nothing' towards a more flexible one, which acknowledges different ways towards SFM and sound forestry practices. This acknowledgement could encourage vast numbers of private operators to adopt basic sound management criteria if the NGOs are willing to differentiate between them and those who do nothing. On the other hand, as said before, the awareness and concern of the NGOs have been mainly concentrated on the performance of large private and medium-sized businesses. At least in the Southern Cone, more attention by the NGOs should be directed towards the environmental problems of forest management by small operators (which are relatively significant) and should focus on the search for practical solutions; this could contribute greatly to solving them.

CONCLUDING REMARKS

- Latin America, which possesses great natural and planted forestry resources, faces deforestation and damage problems of these resources, especially the former[4]. The promotion of better practices towards SFM is one of the policies that could contribute to changing this situation. If multipurpose management of natural forests is considered to be the definition of SFM, then it is almost insignificant in the region. However if SFM is seen from a broader point of view, evidence of considerable progress in conservation management can be found and a significant proportion of planted forests fulfil at least the basic forestry practice requirements.

- The major players in the forestry sector in the Southern Cone are private owners and/or operators. So, in any attempt to achieve sound forestry practices, private activity and investment will be crucial.

- The main opportunities/challenges for the Southern Cone with regard to SFM are to reduce deforestation and natural forest damage, to take advantage of the chances to increase plantations and to improve the contribution of forestry to neglected rural sectors.

- A key factor for attracting private investment to SFM is that these practices should lead to competitive private profitability for the investor apart from their broader benefits to society and the environment. This can be achieved by:

  - considering as a private cost only the basic elements of sound forestry practices and creating a willingness on the part of society to help the private operator to finance the production of a part of the public goods it demands from forests.

  - simplifying and making the notion of SFM socially and economically more efficient by means of accepting the views of 'macroscopic sustainability', thus allowing a certain specialisation of forests according to priority management objectives.

  - creating national certification standards which can be validated on an international level and which acknowledge basic improvement steps towards SFM, so that they can be adopted cost-efficiently.

- Creating a favourable climate for investment in forestry is another essential factor in attracting private investment in SFM, with a clear outline of property rights; providing stable norms, rules and laws; promoting a positive view of forestry oriented towards SFM; recognising environmental achievements and progress on the part of the different agents; and having accurate information about the condition of the resource as well as divulging realistic information to the public.

- The State can contribute to financing SFM in order to boost private investment by means of:

  - setting prices on externalities produced by the forests, when possible (for example: tourism-forests);

  - helping to narrow the gap between private and social profitability in the management of native forests and afforestation on bare lands through subsidies;

  - supporting access to resources from the carbon market to finance conservation and natural forest management programs, as well as afforestation in situations with low private timber profitability.

- The State can contribute to guide private agents towards SFM and control their activity through:

  - simple and easy-to-control legislation;

  - the promotion of voluntary certification, reducing public control over certified companies or forests.

- Great progress in sound forestry management can be achieved by attending to the segment of small-and medium-sized operators. Particularly important at this point are simple policies, certification systems that acknowledge basic stages achievable at reasonable cost, and the encouragement to become associated and especially to join the formal economy.

- The NGOs can contribute to private progress towards SFM through:

  - a flexible approach that recognises and encourages basic achievements in forest management improvement;

  - incorporating the 'macroscopic sustainability' view;

  - acknowledgement of the importance of solving problems at a small and medium-sized producer level; and

  - contributing with initiatives and practical solutions on this same level.

ENDNOTES

[1] The market often assigns negative values to natural forests which encourages their destruction and replacement by other uses of the land. Examples: (a) In the Province of Misiones, Argentina, the land covered with 'capueras' (natural forest renewals) with no timber potential, is worth nearly US$ 300 /ha. less than those areas without natural forest cover or covered with small scrubs in low density; (b) In Chile's X Region, the land covered by degraded or natural forest renewals (with no timber potential) is worth nearly US$400/ha. less than clear land or that covered with minor vegetation. In many cases, no value at all is given to land covered with such category of natural forests. Source: Personal research, interviews with producers, members of CORMA (Chile) and AFOA (Argentina).

[2] Argentina, Chile and Uruguay

[3] A good example of subsidies as tools to narrow the gap between social and private profitability is free education. It would have negative private profitability for a private operator, even though its social profitability is very high: in Chile, the State, through the municipalities, grants subsidies to private schools so that they can offer free education. This way, a large State bureaucracy in the education area, is avoided.

[4] However, in the Southern Cone, although these problems exist, they are not that serious.

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Chapter 6

Investing in Sustainable Forestry

Peter Mertz

This document by Peter Mertz was originally in POWERPOINT. In the conversion to WORD, some editing has been done to unify the text but the bullet points format has generally been left as it was. Some charts have been converted into tables. The presentation communicated the following among its key messages:

- Sustainable timber development will be required globally to meet society's future needs for wood.
- Low impact harvesting of indigenous tropical forests can only provide part of these needs.
- Plantations offer more promise for addressing these needs as well as social, environmental and economic aspirations.

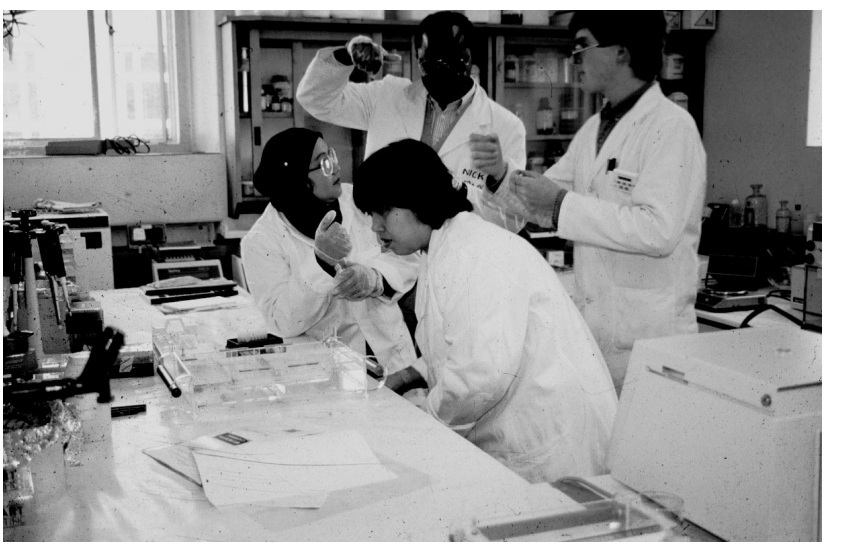
OUTLINE

- An introduction to UBS Timber Investors
- What makes forestry an attractive investments?
- UBS Timber case studies
- Investment considerations
- Conclusion

THE LEADER IN GLOBAL TIMBERLAND INVESTMENTS EXPERIENCE

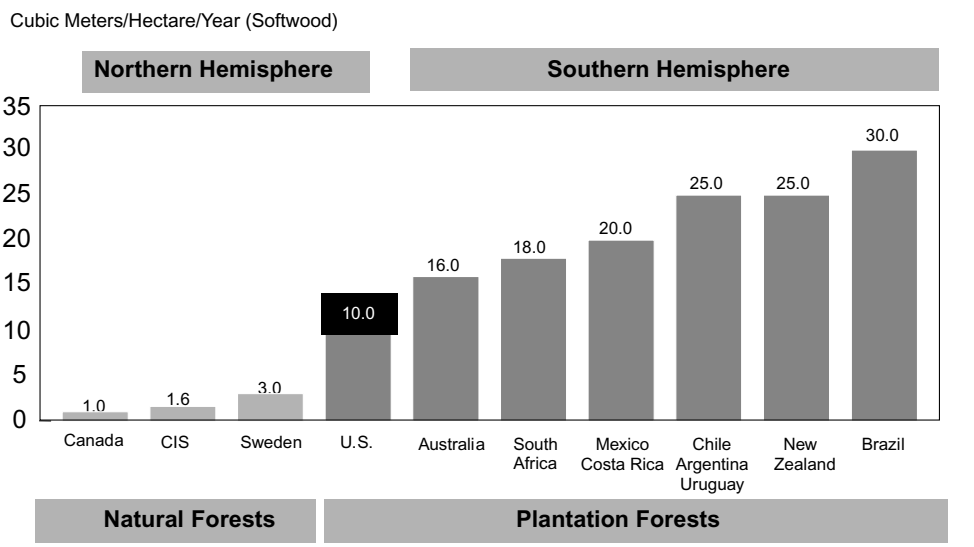
UBS asset management structures and manages timberland investments on behalf of institutional and private clients. UBS offers closed-end commingled funds and individually managed accounts tailored to meet the needs of investors. It has the following assets to manage worldwide:

Location	**Assets (US$ million)**
Argentina	*20 m*
Australia	*100 m*
Chile	*230m*
New Zealand	*250 m*
USA – by subregion:	
Northeast	*20 m*
South	*50 m*
West	*65 m*
Uruguay	*50 m*



- One of the oldest timber investment management organisations:
  - Founded in 1982 as Resource Investments (RII)
  - A part of UBS since 1995
- Extensive global expertise
  - Investment experience in seven countries
  - $1.5 billion in assets under management
- Disciplined investment process
  - Research and team-driven
- Proven track record of performance
  - 10.7% inception-to-date IRR (internal rate of return) of composite (since 1997)
- Experienced team of forestry and investment professionals
  - Since 1995, participated in over $700 million of forestry transactions
  - Raised over $650 million for strategies focused on sustainable forestry

Average Forest Growth Rates



Source: New Zealand Forest Research Institute and Chandler Fraser Keating

WHAT MAKES FORESTRY AN ATTRACTIVE INVESTMENT?

- The benefits of timber investment
- Competitive, long-term rates of return
- Positive impact on portfolio returns
- Predictable tree growth
- Favourable demand/supply outlook
- Management/market flexibility

PLANTATIONS CAN PROVIDE MOST OF THE INCREMENTAL NEEDS FOR WOOD

- Biological productivity
- Financial returns
- Sustainability
- Other benefits which meet society's broader needs

Plantations sustainability

- There is overwhelming evidence that plantations can be grown in successive rotations to achieve increasing yields and create/protect non-timber values.

- These management processes are amenable to environmental certification.

- The land area required to meet incremental future wood needs is significantly less than that required if we were dependent on indigenous forest harvests.

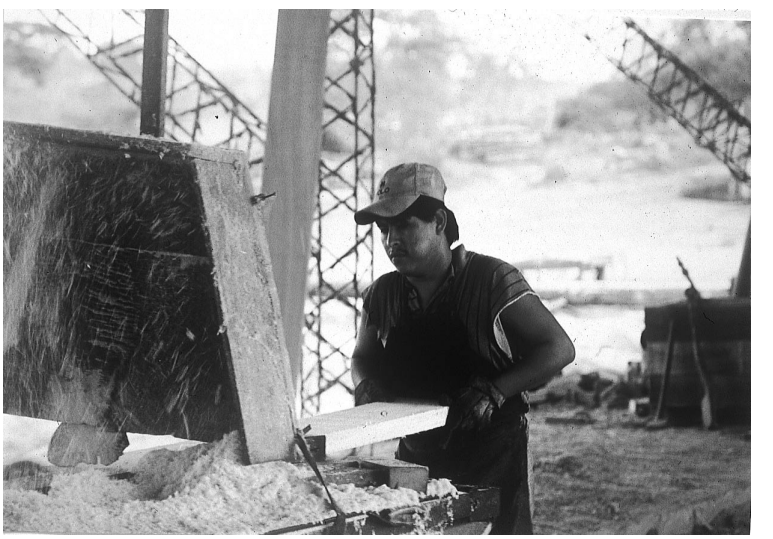
- These new plantations can be established on either degraded soils or land considered less suitable for farming.

  - Afforestation takes the pressure off indigenous forest harvests.
  - Reforestation, with enhanced yields, also contributes to the same result.

FORESTRY INVESTING CONTRIBUTES TO IMPROVING OUR ENVIRONMENT

- Wood is a renewable resource, for both fuel and fibre reducing dependence on extraction-based industry.

- Wood requires far less consumption of energy to produce than steel, concrete, or plastic.



- Reduces burning of fossil fuels and the resultant greenhouse gases
- Forests store carbon as they grow, reducing global warming
- New and existing plantations remove pressure from old-growth and natural forests
- Investing supports sustainable employment. Plantations:
  - Create rural year-round jobs.
  - Typically employ more people than agricultural alternatives.

CASE STUDIES

Plantations provide many countries an avenue for economic development/diversification that is renewable, generates earnings and reduces pressure on indigenous forests.

Southern Hemisphere

A joint venture has been established with Weyerhaeuser Company to build a diversified portfolio of sustainably managed, planted forests in the Southern Hemisphere.

- Funding launched and capital subscribed November 1996 through to April 1997
  - Participation by over 30 institutional investors
- Funding invested in two geographies
  - Australia
  - Uruguay
- In Uruguay, Colonvade SA is building a forestry estate of 100 000 ha.
  - Planting pine and eucalyptus on over 70% of the area owned;
  - Established a nursery to grow seedlings;
  - Supporting independent research on the watershed impacts of forestry;
  - Will be investing in value-added wood products manufacturing

Case study – Chile

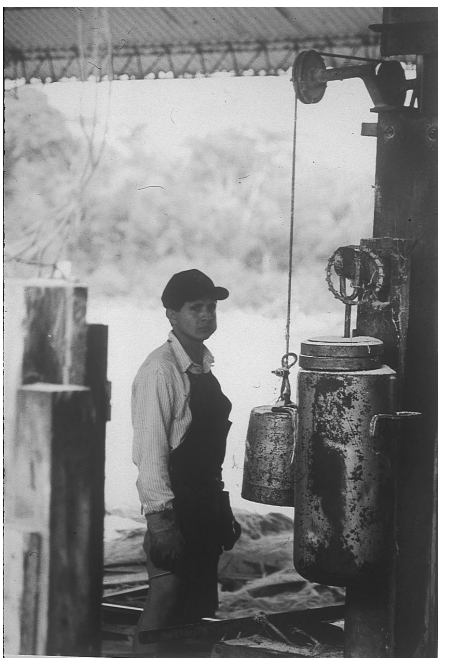
In 1993, our firm made its first investment in Latin America, acquiring a 40% interest in Fletcher Challenge's Tasma Chile venture which includes 50 000 ha of planted radiata pine forests and a small newsprint mill in conception

- In 1999 we sold our interest in the papermill back to Fletcher and acquired their interest in the forestry company.

- As a result, our investors own the fourth largest planted forest estate in Chile.

  - World-class forest management team in Forestal Bio;

  - A small value-added manufacturing facility which exports lumber and remanufactured products to US markets.



Case study – Argentina

A registered security was created for Argentine pension funds (AFJP's) to enable direct investment in domestic forestry.

- This required two years of working with pension funds, regulatory agencies and the Argentine government to ensure a favourable investment climate and workable investment structure.

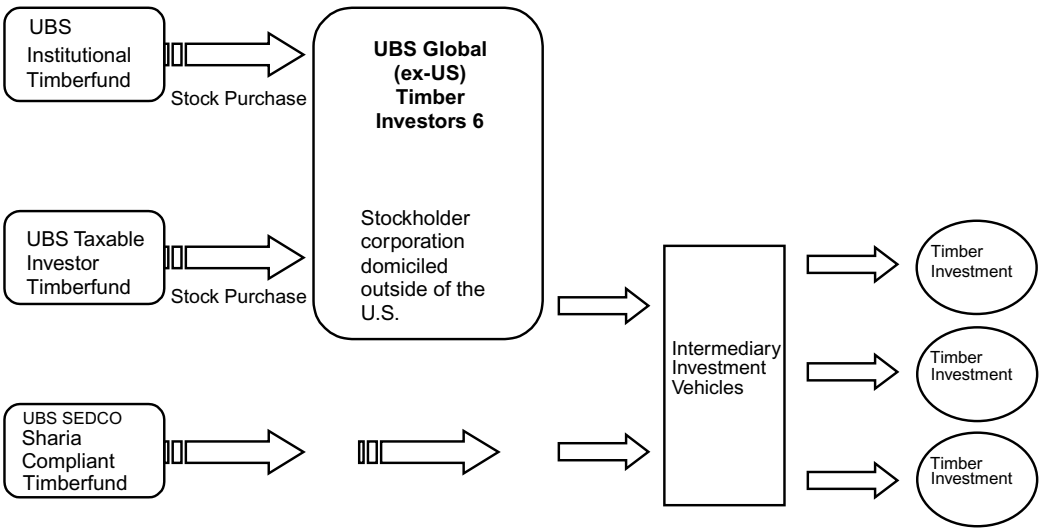
- Fund launched and capital subscribed in February 1999 - participation by 11 AFJPs.

- Fully invested in over 17 000 hectares of young forests and land in Corrientes Province.

Case study: Closed-end pooled funds

Closed-end pooled funds will invest in high quality timberland in locations (other than the US) with an emphasis on fast-growing softwood plantations. The focus will be on areas with the highest tree growth, such as South America, Australia and New Zealand.

- Funds launched and capital subscribed in January 2001



WHAT DOES UBS CONSIDER WHEN INVESTING IN A GEOGRAPHY?

Criteria (applied in country assessments) include:

- Relative risk
  - Political stability
  - Ethical, legal framework
  - Financial stability
- Land tenure rights
- Government interest in and support for forestry
  - Tax
  - Legal
  - Regulatory
  - 'Project of national interest'

- Global competitiveness

  - Access to world markets
  - Quality of infrastructure
  - Availability of quality workforce

CONCLUSION

What should be done?

Investment models, which utilise a landscape approach and create a mosaic of low impact sustainable indigenous forest use alongside intensive plantation development should be encouraged and supported.

- Role for governments to create a favourable investment climate

- Role for expanded investment by host country institutional investors

- Role for research institutions

- Role for investment advisor expertise.

Chapter 7

Mechanisms to Encourage Private Capital Investment in the Environmental Services of Forests

David Brand

Abstract

Forests provide many ecological and environmental services that are unrecognised by financial markets. Yet recent research indicates that if these services were priced, their value could contribute substantially to achieving sustainable forest management. The recognition by the Kyoto Protocol of a limited role for forests in efforts to address climate change has provided a foundation for innovation and commercial development of a market for an environmental service from forests. The conceptual work is now expanding to include potential markets for the recovery of land degradation and the conservation of biodiversity. However, the challenges in establishing these new 'environmental infrastructure' funds are the same as traditional forestry investment. Projects and investments must have a sound legal and regulatory base, commercial returns, effective investment structures, and strategies to address risk and uncertainty.

INTRODUCTION

Over the past decade there has been a growing consensus on the key criteria of sustainable forest management. The idea that forests provide a wide range of economic, social and environmental values locally, nationally and globally is well accepted. But there is a disjunct between the concepts of sustainable forest management and the requirements of capital investment. The problem lies in the nature of the different

goods and services of forests—in many cases prices do not reflect our perception of value.

Recently, however, there is a growing awareness that the environmental and ecological services of forests may in fact be as valuable or more valuable than those related to timber, energy or other harvested forest products. Since the Earth Summit in 1992 and through a variety of fora since, there is recognition that three of the great environmental challenges of the 21st century, climate change, loss of biodiversity and the degradation of land and water resources, all intersect in the management of forests. Why then, can the value of these services not become commercial opportunities in their own right? Why are environmental and social values still largely perceived as constraints on the timber production function? Unless we can address these issues, commercial forces will still lead to a loss and degradation of many values represented by forests.

There are today some encouraging signs in the conceptual developments related to pricing or market creation for the environmental and ecological services of forests. This paper will attempt to review these developments and examine how they could significantly shift the nature of, and motivations for, private sector investment in forests. It will draw heavily on the experiences gained in Australia, where some pioneering work in this area is occurring. It will also focus on the environmental service of carbon sequestration and storage by forests, which is currently a subject of much international attention, both by policymakers and business.

My aim is to demonstrate that private forest investment may be harnessed to conserve and enhance not only the flow of harvested products from forests, but also environmental and ecological services. This new model for forest management could be seen as analogous to investment in new hospitals, for example, where a variety of goods and services (e.g., surgery, x-ray, pharmacy, nursing, biological testing and retail or food services) are supported by a single infrastructure. In the same way a forest could be seen as natural infrastructure, providing timber and energy products, watershed services, carbon sequestration and storage, biodiversity management and recreational and spiritual values.

Such a shift would make sustainable forest management more financially rewarding than unsustainable practices. It would create diversity in financial flows and potentially reward communities who are effective stewards

of their natural resources. Ultimately it would provide a mechanism to support a global system based on linking the consumption of energy, consumer goods and food with our environmental and ecological infrastructure through a feedback loop of green credits and markets.

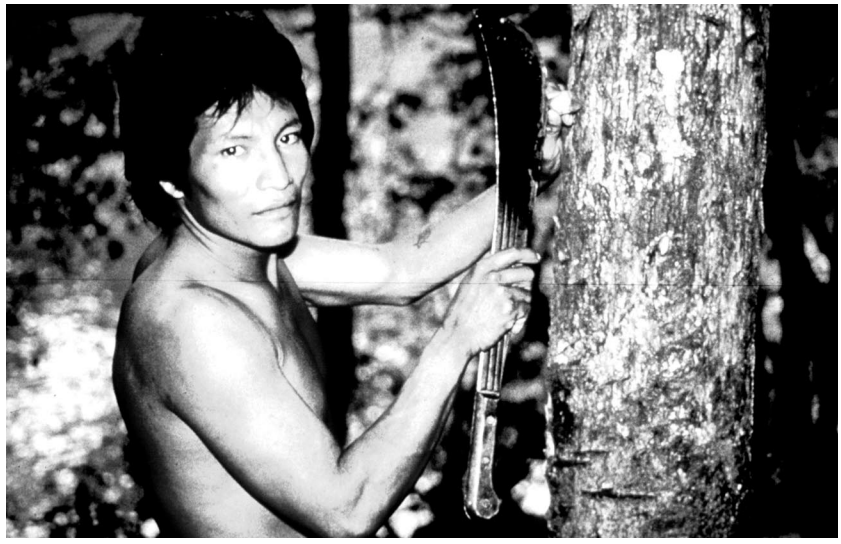
THE NATURE AND PARAMETERS OF INTERNATIONAL INVESTMENT IN FORESTS

In the past, forest investment was primarily undertaken by governments and forestry companies. The goal was to support timber markets and timber processing infrastructure. More recently there has been a growing trend for institutional investors to purchase forests from governments and forestry companies, based on a calculation of the discounted value of future cash flow from forests. This trend will increasingly decouple the management objectives of forests from those of the timber processing industry, as investors seek out new or non-traditional ways to broaden and diversify financial returns.

Investment decisions related to forests are complex. Investment management organisations increasingly act as intermediaries for pension funds, wealthy individuals or business. These investment management organisations have been called TIMO's (Timber Investment Management Organizations), reflecting the reliance of investment returns on timber revenues. TIMOs must establish a good track record of financial returns over mid-term (7 to 10 year) time frames. While TIMOs are only one class of international forestry investor, the criteria that they use to judge investments can be considered as a good benchmark of the requirements of global capital.

1. **Risk and Uncertainty vs. Return**: In a perfect world investor returns would be completely predictable and guaranteed. In such a world investors would have quite low thresholds for financial returns – likely in the order of 2-4% real rates of return (i.e. similar to US Treasury Bills). However, in the real world, and particularly in the case of forestry investment, there are a wide range of factors that can impact on any forecast of financial returns. These could include physical damage to forests or roads from fire, insects and disease, flooding or windstorms, fluctuating market conditions, shifts in the relative value of currencies, or variations in timber quantity and quality from estimates used at the time of purchase. In most cases risk factors can be estimated or quantified and risk mitigation undertaken through insurance, diversification of assets, currency hedging, timing of harvesting, independent assessments, and so on.

   Uncertainty, however, refers to factors that cannot be quantified or accurately estimated. Constantly changing regulatory regimes, areas where timber markets are lacking, areas where technical information or research on forest growth and yield are lacking, or areas with unresolved land title issues, are examples of uncertainty factors. Uncertainty is particularly acute for international investors,



where local first-hand knowledge is lacking. Investors need reliable local partners or institutions that can help address uncertainty factors. A recent innovation by the World Bank in Russia has been to underwrite political uncertainty factors for investors. This type of facility effectively reduces the hurdle rate of return for investment.

Overall, however, risk and uncertainty are major factors in all forestry investments, and escalate rapidly in countries without well-developed institutions, markets, and technology. In these environments investors require very high rates of forecast return to overcome risk and uncertainty factors. Investors also look for shorter-term, locked-in cash flows, where uncertainty can be avoided. This explains why much investment in developing countries today is short-term financing for timber harvesting, rather than longer-term investment in sustainable resource management.

2. **Investment Structures, Liquidity, and Investment Periods**: The planning process for investments must be moved from a paper analysis of risks and returns to the actual design of the investment vehicle structure. In most cases this is based on an analysis of the potential investors' requirements and the characteristics of the investment jurisdiction. Problems can arise related to double taxation, difficulty in exiting the investment, and incompatibility of investor objectives with the characteristics of the investment.

   Most institutional investors in forestry are willing to accept an investment term of a decade or more. In that period there is generally a cash flow from the forests under management and, with good management, an appreciation in the value of the forest and underlying land resources. Together these three factors

comprise the return profile of the investment. Tax structuring ensures that the investors actually gain these benefits and are not exposed to double taxation on revenue, which erodes the financial returns. International funds, which may have multiple investor jurisdictions and multiple investment jurisdictions, each with its own tax laws and regulatory framework, are particularly complicated.

Liquidity is an important element of investment in forests. Forests are a special form of real property and require careful appraisal and assessment before they can be sold. Complex regulations on foreign ownership or lengthy approvals for changes in title or business ownership are an impediment to liquidity. Liquidity requirements also affect the structure of the investment. For example, closed-end funds have a termination date where the assets are wound up and sold, with proceeds distributed to investors. Open-ended funds generally require the investor to sell shares in an entity. In a private placement investment this is much more difficult than in a publicly traded investment.

3. **Cash Flow and Time to Cash Flow**: Buying existing mature forests should allow immediate access to cash flow from timber harvesting. However, for purchase of immature forests or investments based on reforestation, the cash flow is delayed, in some cases for many years. Technically, these types of investments are similar to a discount bond, where all the returns are back loaded. This is generally less attractive to investors than investments with immediate cash flow, as the investor will perceive greater risk and more problems with intermediate liquidity.

4. **Land Acquisition**: Investors will generally look for secure ownership of resources. In short-term investments or timber-related investments this is usually via a logging concession or lease. For long-term management, however, investors will often require land ownership or legal title to the forest being managed. The process of acquiring land for investment is often complex and time consuming. Where partnerships are required with government agencies, where land titles are uncertain or unclear, or where land is under highly fragmented ownership and control, this adds difficulty to investments. Investors will prefer situations where work has been done to remove some of the complexities of land or forest acquisition, as it expedites the investment period.

5. **Reputational and Ethical Issues**: Professional investment management organisations will avoid activities that could lead to negative reaction from key interest groups. These issues are magnified in the forest sector, and there is significant reputational risk in engaging in investments that will involve the harvesting of primary forests or operating in areas where there are concerns over the rights of indigenous peoples. For this reason, most institutional investment will be oriented towards plantation forests, rather than native forests.

These are difficult issues. Investors often receive conflicting messages about what is good and what is bad. As sustainable forest management is ultimately a

human construct, investors will err on the side of caution. The emergence of certification and labelling and the increasing acceptance of transparent reporting of criteria and indicators of sustainable forest management will assist the process of helping investors differentiate among projects for investment.

These factors are not the only criteria for institutional investment, but they must be kept in mind when considering any scenario for improving private investment in forests. All money belongs to someone, and investment managers have a fiduciary responsibility to continuously seek out the best opportunities for investment. Reckless or risky investments that go bad are the surest way for investment managers to lose customers, get sued and possibly go to jail.

While the factors discussed above relate to traditional forest investment, they will be equally applicable to environmental investment. While environmental investment may sometimes be strategic (as in the case of a power company seeking carbon dioxide emissions offsets) and this may reduce the required hurdle return rate, it will not ultimately change the need for properly structured and properly managed investments that deliver projected outcomes.

SIGNIFICANCE OF THE KYOTO PROTOCOL TO THE FOREST SECTOR

Where do we start with environmental investment in forests? Climate change is a very attractive pioneering market. The world's atmosphere is continuous and a tonne of carbon dioxide is a tonne of carbon dioxide whether emitted or sequestered in Australia, the United States or Armenia. While the actions to address climate change will rely on a broad range of activities, forests can play a role in helping to achieve the goal of stabilisation of atmospheric concentrations of greenhouse gases.

The Kyoto Protocol recognised a limited net accounting of greenhouse gas emissions. In Annex 1 countries that have taken on emissions targets, Article 3.3 of the Protocol requires an accounting of carbon dioxide emissions and sequestration related to land use change via afforestation, reforestation and deforestation activities. The protocol also, under Article 3.4, may allow the Parties to include other land based sources and sinks such as existing forests, non-forest revegetation, changes in savannah burning regimes or changes in agricultural soil management. The accounting methodology for Article 3.3 activities is based on guidelines from the Intergovernmental Panel on Climate Change. These guidelines require that a carbon stock change accounting system is used and currently require that any harvesting of forest products is treated as an immediate emission back to the atmosphere.

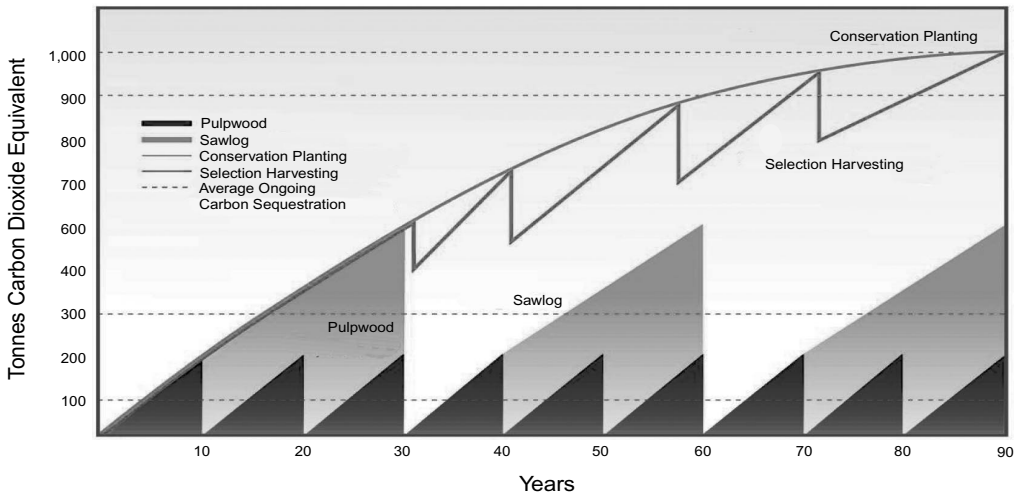
While the Kyoto Protocol specifies a limited and conservative treatment of the role of forests in accounting for net emissions, it still potentially provides new opportunities in the forest sector. Reforestation investments, as noted above, have been hampered by the delay in cash flow. Most reforestation investment by the private

sector has been short-term plantations for pulp and paper. The longer rotation, higher value species, are often beyond the time scales of traditional investors.

In Figure 1, the relationship between forest management and carbon stock management is indicated. Short rotation pulpwood forests create limited increases in carbon pools in the landscape. Shifting to longer rotation plantations for saw logs or veneer timbers can increase the carbon stock density significantly. Even more significant is a move towards new forests that will be managed under selection harvesting or conservation management regimes. From an investor perspective, the silvicultural regime that optimises the flow of benefits from the forest and creates value through asset value appreciation, will be preferred. Adding a carbon value into the forest management equation will tend to encourage land use change from marginal agriculture back to forestry and will encourage longer rotations for higher value products.

Large scale reforestation can provide significant benefits beyond those of climate change. In Australia there are estimates that over 5 million ha of reforestation are needed as part of the effort to address land degradation and dry land salinity. In the United States millions of ha of reforestation could assist with habitat restoration and watershed management in areas such as the Mississippi Delta or Hawaii.

Figure 1. Varying silviculture regimes for reforestation projects will have different characteristics for wood products, rotation periods and carbon stocks over time. Horizontal dashed lines indicate average carbon stocks for pulpwood, sawlog, and selection harvesting and conservation management regimes



POLICY DEVELOPMENTS SINCE THE ESTABLISHMENT OF THE KYOTO PROTOCOL

The Kyoto Protocol was a difficult agreement, because a restructuring of the global energy economy is perceived as potentially costly and politically difficult to implement. The Kyoto Protocol included flexibility mechanisms including the Clean Development Mechanism, Emissions Trading and Joint Implementation which would allow parties and business to seek out the lowest cost solutions to reducing net emissions. The detailed operation of these mechanisms was not worked out at the time of the Kyoto Protocol agreement, but has been undertaken during the last two years via the Buenos Aires plan of action. The two year process to finalise rules for the flexibility mechanisms, use of carbon sinks, issues of compliance measures and actions to assist developing countries with clean technologies and adaptation to climate change were designed to culminate at COP6 in November 2000.

Despite an intensive negotiation, these issues were not able to be resolved by ministers. A deal on the implementation of the Kyoto Protocol is generally seen as needing a comprehensive agreement on outstanding issues. Key 'crunch issues' such as the use of Article 3.4 sinks in Kyoto Protocol commitments and the degree to which international flexibility mechanisms could be used towards meeting targets were narrowed but not finally agreed.

The issue of carbon sinks was controversial at COP6. Many countries felt that while Article 3.3 was agreed at Kyoto, the use of a broader range of forest and agricultural sinks in the first commitment period was a strategy to weaken commitments made at Kyoto. Other countries felt that maximum flexibility and a minimum economic impact would be critical to success in this complex global enterprise. In the end the COP6 meeting was suspended with a likely resumption of the negotiation in May or June 2001.

Ultimately at COP6 it appeared that little disagreement remained over Article 3.3 provisions for reforestation accounting. However, the issue of additional sinks under Article 3.4 was not concluded and the issue of whether and how sinks would be included under the CDM was also unresolved. In his final paper designed to attempt to bridge differences among parties, Minister Jan Pronk of the Netherlands had suggested that reforestation projects in developing countries be included under the CDM, but that avoided emissions projects, related to certified reductions in deforestation, be considered for funding under a climate change adaptation fund.

In the meantime, many national and even sub-national governments are forging ahead with legislation and regulations to begin the process of reducing net greenhouse gas emissions. Australia, for example, has introduced a requirement to increase renewable energy generation from 10 to 12% of electricity production. In the State of New South Wales, Australia, there is a requirement for electricity retailers to reduce the per capita emissions of greenhouse gases by 5% and the law now allows the use of carbon sinks to meet these targets.

Emissions trading pilots and even national trading systems are being designed and implemented in Canada, the United Kingdom, the United States and various countries in continental Europe. Climate change is seen as a trend in the public policy and business environment and there is now a proliferation of government programs and business activities related to positioning on this issue. Many now feel that even if the Kyoto Protocol is never ratified in it's present form, there are significant movements in business and governments to drive forward action on climate change.

Yet, without an international framework on the mechanisms and accounting procedures and the use of sinks, there is likely to be a complex set of incompatible trading regimes and government incentives and programs. The cost of addressing climate change will increase and there is the potential for countries or businesses to be free riders, standing on the sidelines while others incur the costs of addressing net

emissions reductions. From an industry perspective the priority is to get an agreement that is realistic in its targets, clear in its rules for the operation of flexibility mechanisms, and allowing the free market to operate to reduce the ultimate cost of compliance. From the perspective of those working to develop low emission or zero emission technologies, or projects based on carbon sequestration, an ability to gain a carbon credit or additional cashflow is often critical to achieving financial returns that are comparable to existing business-as-usual activities.

POTENTIAL OPPORTUNITIES IN THE USE OF CARBON OFFSET INVESTMENTS TO FUND SUSTAINABLE FOREST MANAGEMENT

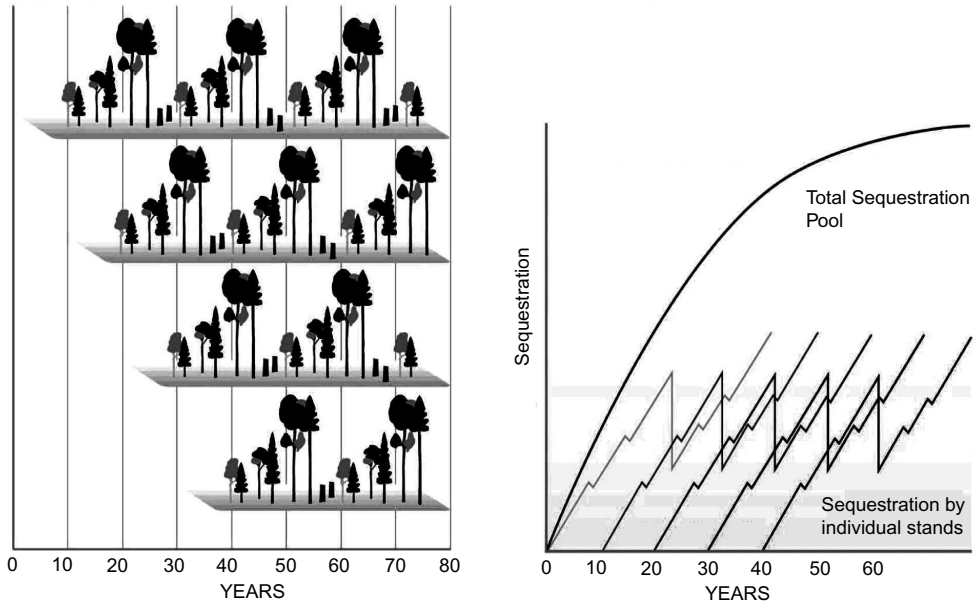
The uncertainty over key issues related to carbon sequestration under the Clean Development Mechanism means that carbon offset projects in developing countries are not yet agreed. From a practical point of view, the current situation is actually negative for developing countries, as investments in reforestation in Annex I countries are now seen to potentially include an additional benefit from carbon credits, further stimulating reforestation investments in developed countries at the expense of developing countries.

If carbon sequestration through reforestation programs is ultimately included in the CDM, this will likely encourage additional reforestation investments in developing countries. This can take some of the pressure off the harvesting of natural forests, create new employment and help address critical issues of watershed management and potentially, biodiversity conservation and enhancement.

The expectation is that there will eventually be a single global carbon price. In areas where land and labour costs are lower, the return from carbon sequestration is proportionately higher. As the characteristic of a carbon credit is such that it requires no transport or processing facilities, it can be produced as easily in Africa as in the United States. However, even if forestry is included in the CDM, risk factors remain for investors related to the efficiency of the approval processes, the legal status of carbon rights in developing countries and the potential tax consequences or benefit sharing requirements that may be put in place.

A carbon credit market should raise the value of managing or maintaining forests relative to marginal agriculture practices. This should assist with land reclamation in cases where inappropriate past clearing or unsustainable agriculture systems have been established. A carbon offset value for forests can also allow the establishment of management systems that will be sustainable for both timber and carbon credits (Figure 2). Even with timber harvesting treated as an immediate emission to the atmosphere, reforestation accounting across age classes and growth stages will lead to a stable carbon pool with a continuous flow of timber or energy products. The carbon value should in fact contribute to retaining forests over time, as clearing Kyoto forests after they have been rewarded with a carbon credit would require buying credits back out of the open market.

Figure 2. Establishing a series of reforestation projects over time can lead to systems that are sustainable in both timber harvest rates and carbon stock levels.



ISSUES RELATED TO CARBON OFFSET INVESTMENTS IN FORESTS

There are two groups of issues related to Forestry Carbon Offset projects. The first relates to the credibility of the projects and their contribution to sustainable development. The second relates to the technical challenge of integrating a second revenue or value stream into the forest management system. This will add complexity to planning and inventory control processes.

For carbon-related reforestation projects, the Hancock Natural Resource Group has worked with a range of groups to define a set of principles that should underpin all projects. The seven principles are as follows:

- Projects should be compatible with a conservative understanding of the Kyoto Protocol.
- All carbon sequestration projects should be based on the principles of sustainable development.
- All carbon sequestration projects should include consultation with stakeholder groups and transparency in performance measures.
- All carbon sequestration projects should be designed to contribute positively to rural communities, including Aboriginal communities.
- There should be transparency in carbon stock accounting, including independent third party verification.

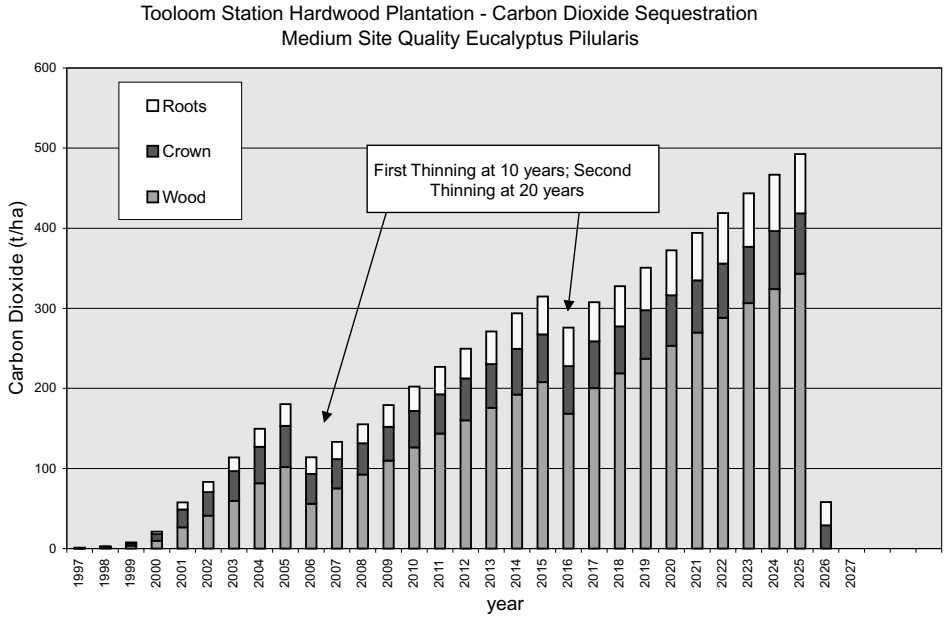
- A comprehensive accounting of both sequestration and any harvest of carbon stocks should be undertaken.
- No native forests should be cleared for these new planted forests. They should be established on previously marginal agricultural land.

The primary concern expressed to date regarding reforestation projects for carbon offsets is that they will lead to large scale exotic monoculture plantations being established, in many cases by buying out currently productive agricultural lands or clearing existing native forests. In addition, there are concerns that proper standards for carbon accounting do not exist and that proper risk management procedures for wildfire or other physical impact on forests may be overlooked. The principles laid out above attempt to address these concerns, by ensuring that projects are well-designed and use open and transparent planning and assessment processes.

From a technical perspective the ability to measure and forecast carbon stocks in forests is required. Tools are now available to convert traditional forest inventory systems into carbon stock assessment and stock change projection (Figure 3).

Effective forest managers will be able to link together the forecasting of carbon stocks and timber revenue to provide an overall picture of cash flow, internal rates of return and asset values over time. These calculations for individual stands will need to

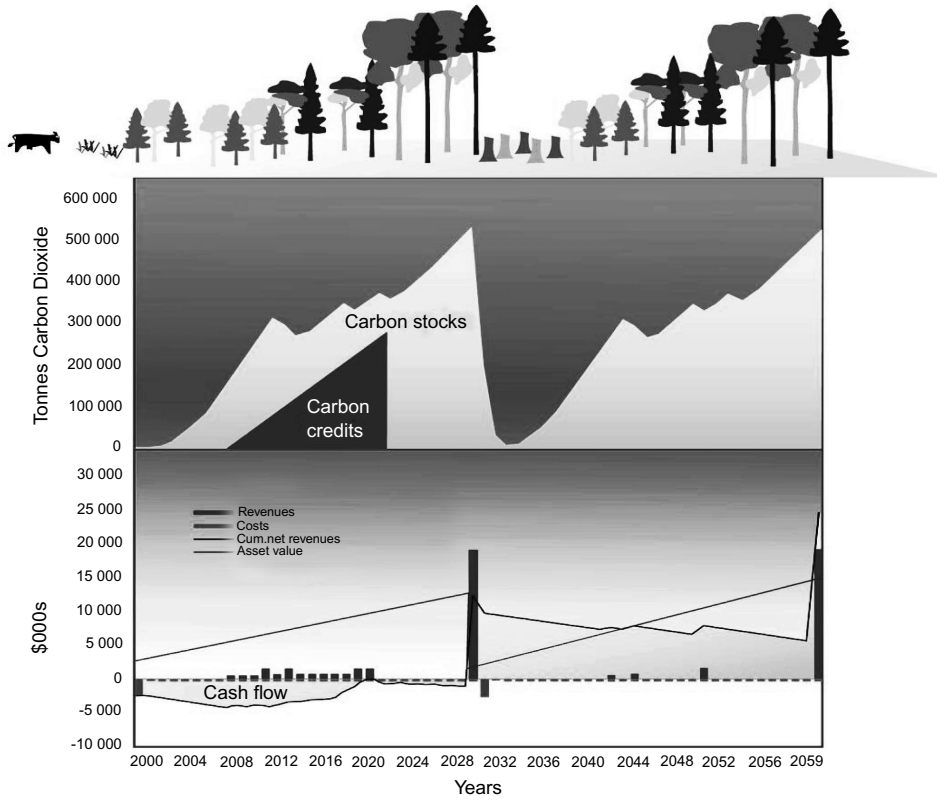
Figure 3. Inventory Projection Systems are needed to estimate carbon stocks and the pattern of carbon stock change over time



be integrated into overall carbon pools to achieve a forest management system that can optimise financial returns over time (Figure 4). For example in periods of high carbon prices and low timber prices, timber harvesting can be deferred and additional carbon benefits extracted. In periods where carbon prices are low and timber prices high, it would make commercial sense to increase harvesting, even where some carbon credits would need to be bought back out of the marketplace. Thus, management planning can be used to optimise the return to investors.

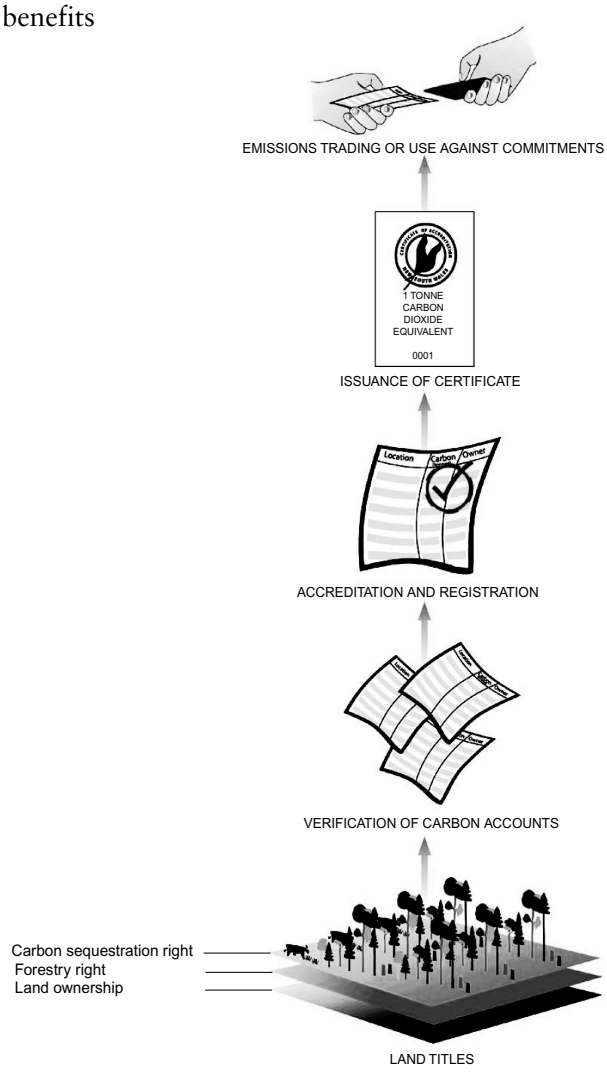
There are also legal issues in creating a system to separate out the ownership of carbon from the ownership of the trees and land. Carbon sequestration is not a commodity, as it is not physically exchanged. Neither is it a service in legal terms as the benefit rather than the service of the sequestration is what is being exchanged. From a legal perspective the carbon right in forests is considered a 'chose in action'. It is most similar to selling the unique copyright to a book. Establishing legal title to this right also creates some legislative requirements. For example in New South Wales,

Figure 4. Effective management of carbon sequestration projects will require the ability to integrate growth forecasting and financial models for timber and carbon markets



Australia, where carbon rights legislation was passed in late 1998, the carbon right is a species of forestry right. The forest right is a *profit a prendre* right in land, meaning that it confers the right to enter land, establish and tend trees and ultimately harvest those trees. However, it does not comprise a fee-simple interest. The carbon right conveys the exclusive right to use the carbon sequestration benefits associated with the trees on that land. In this case, there could be three separate owners, one of the land, one of the forestry right to the trees on that land, and a third to the carbon forestry right (Figure 5).

Figure 5. Carbon sequestration rights can be the basis for establishing legal title to carbon benefits



The carbon stocks must ultimately be registered in order to be linked to Kyoto flexibility mechanisms or traded in a market. National government registries are required under the Kyoto Protocol as a way of ensuring that each carbon credit, assigned amount unit or certified emission reduction is uniquely identified. These registries will need to interface with private sector accounting systems to allow continual rectification of carbon stocks with credits traded or extinguished in a trading regime or commitment period. In the case of carbon sequestration, the credits will likely be vintaged based on the year of sequestration and then serialised to give each a unique registration number. Certificates could be issued with these serial numbers. The process and mechanisms may vary depending on whether the credits are privately traded, or transferred via the Clean Development Mechanism, Joint Implementation or International Emissions Trading.

The current uncertainty over final Kyoto Protocol rules and the lack of a market value for carbon credits make it relatively difficult for investment managers. This means that early investment in forests for carbon offsets by institutions will look for sound underlying financial fundamentals in the forests being managed, and the potential for future carbon revenue as 'up-side'. For business investors, while sound timber fundamentals are also necessary, there is a greater focus on the pedigree of the carbon management as the investment will be primarily seen as a hedge against a future price of carbon dioxide emissions.

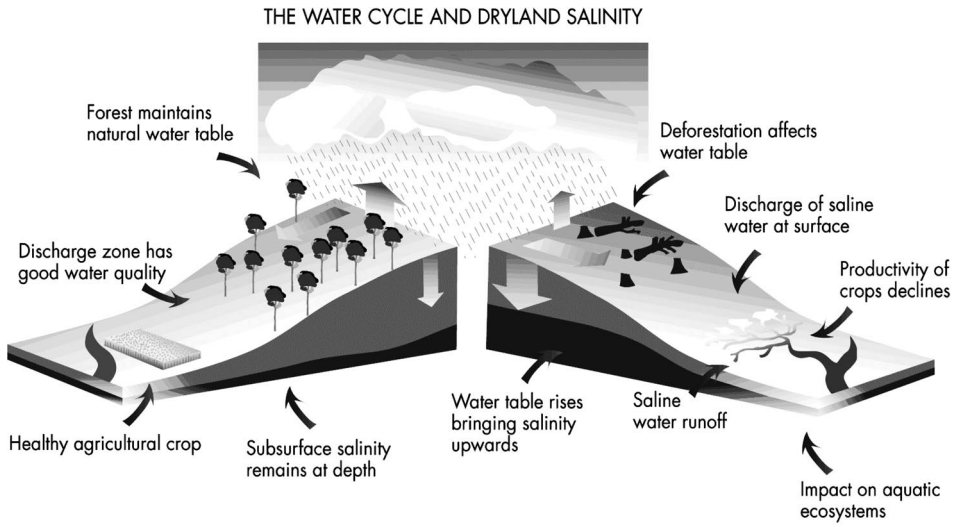
In summary, the successful establishment of carbon related reforestation projects have some additional complexities over traditional timber plantations. However, the financial returns and greater diversity of markets can make these investments attractive to certain classes of investors.

OTHER ENVIRONMENTAL MARKETS FOR FORESTS

The technical and legal work which has occurred in supporting the development of carbon sequestration credit trading is also beginning to bear fruit in the proposals to create analogous environmental service markets for existing forests and reforestation projects. Governments, often faced with huge costs for reforestation in catchments or creation of protected areas, are seeing whether market based solutions may have a role to play. There is a growing movement towards examining the possibility to create a new form of forestry investment based on natural infrastructure. This infrastructure could potentially not only provide timber and energy products, but also be oriented to addressing the three major challenges of climate change, land and water resource degradation and the conservation of biodiversity.

A pioneering effort in addressing land degradation is occurring in Australia. Past clearing of land for grazing and annual crops has led to a substantial reduction in transpiration from the land. This in turn has led to a rising water table, bringing salts from deep in the soil profile to the surface (Figure 6). These salts not only degrade land directly, but also wash into river systems. The current forecast is that a high

Figure 6. Dryland Salinity is a major challenge to inland Australia and will require substantial reforestation as part of the solution.



proportion of rivers in the Murray Darling Basin will exceed WHO drinking water standards by 2020 unless action is taken to re-establish deep rooted perennial vegetation in key areas, or to undertake costly large scale engineering or desalinisation works. Not only will this salt affect drinking water, it will also impact on buildings, irrigation effectiveness and downstream ecosystems.

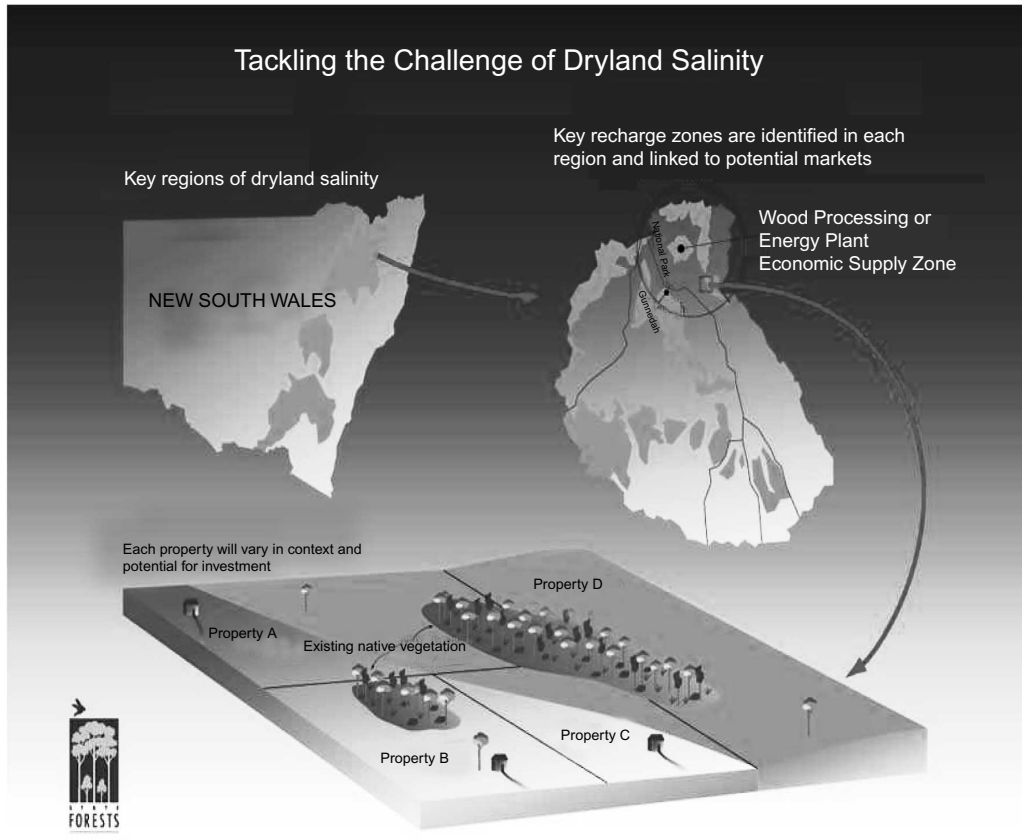
Some experts estimate that 5 million ha of land must be reforested in areas where commercial timber production is commercially unviable. The billions or even tens of billions of dollars needed for this work are beyond the scope of traditional government funding programs. But could the government encourage private capital to move into this area by establishing a salinity credit trading scheme? Already, in a pilot trade undertaken in 2000, a downstream irrigation cooperative has contracted to pay a fee of AU$17.00 per ml of additional verified transpiration by forests established by a forestry agency.

Unfortunately the poor rainfall conditions and slow growth of forests in these areas mean that the salinity or transpiration credit payment would likely need to create up to half of the revenue for these projects. But over time, if there was annual auctioning of the credits and bids by service providers, the cost would be expected to decline. From the point of view of government, such a system has significant benefits. First the market finds the lowest marginal cost needed to encourage the behaviour needed to meet the environmental outcome. Second, there is accountability for performance and the government contract is for the actual environmental service, rather than

traditional programs that simply contract for the planting of trees. In these areas many past tree planting programs have occurred and hundreds of millions of dollars have been spent, but with little to show for the investment.

Currently there are significant effort to design a large scale investment vehicle that could capture both carbon sequestration benefits, salinity credit benefits and non-traditional forest product markets such as biomass energy and activated charcoal. This type of packaging of investment can allow regional strategies that provide both economic diversification and environmental benefits (Figure 7).

Figure 7. Regional planning can be used to address both the repair of degraded land and the establishment of new industries (source State Forests of NSW)



The third and most conceptually difficult environmental market would relate to conservation or enhancement of biodiversity. Recent innovations in this area have included:

- The pioneering efforts of Costa Rica to recognise conservation of biodiversity through payments to landowners who conserve or re-establish forests;
- A Conservation Concession negotiated by Conservation International (CI) with the Government of Guyana. In this case the concession is based on CI paying a royalty or concession fee for the conservation of the area that would equal or exceed the fees paid by a timber concessionaire;
- A biodiversity fund established by the World Bank, the GEF and Conservation International aims to invest in conserving key international areas of threatened habitat;
- A joint purchase of lands in the Chesapeake Valley by Hancock Natural Resources Group and the Conservation Fund which protected key habitat areas under conservation easements;
- A purchase by the Nature Conservancy (TNC) of land from International Paper in the US North East will protect key habitats while allowing some continued environmentally sensitive timber harvesting. This agreement puts the stewardship under the control of the conservation interest, but allows some continued economic activity to support local jobs;
- A publicly traded company on the Australian Stock Exchange—Earth Sanctuaries, which has as audited capital stock a range of rare and endangered animals held in fenced, feral animal free Sanctuaries.

These examples indicate a flurry of innovation in this area. Another approach that would be attractive to financial investors would be some form of biodiversity crediting scheme that would reward conservation or enhancement of biodiversity.

Biodiversity is about both quantity and quality. Key factors include the naturalness of the community, vegetation structure, connectivity in the landscape, and functionality or health of the forest relative to the presence or abundance of feral animals or weed species. There is a need to define a method of simply calculating some unit of biodiversity that will work across a wide range of conditions and could form the basis of a tradable unit. The value of this credit would have to be determined by the market, but would hopefully lead to sufficient revenue to protect primary forest and to encourage reforestation with local species in critical areas. The biodiversity credit should be additional to and complementary to the carbon sequestration credit and salinity control credit. The goals of such a unit would be:

- To establish the value of biodiversity such that it would influence the way development is designed – i.e., the greater the biodiversity impact, the more incentive not to develop or to develop elsewhere;
- To create an outcomes-based source of revenue for conservation efforts;
- To encourage private landowners to protect their forests and maintain them in a healthy state;

- To encourage greater use of local species and better management of riparian zones in reforestation programs;
- To facilitate direct investment in conservation and to encourage the use of biodiversity conservation credits in product marketing or branding.

A preliminary proposal would be as follows:

B = Bios, the unit being transacted, would be annual units of biodiversityconservation value
A = Area, in hectares
E = Ecosystem value, being scored as follows:
- exotic species – 0
- plantations of native species (for any points to be scored the system would require a minimum of 50% of locally native species, including the understorey vegetation) – 1
- mixtures of natural species planted or of common native forest types conserved – 3
- unique, rare or endangered ecosystem types either re-established or protected (initially this would only be accredited primary or rainforest types)– 10

L = Locational modifier, scored as follows:
- isolated forest without connectivity- 0.5
- forest connected to existing functional habitat- 1.0
- forest creating or maintaining key connectivity between areas of critical habitat- 1.5

S = Species population additions
Two step calculation as follows:
1. Estimate habitat supply or likely population increases for rare, threatened or endangered species of plants or animals
2. Multiply numbers times 1 for rare, 3 for threatened and 10 for endangered species. For plant species, only count a group, but for animals count each animal

The equation for calculation would then be:

$B = A \times (E \times L) + S$

Which can be defined as 'quantity of habitat times quality of habitat plus occupancy of habitat. This should be understandable to investors. This would create a very high value for a piece of intact rainforest in Gabon and a value of zero for an exotic pine monoculture. There would be a complete range of values in between.

A lot of work would still need to be done on the definitions and models needed to confirm these calculations, but the certification would be done based on the independent assessment of the veracity of the models and the field level confirmation of predictions over time. The unit is based on an ability to sell annual rights or to contract over the longer term. The units could therefore be sold as futures or as current rights to biodiversity. The owner of the ecosystem would be able to sell as many years of conservation as desired, but would need to register a conservation right over the property and maintain a biodiversity credits pool that would always have to exceed the number of credits in the market. It would be subjected to periodic audit. Forest managers would also have an incentive to intensify wildlife habitat surveys as a way of confirming occupancy and increasing confirmed biodiversity ratings.

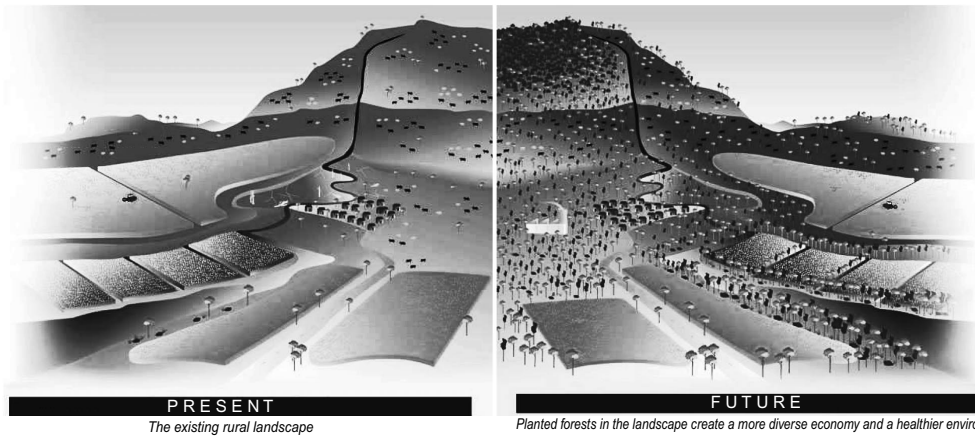
The trading could also be subjected to limits based on uncertainty, and managers would have an incentive to control feral animals or weeds, re-establish riparian zones and emphasise the management and protection of primary or old growth forests to improve the species 'occupancy' elements of the equation.

Of course these markets do not yet exist and it will take time and effort to convince innovators that buying these environmental and ecological services is an effective way to meet regulatory requirements or differentiate products in the market place. But if successful, these markets will allow investments to be developed that not only reverses the tide of environmental impact, but diversifies and strengthens rural economies (Figure 8).

The benefits of establishing markets and financial mechanisms for the environmental services of forests are clear, but these investments must also meet the criteria outlined earlier to succeed. The revenues and pattern of cash flow are important to investors, as are the risks related to managing or establishing the forests. Some investors may be willing to pioneer these new natural infrastructure investments for strategic reasons, but in most cases there is a need to lock in the buyers of the services in the same way that timber supply contracts are negotiated.

There is hope, however, that these types of private investments will begin to evolve. The Hancock Natural Resource Group has announced the establishment of the Hancock New Forests Program to pioneer environmental investment in carbon sequestration and other services. The recent fund announced by the World Bank, the GEF and Conservation International is an example of how conservation organisations could start to move towards investment programs. We may in future see an increasing convergence of forestry investment and conservation investment in these new types of packages (Figure 9).

Figure 8. Environmental Investment can protect high value agriculture, address key environmental issues and diversify local economies



The existing rural landscape

Planted forests in the landscape create a more diverse economy and a healthier environment

LAND USE

OUTPUT	AREA (ha)	REVENUE (000's)
Sheep	250 000	25 000
Cattle	200 000	40 000
Wheat	250 000	118 000
Canola	150 000	112 000
Conon	150 000	490 000
TOTAL	1 000 000	785 000

ENVIRONMENTAL PROBLEMS

- Dryland salinity increasing
- Rising water tables and saline discharge
- Nutrients teaching info waterways
- Low biodiversity
- Soil erosion and turbid waterways

LAND USE

OUTPUT	AREA (ha)	REVENUE (000's)
Sheep	150 000	18 000
Cattle	120 000	28 000
Wheat	200 000	94 000
Canola	120 000	90 000
Catton	150 000	490 000
Timber	26 000	12 000
Bioenergy	117 000	9 000
Charcoal	117 000	14 000
Carbon credits		41 000
Salinity credits		26 000
TOTAL	1,000,000	822 000

ENVIRONMENTAL BENEFITS

- Dryland salinity reduced
- Lower water tables and clean discharge
- Nutrients retained on farm
- Biodiversity increase
- Soil erosion reduced

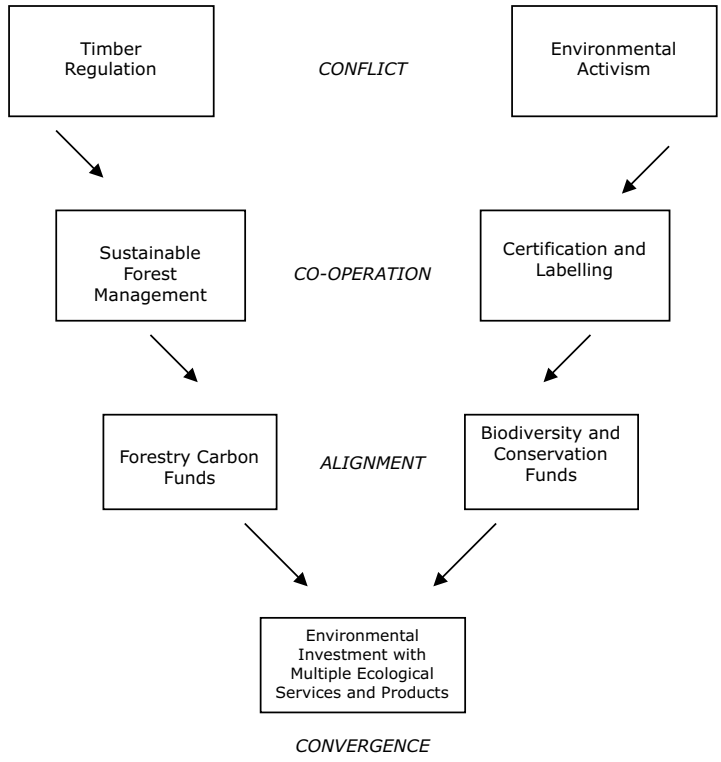
ACTIONS NEEDED AND RECOMMENDATIONS

The establishment of a new form of forest investment encompassing wood, energy, carbon sequestration, land and water conservation and biodiversity as outputs will be a long term and complex undertaking. A step-by-step approach will be required, including pilot projects, the support of business, governmental and intergovernmental organisations, non-governmental organisations and local communities. National governments will need to assess the legislative and regulatory requirements that will facilitate such activities. Standardised approaches to environmental accounting will also be needed to underpin the evolution of markets.

Private investment in environmental and ecological services will be a slow and evolutionary process and will not provide a short-term solution to the financing of sustainable forest management. However, it can complement other approaches, and in some cases, add value to traditional forestry investment.

The flexibility mechanisms and limited use of carbon sinks from forests under the Kyoto Protocol are a first recognition of how market based mechanisms can assist with addressing global environmental issues in an economically efficient manner. More work is clearly needed to reach a consensus on whether forestry should be included

Figure 9. A convergence between timber production and conservation investment may create natural infrastructure funds that have diverse products and services linked to a range of new markets



under the Clean Development Mechanism, but pilot projects underway are providing useful information to policymakers.

The United Nations Forum on Forests could serve an important role is examining the synergies that could occur in the forest sector in addressing the cross-cutting opportunities related to climate change mitigation and adaptation, biodiversity conservation and enhancement, and the reversal of land and water resource degradation and desertification. Forests are one of the great engine rooms of our planet. Managers who are able to maintain and enhance the environmental and ecological services of forests should be rewarded commercially. The challenge is to see whether forest management can evolve from a sector focused on wood production, with environmental impacts as a by-product, to an environmental services sector, with timber and energy as by-products.

Key recommendations from this review of the emerging area of environmental markets include:

- Governments need to act to create property rights in environmental goods and services of forests, and to permit and encourage the establishment of regulatory instruments and markets to trade them;
- The design of environmental property rights and environmental markets should be based on consultation with community groups, NGOs and business;
- In particular, because of the current negotiations on climate change, Governments should examine the potential benefits and risks associated with establishing carbon rights to various kinds of forests, incorporating these carbon rights into emissions trading regimes and Kyoto Protocol flexibility mechanisms, and facilitating international investment into these forests;
- The UNFF should examine the potential linkages of environmental markets for forests with the Conventions on Climate Change, Biodiversity and Desertification and assess the potential of these mechanisms to facilitate further international investment in sustainable forest management.

ACKNOWLEDGEMENTS

I would like to thank state forests of NSW for the use of figures appearing in this paper and Dr. Clark Binkley for helpful comments on the initial draft of the paper.

REFERENCE WEBSITES

www.hancocktimber.com is the web site for the Hancock Natural Resource Group and includes information on the Hancock New Forests Fund

www.unfccc.com is the web site of the Framework Convention on Climate Change and can provide access to the text of the Kyoto Protocol and results from COP6

www.conservation.org is the web site of Conservation International and includes documents related their financial innovations in conservation

www.tnc.org is the web site of The Nature Conservancy and includes a press release on their purchase of land from International Paper

www.forest-trends.org is the web site of Forest Trends, an organisation that has sponsored a series of workshops on the Role of Forests in the Green Economy

www.forest.nsw.gov.au is the web site of State Forests of NSW, who have been pioneering many of the mechanisms for carbon credit trading and salinity credit trading

www.dlwc.nsw.gov.au is the web site of the New South Wales Department of Land and Water Conservation and includes recent discussion papers on dryland salinity and how salinity or vegetation credit schemes may work.

www.mdbc.gov.au is the web site of the Murray Darling Basin Commission who have undertaken a salinity audit of the Murray Darling Basin and have undertaken work to establish a salinity credit scheme for revegetation

www.greenhouse.gov.au is the web site of the Australian Greenhouse Office and includes significant technical material on carbon trading, carbon sinks and land-based carbon accounting.

www.worldbank.org is the web site of the World Bank and includes information on the Prototype Carbon Fund, and the Conservation Investment Fund being developed with Conservation International and the Global Environment Facility.

Chapter 8

Investing in the Future: The Private Sector and Sustainable Forest Management

A case study of progress towards sustainable forest management in the South African plantation forest industry

Mike Goldblatt

Executive Summary

A case study of the South African plantation forestry sector is presented. Plantation forests make up a large majority of the country's forested area in South Africa and the country's experience provides useful insights into ways in which private sector investment in commercial plantations can contribute to sustainable forest management (SFM).

The main mechanisms through which the private sector has steered investment towards SFM in the country have been through plantation certification and the promotion of out-grower schemes. Certification has been widely adopted in the country (the country has the world's largest area of certified plantations) and has been a major tool in meeting SFM objectives in the sector. The forestry industry has historically been controlled by a small number of large corporations. The extension of participation to small growers through out-grower schemes has been a largely successful attempt to broaden the social base of the industry; to allow future investment in the industry to benefit small growers; and to contribute more directly to rural economic development. Certain limitations of both certification and out-grower schemes are also presented in the paper, for example although the costs of certification are not a barrier to the large firms they may present a significant financial barrier to small firms and emerging small growers. It is clear, therefore, that alone these two mechanisms are not sufficient to develop a truly sustainable forestry sector. The role of the state in regulating the

industry is crucial in developing the context for investment in SFM. The current privatisation of state forests is the largest single area of current investment in the forestry sector and will allow the government to place more emphasis and resources on its needed regulatory role. The privatisation process also imposes certain SFM requirements on the firms acquiring the leases on former state forests and has led to a number of areas of plantation forestry being returned to more appropriate land-uses.

Other avenues for private sector investment in SFM appear to be limited. There are some possible avenues in non-consumptive forest uses, such as tourism and recreation, but these are insignificant at present.

INTRODUCTION

The Intergovernmental Forum on Forests (IFF) proposal for action calls upon countries and relevant organisations to encourage private investments in sustainable forest management. The question of how to attract private investment towards sustainable forestry activities is one of the main agenda items for a workshop being organised by the United Nations Forum on Forests in Oslo in January 2001. This background paper provides a perspective from South Africa on the role of the private sector in sustainable forest management (SFM).

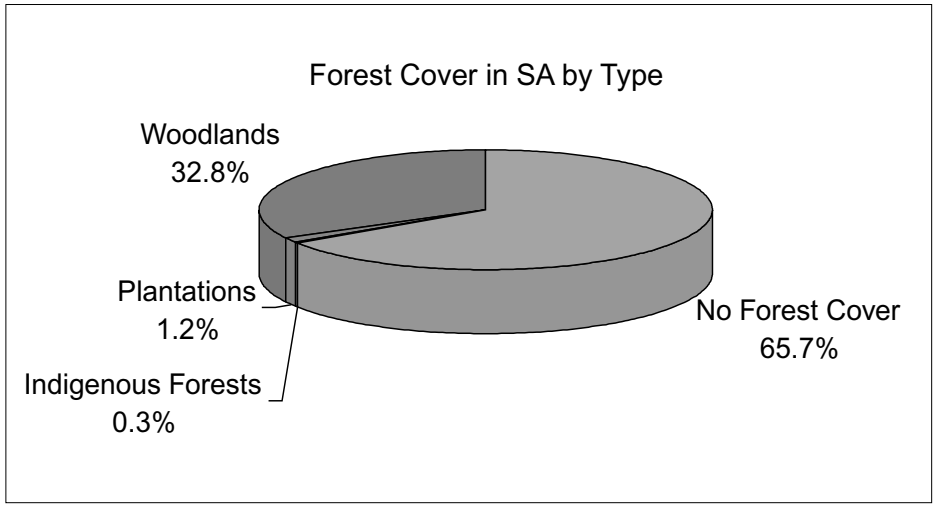
South Africa provides a useful case study, not because the country encompasses a wide variety of forestry activities nor because the country has major tropical forests under threat of overexploitation, but rather because of the dominance of private sector *plantation* forestry in the country. The significant advances in plantation certification and other trends towards SFM in these commercial plantations provides useful insights for similar forest industries elsewhere. Important issues, aside from the widespread adoption of forest certification, include the role of social issues in sustainable forest

management; the relative position of small and large scale commercial operations; and the roles and responsibility of government in SFM – these are all raised in the South African situation.

This paper begins with a brief description of the forestry sector in South Africa and considers the meaning of SFM in South Africa. It then looks at some of the major private sector initiatives in SFM and the reasons behind these initiatives. Possible obstacles to SFM are discussed as well as possible additional incentives that could be provided to the private sector to improve the sustainability of forest management. Views from the private sector are also provided on these issues. The conclusion draws out the main features of the experience from South Africa and some possible lessons for other countries.

THE FOREST SECTOR IN SOUTH AFRICA

South Africa is a relatively arid country and has always had limited areas of closed canopy indigenous forests. The largest 'forest' type in the country is woodland areas, which are generally managed as part of nature reserves or form part of communal land holdings, and total an estimated 40 million ha (although the precise area covered is unknown). While woodlands are very important to rural communities for construction and fuel wood and for a range of medicinal, food and other products, they are not managed as forest resources i.e. they do not fall under forestry legislation and are generally not actively protected by the government (DWAF 1998). Areas falling under forestry legislation and control are made up of a small area of indigenous forests of about 330 000 ha and plantations which cover 1 520 000 ha (Edwards 2000b). The relative proportions of these areas are shown in the figure below.



Ownership arrangements

Plantation ownership is dominated by three major companies (the percentage of total plantations managed is shown in brackets), Sappi (17.1%), Mondi (25.9%), and Safcol (17.2%). Safcol was formed in 1992 from the state's significant forestry holdings and is a wholly state owned company. Safcol is in the process of being privatised and this process and its implications for SFM are discussed further below. The government also holds another 12.5% of the country's plantations under the direct management of the Department of Water Affairs and Forestry (DWAF). These plantations were previously owned by the so-called 'homeland' governments established under apartheid. Small private growers own the second largest block of plantations (24.3%) and other medium sized entities own the remaining 3% (Edwards 2000b).

Socio-economic significance of forestry in South Africa

Commercial forestry in South Africa is completely plantation-based. The country has 1 520 000 ha of plantations comprising 1.2% of the world's plantations, and production from these plantations has been growing fairly steadily since 1980. In the 20 years from 1980-2000 roundwood production increased from about 12 million m^3 to almost 19 million m^3, a growth of about 57%. This production growth has been underpinned by a growth in afforested area of over 30% over the same period. The forest and forest products sector is an important contributor to agricultural and

manufacturing GDP. In 1998 forestry output was R2.1 billion[1] or 8.5% of agricultural GDP (which in turn is 4.5% of total GDP) and forest products contributed R9.1 billion or 7% of manufacturing GDP (if paper is included the total is approximately R14 billion). Forest products made up 4% of the country's exports in 1999. The forestry sector is also an important employer, directly employing 74 000 people (almost 1% of the total working population), most of them from rural areas where unemployment is particularly acute.

In addition to the direct financial benefits of forestry rural people use natural forests and especially woodlands, outside of formal markets, for many purposes. These include: timber for housing and fencing; fruit as an important dietary supplement, and sap for the brewing of beer and wine; bark for making ropes and weaving; medicinal products from bark, bulbs, leaves and roots; honey production; the harvesting of insects, mushrooms and other edible plants; and wood for local craft industries. These non-market values of forest products to communities often equates to a significant proportion of the income of rural households (DWAF 1998).

The sustainability of the sector is therefore important to the economy. This depends on the sector remaining internationally competitive and productive, environmentally sustainable, and socially acceptable as a rural land use.

LEGAL FRAMEWORK OF SUSTAINABLE FOREST MANAGEMENT

Historically the main objective of government regulation of forestry has been on controlling the extent and location of afforestation based on environmental (primarily stream-flow reduction) criteria. The democratisation of the country in 1994 and attendant shifts in the government's policies have led to a broader understanding of sustainability to encompass environmental, social, cultural and distributive goals. The National Forests Act, promulgated in 1998, establishes a set of principles for SFM in South Africa (RSA 1998). These principles underpin the Act and are that:

- natural forests must not be destroyed save in exceptional circumstances where, in the opinion of the Minister, a proposed new land use is preferable in terms of its economic, social or environmental benefits;

- a minimum area of each woodland type should be conserved; and

- forests must be developed and managed so as to:

  - conserve biological diversity, ecosystems and habitats.

  - sustain the potential yield of their economic, social and environmental benefits;

- promote the fair distribution of their economic, social, health and environmental benefits.
- promote their health and vitality.
- conserve natural resources, especially soil and water.
- conserve heritage resources and promote aesthetic, cultural and spiritual values; and
- advance persons or categories of persons disadvantaged by unfair discrimination.

Having established a set of principles, the Act goes on to define a system of SFM. This includes the introduction, over a period of time, of a set of criteria, indicators and standards of sustainable forest management which will eventually apply to all operators. These standards will be debated and negotiated with a wide variety of stakeholders and will be introduced gradually. The Act also establishes a National Forests Advisory Council which has a sub-committee on SFM. A key task of this committee is to develop these criteria, indicators and standards. The committee has yet to reach agreement on these issues (Bethlehem personal communication).

From management to regulation

Underpinning the recent changes in the legislation governing forestry is a government philosophy that is starting to move away from the prior concentration of the state on the *management* of commercial plantation forests which supply timber to industry. The government has recognised that there is no longer good reason to spend resources in this area since this is a commercial function that can generally be fulfilled by the private sector. The government should therefore seek to lease the plantations to private companies on a long term basis and play a *regulatory* role in relation to these and other forests rather than a management role. If the management of the plantation forests can be placed in private hands then state resources can be directed to forestry regulation and to the management of the country's remaining indigenous forests. These latter two areas, regulation and

indigenous forest management, are seen as the core public sector functions in the long term (Bethlehem 2000).

This represents new thinking about the role of the state in forestry and has led to the major initiatives in the fields of restructuring of the commercial plantations, forest legislation and indigenous forests management.

The movement of the private sector towards SFM dovetails with government policy to a significant extent. The primary mechanism used by the private sector to establish systems of sustainable management for its plantations has been the use of third party certification. The increasing establishment of partnerships with small and community-based growers has also been spurred by the need for greater participation in the industry by previously excluded black farmers and rural communities, as well as for sound commercial reasons. These roles of the private sector in investment in SFM is discussed below.

CERTIFICATION – A MARKET BASED INSTRUMENT FOR SFM

Investment in plantation certification by private sector forestry companies in South Africa is the primary source of investment by the industry in sustainable forest management. South Africa is a world leader in the Forestry Stewardship Council (FSC) certification programme[2]. As of May 2000 the country had 780 000 ha of forests certified by the FSC, this placed it fourth after Sweden, Poland, the USA and the UK in terms of total forest area certified (Edwards personal communication). With respect to *plantation* forestry, South Africa has the largest area of certified plantations of any country. The country's proportion of FSC certified plantations relative to other countries is shown in the figure below (Edwards 2000 personal communication). It must be recognised that in *absolute* terms the area certified is small compared to the natural forest holdings in the world's major forested countries.

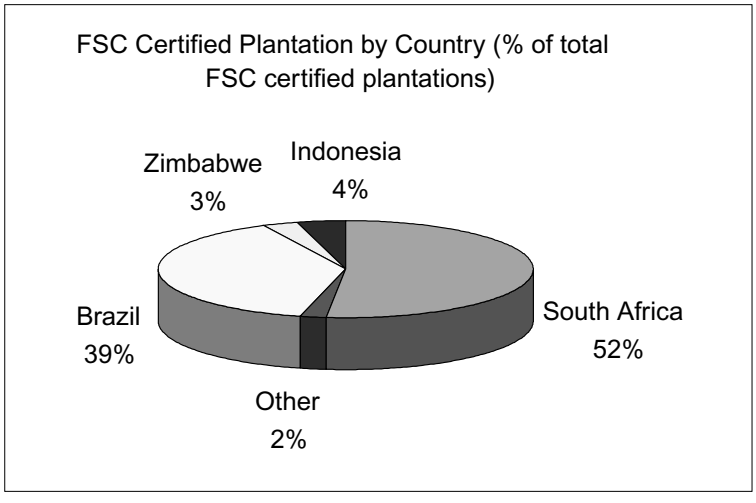
In addition to the FSC certification some companies have implemented the ISO 14 000 environmental management system[3]. SAFCOL and Mondi have had their entire forest operations FSC certified and Sappi has certified its saw log plantations. The other certificates cover relatively small private areas of pine and wattle, which are primarily used for charcoal production, and the 1999 addition of the Natal Cooperative Timbers (NCT) group scheme for private timber growers with medium-sized holdings (averaging about 120 ha each) and small-scale growers (averaging about 1-3 ha each). In addition to the forest management certificates, 30 FSC chain of custody certificates are held by South African companies, 15% of the global total in 1999 (Evans and Mayers forthcoming).

Private sector motivations for certification

Although in 1995 the forestry industry in South Africa had developed an internal set of guidelines for environmental management in commercial forests (FIEC 1995), until FSC certification there was no externally audited and certified procedure for the sustainable management of plantation forests (Edwards personal communication). Certification in South Africa was initially prompted by requests from UK retailers, such as the leading UK Do-it-Yourself (DIY) retailer B&Q, for certified timber. These retailers are important customers of sawn timber from South Africa. The biggest single spur to certification was the decision of Mondi's single biggest sawn timber customer to request FSC certification. Requests from other UK firms, as well as German and USA retailers followed (Evans and Mayers forthcoming).

In addition to these direct requests South African timber products exporters operate in the highly competitive low cost DIY and housewares market, with Brazil and Poland key competitors. South African manufacturers were aware that FSC was positively regarded in this market segment, and were keen to be able to use FSC certification to differentiate themselves from competitors (both within and outside South Africa). The pressure to become FSC certified intensified considerably once significant volumes of certified pine products became available from Poland (Evans and Mayers 2001 forthcoming).

It is also widely accepted in the industry that certification may become an industry standard. Manufactures believe that they might find themselves unable to supply export markets (primarily to Europe) unless they can supply FSC certified products. The view that certification may change from being a means of distinguishing a product to a condition of entry to some markets has been an important concern underlying the rapid spread of certification in South Africa (McCartney personal communication).



However from company interviews and recent IIED research it is apparent that decisions by the major timber companies to be certified were not only the result of market pressure. This is particularly so for those companies whose major timber sales are for local pulp production and not for international sawn timber markets. The other main business reasons why the timber companies decided to apply for certification include:

- *Demonstrating environmental commitment*. Some companies were very supportive of the aims of FSC and certification as a proactive means of demonstrating their environmental credentials;

- *Improving internal management systems*. Environmental management systems can help to provide the discipline required to cope with a changing legislative framework, national and international expectations; and to implement internal efficiency improvements;

- *Meeting future legislative requirements*. Firms sought to develop rigorous systems that would have no difficulty meeting forthcoming domestic legislation;

- *Globalisation and associated investor scrutiny*. Increased international expansion of the major forestry firms has led to higher expectations with regards to company disclosure and to demonstrating internationally recognised standards. For example the London listing of Anglo America, Mondi's parent company, has introduced stronger pressure from shareholders and more stringent reporting and disclosure requirements. There has been increased pressure for fuller disclosure, better information, evidence of continual improvement, and indicators of safety, health and environment and social responsibility (McCartney personal communication);

- *Preparing for supply chain pressure*. Sappi felt that adopting ISO 14 000 would help it certify to FSC standards quickly if the market required it. The pressure from furniture manufacturers on their separate sawn timber milling operations has been so great that the decision was finally made to certify this side of Sappi's operations with the FSC;

- *Responding to environmental and social criticism*. The forestry sector had faced considerable criticism from local NGOs and had been looking for a way of demonstrating their environmental credentials for a number of years;

- *Preparing for privatisation*. One of the potential motivations for SAFCOL's certification according to some industry commentators was to increase their attractiveness to private investors in preparation for the sale of the company's forest holdings.

Implementation experience of certification in South African companies

The IIED research (Evans and Mayers forthcoming) indicates that experience in implementing certification has varied across the companies. Some firms have found 'non-forestry' aspects (such as health and safety and waste management issues) to be the biggest challenges while others found the shifts in management style and the actual forest management requirements to be the most difficult aspect. Safcol, arguably having inherited the worst managed forests of the large firms, had to put in significant time and effort in preparing for certification. The certification process also led to some major corrective actions being asked of the firm as well as the requirement for better stakeholder interaction by the firm. Staff attitudes towards certification are important and it appears that an important element of certification is ensuring that there is sufficient staff support and enthusiasm for the process.

Despite the varied experience of certification, the IIED research points to some common characteristics of companies which have made progress with certification. These are:

- Recognition of the need for both standards and systems.
- A committed team and a participatory approach inside the firm.
- Support from senior management.
- An incremental approach.
- The social aspects of the certification systems were the most difficult for each of the three major companies.

Despite the success of the large firms in introducing certification major challenges remain for the further spread of certification in the relatively unsophisticated South African timber products industry which is dominated by small and medium business. These smaller firms are likely to struggle with the management aspects of certification as well as the actual operating changes needed. Certification has certain fixed costs that make the costs per unit of sales relatively higher for small firms. In addition, the management of a certification process requires an relatively sophisticated management system. This is often lacking in the smaller companies.

Impacts of certification

While it is apparent that certification has had a range of impacts, from more secure market access to improved forest management, it is very difficult to ascribe particular impacts solely and directly to the certification process. Although the environmental management of forests amongst the larger firms was seen as variable but improving

before certification it is felt by industry regulators that the process has led to further significant improvements in forest management (Bethlehem personnal communication).

Although most firms nominally followed a set of industry developed guidelines for the environmental management of forests prior to certification it is likely that the required audits for certification have led to a more rigorous adherence to these guidelines. Some specific areas have been identified by the IIED research as having benefited, such as improved water quality monitoring, better riparian zone management, improved roads management, and greater awareness of genetically modified organisms and clones and associated risks and benefits (Evans and Mayers forthcoming).

Certification has been less successful in getting to grips with 'social' issues such as stakeholder consultation, community access to forests, social responsibility, and health and safety issues. It appears as if there is still no consistent understanding of what comprises social standards for the forestry industry and what the associated criteria for improvements and success in these areas are. This makes it difficult to evaluate firms in a certification procedure (Scotcher personal communication).

Costs and Benefits of Certification

None of the companies have properly evaluated the financial costs and returns of certification including the associated changes in forest management, market access and other issues. At this stage only an indication of the direct costs of certification can be made.

Sappi estimate that putting the ISO 14001 system in place cost around R3 million. SAFCOL calculated that the combined cost of the environmental managers' time and certifiers' charges amounted to 19 cents per m^3 or 0.03% of the logging cost. Mondi indicated that the costs of certification are also well under 1% of total costs.

According to the IIED research some manufacturers had increased their sales since being certified but many felt that FSC had not given them access to new markets in the way that they had hoped, although some have seen greater business from existing customers keen to move into the FSC certified market. Some market segments, such as DIY retailers in the UK, have indicated that South Africa's rapid certification has helped secure and expand South Africa's position in their market and some major buyers have increased their proportion of South African timber (Evans and Mayers forthcoming). On the whole, however, the most important benefit of certification seems to be the prevention of loss of market share, rather than the expansion of market share.

The direct costs of certification are likely to decrease in the future as local certifiers enter the market to compete against the international certification firms. However, it is important to note that the indirect costs, such as the environmental management improvements stemming from audits and the staff time devoted to these

systems, have not yet been quantified. Similarly the benefits, such as improved management, reduced wastage and market access or reputation, remain unknown. From a purely financial perspective it therefore cannot be certain that the costs of certification are outweighed by the benefits. However the decision by South African firms to press ahead with certification seem to imply that the returns are greater than the costs. The financial risk reduction, in terms of exposure to local legislation, possible damage to international reputations, and loss of market share are probably the major drivers for certification by the large firms.

Costs of certification for small growers are likely to still be prohibitive and a real obstacle to certification. Some small growers have become certified to maintain particular markets but these are in the minority. The use of cooperative schemes that allow a number of small farmers to share the fixed costs of certification has emerged and is a possible way forward. Other methods of cost reduction (or even state subsidisation) may need to be found to extend certification to the smaller firms in the forestry sector.

Government policies supporting certification

DWAF is supportive of both national and international standards for sustainable forest management, including certification to international standards. Certification will be mandatory within two years of commencement of a forest management lease on government land. National standards for sustainable forest management are being developed through a process involving various working groups coordinated by the SFM subcommittee of the National Forests Advisory Council. They are expected to be completed by August 2002, and to be incorporated in law thereafter.

The use of certification as a proxy for direct government monitoring of compliance with lease conditions in part stems from the experience to date with voluntary certification. However it is not certain that a voluntary certification procedure will necessarily be well-suited as a replacement for legislated standards and for the monitoring and enforcement of these standards.

Concerns about the certification process

Although the South African experience demonstrates that plantation certification is possible on a large scale and has beneficial impacts there are some concerns that should be noted.

- *Consultation with stakeholders.* This is a crucial but difficult and often neglected aspect of the certification process. It appears that this consultation has been the weakest part of the certification process. Its effectiveness depends on the time and resources available and the familiarity of the assessors with the stakeholders in the area being assessed. Problematic aspects include the incomplete identification of stakeholders; inappropriate methods of consultation (such as the use of faxes in a rural setting as a means of communication); skewed responses (relatively less input from 'weaker' groups such as worker representatives, local communities and traditional authorities); and limited feedback of audit results to those consulted (Evans and Mayers forthcoming);

- *Consistency of certification.* The privatisation process has raised some concerns about the efficacy and consistency of the certification procedures. For example the sale of a portion of Safcol forests adjacent to the St Lucia wetlands, World Heritage site, revealed that some certified plantations were located in an area clearly unsuitable for forestry and also damaging to the wetland system. Similar problems with certified plantations were revealed in areas being privatised in other parts of the country. These incidents raise serious concerns about the rigour of the certification procedures and still require further investigation (Bethlehem personal communication);

- *Social issues.* The set of issues falling under the rubric of 'social issues' is hard to measure and certify against. This is partly because there is still an absence of nationally agreed upon social criteria and standards against which to measure performance. The IIED research indicates that of the various FSC criteria social issues have been the hardest to assess during the certification process although the process has at least placed these issues higher on the agenda of some companies;

- *Added pressures on small growers*. While the large firms may be able to finance certification as a precaution against loss of market share small growers may find that they incur relatively high costs for no immediate financial benefit.

The need for appropriate national criteria, indicators and standards for SFM

It appears that the main problems associated with certification are unlikely to be solved without the existence of formal national criteria, indicators and standards for SFM. These criteria will have to be developed by the government in consultation with all the stakeholders in and outside the industry. The process now underway in South Africa to develop national criteria, indicators and standards of sustainable forest management is in large part triggered by the experience and potential of certification and will be crucial to the ultimate success of certification in developing a forestry sector that meets South Africa's sustainable development needs.

An important difficulty in establishing the social standards component arises when social standards go outside the normal bounds of forestry management as such and include issues such as wage rates, security of tenure or contracting issues that are either governed by non-forestry legislation or are seen by some stakeholders as internal company issues. Reaching consensus on these standards will be a major challenge for the process of establishing national criteria for SFM and for the certification of these criteria.

OUT-GROWER SCHEMES – TOWARDS SOCIAL SUSTAINABILITY

Out-grower schemes have been a relatively new development in the South African forest sector and can be seen as an important step in establishing the social sustainability of the industry. These schemes show that a highly concentrated forestry industry (with a low proportion of ownership by previously disadvantaged Black South Africans) can enter into long-term partnerships with small growers and build a broader social and economic base for the industry and hence a more socially sustainable industry structure.

The partnership schemes can be characterised as a move away from social responsibility programmes which have provided support to locally beneficial projects but which have not necessarily been long-term partnerships with local communities, to schemes where benefits are shared and the partnership is to the mutual benefit of both parties.

In the out-grower schemes the company provides financing, management and production services to farmers to grow trees on their own land under purchasing agreements laid out in a contract. Growers are provided with physical inputs (such as seedlings) as well as loans and extension support for the establishment and maintenance of small woodlots. In return the firms have a right to purchase the harvest from all

trees after a growing cycle of 6-8 years (FOA 1997). The two main out-grower schemes are run by Sappi and Mondi, but there are also some small grower support initiatives run by the South African Wattle Growers Union (SAWGU) and NCT.

There are nearly 19 000 small growers, holding small plantations with an average size of about 2 ha, and totalling around 43 000 ha in extent. Just over 12 000 of these growers are participating in company-sponsored outgrower schemes, falling under Sappi (Project Grow), Mondi (Kulanathi) and SAWGU, and these growers cover a total recorded planted area of at least 24 000 ha under their management.

Benefits to firms

Outgrowing can be seen as a way of allocating risk between the grower, who takes the risk of production, and the company, which takes the risk of financing and market fluctuations. Sappi stress that the out-grower schemes are no handout and that while the timber from such schemes is the most expensive that they purchase it is nevertheless still financially worthwhile for the firm (Scotcher personal communication). In addition the schemes address the need to develop long-term timber supplies. A further major advantage is that the schemes mean that the large pulp and paper companies need not tie up large amounts of capital in land holdings when all they require is wood. Land holdings not only are an unnecessary use of capital but in the current context of South Africa they have other liabilities. These include the potential for land claims (from occupants removed from land under apartheid), and the potential for property taxes being levied on agricultural land in the future.

Out-grower schemes also potentially offer reduced exposure to labour legislation and labour relations issues as the contract between the grower and the firm is a purchase, not a labour contract. This issue raises a point of intersection between certification and out-grower approaches to timber supply. It is likely that to be credible the certification procedure will have to extend across the range of contractual arrangements for forest management. In this regard it is unlikely that the large firms will be able to circumvent certification procedures by establishing timber supplies from out-grower plantations. These plantations will ultimately have to be brought within the ambit of a SFM certificate. The costs of certification, and the associated changes in forest management, will then have to be borne by one of the parties - the out-growers or the firms.

Limitations on out-grower schemes

Out-grower schemes are clearly a very important intervention in integrating the forestry industry into the rural economy of South Africa in a way in which simple employment of labour cannot. The scope of this paper, however, is not sufficient to cover the overall sustainable development costs and benefits of small grower schemes. It is apparent that they have contributed extensively to rural economies including employment, wealth creation, and credit provision. At the same time they are not a panacea for rural development and rarely provide sufficient income for households to rise above the poverty threshold. IIED research suggests that the schemes only contribute between 12-45% of the income needed for households to remain above the estimated poverty line of R750 per month (Evans and Mayers forthcoming).

Some of the strictly environmental sustainability concerns of these schemes can be touched upon here. Experience from other sectors of the South African economy indicate that small firms are less likely to have rigorous environmental management procedures in place than their large counterparts. This is due to smaller profit margins, and hence less ability to finance environmental improvements, and lower skills and awareness of environmental management issues. Small growers with guaranteed purchasers of their timber also have less exposure to the market risk of customers demanding proof of sound environmental management. In addition it is currently difficult, and will become more difficult, for the government to regulate a large number of small growers (Edwards 2000a).

Empirical evidence of the environmental impacts of small growers suggest that out-growers plantations have depleted water sources in some areas. In addition to the natural resource damage, this increases the time and labour burden on women who have to walk further to fetch water (Evans and Mayers forthcoming).

In an attempt to address the issue of less rigorous environmental management by small growers Sappi has developed an incentive scheme for sustainable timber production. Through the scheme the company pays growers, subject to an audit of their environmental management, a premium per ton of timber. Some growers can get fairly substantial additional income. The total cost to the company is about R2-3 million per year. This policy is linked to the ISO 14 001 certification of the company which requires a demonstration of influencing the environmental performance of suppliers and continual improvement (Scotcher personal communication).

THE PRIVATISATION OF STATE FORESTS

In the late 1980s it was decided that the government should commercialise its forest assets by placing them in a company structure as a state owned enterprise. This was done in 1992 when the state owned South African Forestry Company Limited (Safcol) was formed. Safcol had a mandate to run its operations in a fully commercial manner and to report a profit.

The commercialisation offer to private investors includes both Safcol and some of the state forests from former 'homeland' areas (those nominally independent areas created under apartheid and now integrated back into South Africa). The process covers 330 000 ha of planted forest with a total land area of almost 500 000 ha. This appears to be the largest single block of state forests ever offered to the private sector in any country. The privatisation of the state forests is not yet complete and there is a range of issues involved in the process that has an important bearing on forestry policy. These issues primarily relate to the complex issues of *labour*, mainly how to address the large scale employment impacts and job losses of commercialisation, and *land*, mainly how to manage the transfer of forestry assets on land over which ownership is still contested in the post-apartheid land claims process (Bethlehem, 2000a). A further important issue with respect to the socio-economic sustainability of the process is that it is likely to open the industry up to broader ownership by black South Africans previously disadvantaged under apartheid.

As with out-grower schemes it is beyond the scope of this paper to explore all the issues raised by the privatisation of state forests. However the leasing of state forests is the largest component of new investment into the South African forestry sector and there are some interesting indications that this investment process will contribute to greater private sector progress towards SFM. These indications are briefly outlined below.

A condition of the lease over the state forests to private investors is that certification is to be required for the newly leased forests within two years of the lease starting (Bethlehem personal communication). This is an explicit attempt by the government to use a market based instrument (certified timber) as a means of regulating the environmental management of forests. This is clearly a boost to the certification process in the country but carries the attendant problems of a reliance on certification as a regulatory tool discussed previously.

Paradoxically the privatisation process itself has identified a major concern with certification. Through the process of developing the leases for sale and the process of bidders examining the forest blocks serious problems with the certification process arose. Some large tracts of forest which had previously gained certification, were found to be situated in areas clearly unsuitable for forestry. These included 30 000 ha in the Southern Cape, 15 000 ha in the Western Cape and 12 000 ha in the St Lucia World Heritage site area. The benefit of the privatisation process for SFM is that these areas are now to be taken out of plantation forestry and will revert to conservation or other more appropriate land uses (Bethlehem personal communication).

The identification of inappropriately forested areas through the commercialisation process is largely due to the fact that private sector management of these plantations brings with it greater information provision and greater external scrutiny of potential forestry purchases due to the need for thorough risk assessments from potential private sector bidders. The process has shown that the private sector is cautious about accepting plantations that are inappropriately situated and managed which demonstrates their interest in the promotion of SFM.

A final reason why the privatisation process is likely to promote the sustainable management of forests by the private sector is that it will allow the government to focus on regulation of forestry, as opposed to the management of forests. With more resources devoted to forest regulation, a greater focus on regulatory aspects and the removal of the financial burden of under-performing state forests it is likely that the government will be better able to enforce the laudable SFM principles in its legislation and policy, and be better able to devote resources to the protection of the remaining indigenous forests in the country.

PRIVATE SECTOR INVESTMENT IN SFM IN SOUTH AFRICA

The forestry sector in South Africa has a capital base of R25 billion and an annual turnover (including paper products) of R14 billion. However, new investment in the expansion of plantations has come to a virtual standstill from a growth peak in 1992 (FOA 2001). This is primarily due to the fact that the plantation forest industry is limited by natural resource (and corresponding regulatory) constraints and not due to an scarcity of capital for further investment. Most investment in the sector in the recent past has been into productivity improvements, such as genetic improvements, better silviculture and better matching of species to locations.

The single largest source of new investment in the sector is through the sale of state forests reported above. It has been estimated that the value of Safcol's assets to be transferred to new management is between R1 and R1.5 billion (Anonymus 1999). Additional forest holdings may be privatised at a later stage. The full Safcol sale has not yet been finalised and thus far three deals with local investors have been concluded, but no firm purchase agreement with a foreign investor has been concluded. The

government hopes that the conclusion of the large Northern Province/Mpumalanga package (140 000 ha) will bring an international investor to the table (Bethlehem 2000).

The importance of the privatisation process fits with general foreign direct investment (FDI) trends into South Africa. In general it appears that privatisation remains an important FDI leverage across sectors (Heese 1999). The forestry sector has not been within the top 10 sectors of FDI over the last half-decade but this may change if an international investor is found for the remaining Safcol package. FDI into the forestry sector will face the same constraints identified for other foreign investment. These include:

- General concerns about emerging markets
- Perceived political and economic uncertainty about South Africa
- Decreased investment from South East Asian investors due to economic problems domestically
- Exchange rate volatility in South Africa

Internally, a major constraint on investment in forestry is the limitation on the physical expansion of the existing forested area due to water resource and other environmental concerns. This presents a barrier to private sector investment but, as discussed in the following section further investment in afforestation is not necessarily equivalent to further investment in sustainable forest management. The sustainable scale of the industry is still a debatable issue in the country.

The second main avenue for further investment in plantation forestry and in SFM is through small growers. They offer the opportunity for increasing the land area under forestry and it can also be argued that investment through small growers meets many social and economic sustainability objectives in rural South Africa.

How private sector investment can promote SFM

South Africa has particular forestry circumstances. The small area of remaining indigenous forests is managed by the state and protected indigenous forests are only used for timber in a small (and sustainable way). There appears to be a very limited role for the private sector to invest in SFM in these forests.

Private sector investment in SFM is therefore almost solely related to investments in the sustainable management of plantation forests. This sustainable management has environmental, social and economic components. From the review presented above it appears that there are four main areas where private sector investment in the forest sector will support sustainable forest management. These are:

- *Investment in privatisation and better management* - the likelihood of improved environmental and other management of state forests once they are transferred to private hands. This is due to better management already shown by the private sector in South Africa and government requirements that the newly leased forests will have to be certified within two years of the leases starting;

- *Investment in privatisation and improved government regulation* – private sector management of former state forests will allow more time and resources for forest regulation;

- *Investment in certification* - certification, which has been widely adopted in South Africa, will be a key method in promoting SFM in South Africa. There are currently no formal state guidelines for forestry management and the government will be using third party certification as a means to ensure SFM in the country;

- *Investment in small growers* - the expansion of the private sector's forestry holdings through small growers has benefits in terms of SFM because of the social and economic gains made through extending participation in the industry to the rural poor. However, there are concerns that from an environmental perspective small growers may be less likely or able to adopt as good SFM practices as their larger counterparts.

Other avenues for private sector investment in SFM appear to be limited. There are some possible avenues in the non-consumptive forest uses, such as tourism and recreation, but these are insignificant at present.

What is the sustainable scale of the forestry industry in South Africa?

In South Africa plantation forests are not always seen as beneficial. Their existence does not necessarily prevent the destruction of natural forests (since there are almost no natural forests logged for wood in South Africa). They often displace areas of indigenous vegetation (predominantly grasslands) and contribute to stream-flow reduction through substantial water consumption, often in upper catchments. Therefore for a sustainable forestry industry there are two requirements. The first is that those plantations in existence are managed sustainably (these issues have been discussed above), and the second is that the scale and location of the country's plantations are planned so as not to go against the sustainable development priorities of the country.

There are significant pressures for expansion in the industry. On the demand side, the industry suggests that there will be a wood fibre shortage within a decade. The industry feels that about 300 000 ha of new afforestation is needed to meet this demand (Evans and Mayers forthcoming). On the supply side the industry (Edwards 2000a) estimates that there will be up to 2 000 new applications for afforestation by small growers per annum over the next five years (covering an annual area of 18 600 ha). This pressure for expansion has to be balanced against the natural resource constraints in which the plantation forestry sector operates.

At present there is a permitting system in place for new forestry activity which largely revolves around the projected stream-flow reduction impacts of new forests. New afforestation above 10 ha can only occur after a license for stream-flow reduction activities has been granted by DWAF. The granting of the license is decided by a panel in each province made up of the department of environmental affairs and conservation representatives, DWAF representatives and the forestry industry. Issues aside from water use, such as biodiversity impacts, are also considered and it appears as if the permit process is moving towards becoming a 'one-stop-shop' for all the environmental regulations over afforestation.

However there is a strong feeling from industry that the permitting process is very slow and cumbersome at present. Interviews with industry representatives indicate that while the principles underlying the DWAF licensing are generally accepted by foresters, slow implementation has resulted in standstill of operations and severely effected some small-scale contractors. They suggest that blanket community permits may resolve the crises and that implementation of the new water licensing proposals must proceed with due regard for consequences in delays (Evans and Mayers forthcoming).

The forestry industry is concerned that a cumbersome environmental regulation process will lead to delayed investment, and could negatively affect the expansion of large and small growers (Edwards 2000b). There have been concerns raised that the permitting procedures have been done without sufficient consultation from the government on the local benefits of the requested afforestation and that as a consequence of these problems there is an increasingly strong polarisation between small growers and government agencies on the permitting process. There are

indications that the management of the afforestation permit system is so strongly contested that some single growers and communities intend to plant regardless of formal permission, and in fact that there has been an increase in non-authorised plantings (Edwards 2000a).

Investment in Forestry is not necessarily investment in SFM

A key reason for promoting investment in sustainable forest management in South Africa is the need to transform an *existing* plantation forestry industry into a sustainable natural resource sector of the economy. This includes the environmental, ecological, and social sustainability of the sector (given that private sector forces will already be working towards the financial sustainability of the industry).

In addition to this is the need to manage the *expansion* of the forestry sector in a sustainable way. In South Africa this involves the weighing of the benefits of further plantation forests, mainly financial and social, against the costs of such forests, such as the use of limited water resources and biodiversity impacts. This has lead to the situation in South Africa where the management of the sustainability of the forestry sector at times may conflict with further investment in the expansion of the sector.

Different approaches may well be needed to address the dual objectives of:

- *Encouraging* sufficient investment to allow the existing industry to meet national SFM criteria; and

- *Containing* investment in afforestation which is inappropriate given the available water, biodiversity and other natural resource constraints.

CONCLUSION

This paper has raised a range of issues relating to the experience of the private sector in SFM in South Africa. Two important areas of progress in private sector investment in SFM have been outlined – certification and out-grower schemes. In addition to this, the South African experience with the privatisation of state forests and the regulation of the water and environmental impacts of forests give further insight into factors which encourage and discourage private sector investment in sustainable forest management.

In broad terms it appears, perhaps unsurprisingly, that appropriate and efficient government regulations and policy are crucial in *supporting* private sector initiatives in SFM. While the private sector will pursue SFM due to market pressures (for certification); the need for social sustainability (out-grower schemes); and due to sound management principles these will ultimately only meet national sustainable development goals in association with effective state support.

Important issues around which government needs to establish policy, or develop social consensus, are national standards, criteria, and indicators for sustainable forest management and guidelines for social issues which arise in forest management. Without national level guidance sustainability in the sector will remain difficult to benchmark.

The government may also need to address areas of SFM where there may be market failures. These include high transaction costs for small growers in meeting certification. Here the government can support cooperative certification schemes which reduce costs to individual growers. The protection of indigenous forests is a public good and market led private sector investment is unlikely to lead to adequate protection for these forests. Here the state also has a major role to play.

The realignment of the state from forest owner to forest manager is likely to be supportive of the role of government suggested above. This change, led by the disposal of state forestry assets to the private sector, should lead to the improvement of regulation and indigenous forest management. Improved regulation is needed, partly to reduce the current costs of regulation (from protracted permitting procedures) to the private sector, and partly to cope with the difficulty of regulating numerous small growers as the industry diversifies.

An important issue raised in interviews with firms in the industry is that the private sector firmly feels that regulation should not only be premised on punitive enforcement but that greater incentives for SFM should be introduced into the regulatory system. Some firms themselves have been experimenting with some success with incentive systems designed to improve the environmental performance of their suppliers. They feel that government use of incentive systems would be similarly effective. In particular it may be easier to garner improvements from many dispersed small growers through incentives than through punitive regulation which is difficult to enforce.

With respect to water use by forestry the private sector understands that water needs to be allocated to its most highly valued use by society. Some firms feel, however, that tradeable water use permits would provide more of an incentive than cumbersome regulations based on stream-flow reduction assessments. The government, in collaboration with all stakeholders in the industry, needs to find the most appropriate mix of regulatory instruments that will best and most cost effectively achieve sustainable development of the forestry industry.

An overall conclusion that can be drawn from the South African experience is that it is possible for a commercial plantation forestry industry to commit itself to a set of minimum sustainable forest management standards and to adhere to these standards through a certification procedure and other mechanisms. Although certification does not provide a guarantee of SFM it has in most cases led to improved forestry management and has led to improvements in the industry, even in the context of weak government regulation. It appears that it is neither too costly nor to difficult, from a business management perspective, to meet international standards of sustainable forest management in plantation forests on a large scale.

Despite operating in a highly competitive world market, the South African industry has shown that plantation forests can be managed on a sustainable and profitable basis. Although currently there are few other countries where there is the same degree of penetration of certification, the South African experience does not point to any major obstacles that should prevent similar experiences being repeated elsewhere.

While local firms have not seen dramatically improved market access for their products there continues to be sufficient pressure to make it worthwhile for these firms to protect their market access through continued certification. It is probably in the interests of other developing countries to establish appropriate conditions for certification in their countries and to support the process. These conditions include the establishment of national criteria for SFM; establishing local certification organisations; and providing government support for certification as a means to SFM.

At the same time it should be accepted that the certification alone is not a panacea. For example the South African experience raises valid concerns about the certification process such as:

- *National standards*. how valid are these certification standards in the absence of a good set of national standards and guidelines?

- *Small growers*. Will the increasing number of small growers be able to meet the same standards – is there a trade-off between social and economic inclusion and environmental sustainability?

- *Social issues*. How far should social sustainability concerns be incorporated into the definition and endorsement of sustainable forestry (including issues such as labour standards)? and

- *External regulation*. Certification is internal to the existing forestry industry – it says little about whether the historically derived land use patterns of the industry meet current sustainability criteria, or about how to decide on the sustainability or otherwise of future expansion of plantation areas and hence of the forestry industry.

Effective government policy development and regulation is needed to address these issues.

South Africa offers a useful example of the sound sustainable forest management of the majority of large scale commercial plantations. However the difficulties of managing and maintaining indigenous forests remain serious and make it unlikely that their protection in the short to medium term can be made financially viable. Private sector involvement in the management of these forests will not be the answer to their protection. They are public goods requiring government protection and management.

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ENDNOTES

[1] A Rand (R) is the basic South African unit of currency. At the time of writing $1 was equal to about R7.50

[2] Forestry Stewardship Council certification is the only established international system of forest certification. It is based on a set of principles and standards of forestry management, offers a trademark which can be used to label products, and a chain of custody which certifies the product from the forest through the processing chain.

[3] The ISO 14 000 series is an environmental management system. It has no forestry specific standards or criteria and therefore certifies the environmental management *system* and not the forestry management itself.

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Chapter 9

Papers and Summaries on Supporting Themes for Private Sector Investment

Chapter 9 is a composite one, consisting of four sub-chapters. The first, on certification, is the full paper by Muthoo (Forest Stewardship Council). It addresses an activity that almost all the regional papers from Africa, Asia and Latin America referred to as important but which they saw as a cost-raising factor while also helping to defend market shares, with the possibility of aiding the capture of additional markets. The other three chapters are not the full papers prepared for the Oslo Workshop; only the sections most relevant to the private sector have been extracted and constitute the chapters in this book.

Soon after these chapters comes the full paper of Gregersen and Contreras-Hermosilla (Chapter 10) – it is deliberately placed at the end of all the chapters because it is a review of all aspects and it cross-refers to others, so serving to draw all the threads together. It therefore provides a fitting conclusion to the material.

Chapter 9.1

Certification and Sustainable Forest Management

Maharaj K. Muthoo

CERTIFICATION – FROM LAUNCH TO MAINSTREAMING

Awareness is growing about the environmental, social and economic importance of scientifically sound sustainable forest management. The role of certification in this process is emerging as the most concrete and cost-effective means of promoting and assuring sustainable management of forests and related resources.

BENEFITS AND IMPACT OF CERTIFICATION

Independent forest management certification is a recent phenomenon. It was not until 1996 that the Forest Stewardship Council (FSC) first started formally endorsing certificates. Now, only after five years, certification is a fairly major operation, involving an ever-increasing number of organisations, standards, systems and forests. Certification has entered the mainstream of forestry practice, and all the major forest and forestry organisations are developing their position and taking sides on this issue.

Whenever a new idea emerges, there are challenges, and often controversy and opposition. Forest certification is no exception. There are widespread disagreements about what are the best systems, what are the most suitable standards and what are the trustworthy organisations. Yet, from the Americas to Zimbabwe, and Europe to Asia, we are seeing certification being adopted as the gate-way for pragmatically professionalising forest conservation and forestry business, and for ensuring sustainable forest management.

In the FSC programme, certification now covers 22 million ha or more, in all forest types, and under every kind of ownership, from indigenous communities to major corporations and governments. The publicly owned forests of the UK and New York State are now certified. Natural forests owned and managed by indigenous communities, from Canada through the US and Mexico, through Brazil and Bolivia to Chile, have been put under the ambit of certification or audits, and major North American, Japanese and European corporations have done the same.

Certification is new to forestry, but has been a well-established practice in most other industries. All certification is based on three main pillars of (i) standards, (ii) independent certification bodies, and (iii) an accreditation authority. Likewise, these elements were constructed for forestry certification, in the FSC system and in all the others that have followed it.

The development of forest management standards has been the most complex and contentious part of this architecture. All the pertinent stakeholders have strong views about the essential elements of good forestry, and they resist dilution of the principles they are most concerned about. However, certification will not carry credibility unless supported by organisations trusted by the public; so it is vital to involve all stakeholder groups in the development and testing of forestry standards.

We have nearly ten years of overall experience of using open, participatory, multi-stakeholder processes to develop standards, based on principles, criteria and indicators. CIFOR has been one of the pioneers of the scientific basis for developing criteria and indicators, as has been ITTO. This is a slow and painful process, but we have proved that it can be done, and that the results deliver credible certification. From the Amazon basin to northern Europe, these standards now yield certificates which are trusted by trade and industry, by NGOs and governments, by the scientific and academic community, and by consumers and the general public. Of course, this process has not eliminated disagreements and controversies, but it has proved that multi-stakeholder agreements can be reached and maintained, including the involvement of local communities.

Certification is not a force that stands alone for promoting good forest management. By itself, it is only an assurance of conformity with a set of agreed standards. In the best cases, the forest manager must make some significant improvements to merit and achieve a certificate. These improvements might often be difficult to measure, partly because managers are sometimes justifiably reluctant to publicise their previous weaknesses, and partly because the assessments are designed to assure conformity with standards, not to describe all the efforts made to achieve compliance.

However, there is a growing body of critical research into the impact of certification. Some of this has been motivated by a healthy scepticism, and some by a desire to check whether investment in global certification programmes was in fact productive enough. Some detailed case studies have been made of forests certified under the FSC system. These have demonstrated the wide variety of improvements made in all the certified forests, sometimes minor but sometimes involving radical

departures from the prevailing previous misuse in a region. Certified tropical forests in parts of the Amazon basin and Southeast Asia are conspicuous examples of management that complies with national and international guidelines and standards, a striking contrast to many of their neighbours.

No-one expects that forest managers or owners would normally invest in making these improvements, large or small, and in obtaining their certificates, unless there is a meaningful advantage, especially in the market place. This is where the linkage of certification and labelling with market incentives comes into force; the force that is turning certification into a powerful market-based tool for promoting Sustainable Forest Management (SFM).

Producers and manufacturers now have an independent and trustworthy way of convincing the clients about the reliability of their sources. Retailers have a way of convincing themselves and their customers, the public. More and more of them are resorting to certification as a way of implementing their corporate policies of environmental and social responsibility, of improving their corporate images, and of assuring themselves a long-term sustainable supply of products.

However, this is not just a useful tool or a voluntary option, but an essential condition. More and more corporations are deciding that these assurances about well-managed forests and sustainable raw materials are not merely useful image-enhancement, but an essential part of doing business in a changing world, a world with heightened concern about the future of the planet and its forests and biodiversity.

Even though certification for Sustainable Forest Management enhances the cost of management and even though product prices may not always increase commensurately, forest owners and forest product companies, such as Assi Doman of Sweden, have gone forward in making investments for the purpose, given the long

term prospects of profitability and, of course, ethical considerations of environmental and social responsibility. These standard-setters are being emulated so that Sweden has already achieved over 40% of its forest area as being certified by FSC. Elsewhere, I should like to counsel Governments, aid agencies and local authorities to come forward with investment resources in support of appropriate training, auditing and awareness raising to ensure highest standards and sustainability. This is particularly necessary in countries where the corporate sector is weak and where forests are largely in the public domain or small and fragmented. So is the case in countries and regions where woodlots, agro-forestry and stakeholders play a vital role in maintaining ecological balance, in desertification control, watershed management, bio-diversity conservation and carbon sequestration, besides providing fuelwood and other non-timber goods and services of critical importance to indigenous groups and local communities as well as other forest dependent societies.

Indeed, a majority of the enlightened international aid agencies promoting good forest management for the sake of sustainable social and economic development are rapidly coming to the conclusion that investment in certification is a relatively cheap and cost-effective way of achieving their goals. Development agencies such as GTZ in Germany and DFID in the UK are not radical extremists, nor do they give away their money easily, but they are increasing their investment in various elements of certification, for developing standards and promoting confidence among the various players. Donors in the US, such as the Ford Foundation, Rockefeller Brothers, Wallace Global and the MacArthur Foundation have done so for years. NGOs as diverse as WWF and the IFBWW are also heavily committed and fully supportive, and of late there is an alliance between the WWF and the World Bank for a target of millions of hectares of certified forests.

These organisations, and so many others, have accepted the concept of good forest management, as enshrined in certification. It is not a limited vision of pure preservation, neither is it dominated by the demands of profit and production, nor is it a populist concept of job protection or social revolution. On the contrary, it is a multi-stakeholder and transparent system designed to equitably balance the environmental, social and economic needs of society, the fundamental pillars of sustainable development.

Of course, this is not an easy balance to achieve. There is no easy consensus in good forest management. We have learnt that certification and labelling will soon disappear unless the requirements are feasible, realistic and cost-effective. Idealism must be tempered by consensual logic and stakeholder participation. Certification will lose its ability to promote real changes if it settles at a level which is too demanding, elitist, and catering only for the boutique end of the market. It will also lose its credibility if it is too undemanding, business-as-usual, certifying the lowest common denominator. Equally, certification and labelling will be a useless tool unless it is based on the confidence and trust of all concerned. It's a hard job, but worthy of the investment.

Labelling is about communicating messages, in this case a simple message about good forest management. If the public does not believe it, then the message is useless. If it does not have the broad support of environmental and social NGOs, which are trusted by the public, then the public will lose confidence. The retailers and manufacturers are not interested in labels and certificates if people do not trust them.

Corporations as large as the Home Depot, IKEA, B&Q and many others are not merely welcoming certification, but demanding it. By insisting that their suppliers have evidence of good forestry, they are providing a powerful incentive for forest managers to achieve the agreed standards and obtain a certificate.

This is the force that has turned certification into such a powerful and practical instrument for promoting good forest management. It harnesses market forces, public opinion and civil society in support of SFM and draws upon all the old and existing institutions, including national laws and international agencies.

CERTIFICATION FOR ALL

Certification is meant to be open and impartial, but it is not always easy to create a level playing field in the real world of resource management. It always turns out that certification is easier for some kinds of enterprises than for others. This applies to ISO 14000 and to organic agriculture and certainly to forestry.

Certification is always harder for small businesses than for large ones. To reduce some of the barriers for small forest properties, FSC has developed systems for Group Certification, and for Percentage Based Claims. These have helped, and have been copied by other certification systems, but they have not gone far enough. We are now working on a new round of simplification, designed especially for small forests and businesses, to make certification easier while at the same time providing an adequate quality assurance and guarantee about SFM.

Certification in the tropics has yet another set of special consideration. In many tropical forests, there is a great gap between what is happening today, and what is required for certification. Bridging this gap, and improving the management, is a challenge which has occupied many of us and our organisations all our working lives. We are now trying to develop a simple, affordable method of giving recognition to forest managers who are committed to good management and are making clear and measurable progress towards achieving certification.

BUILDING CAPACITY

It is here, as elsewhere but much more, that large scale international investment is warranted, to promote and strengthen national capacity and efforts in developing countries which are facing stringent budgetary constraints. So is the case of countries in transition, including those of Eastern and Central Europe, Russia, Central Asia and Caucasia. Given that certification shall grant access to world-wide markets for their forest products and help contribute to the foreign exchange earnings of their countries, it is expected that certification should provide a major avenue for large-scale investment in Sustainable Forest Management.

Based on the current trend and future prospects, I feel assured that the private and public sectors and the international community will consider providing progressively increasing investment resources for forest certification and related eco-labelling of forest products. In this context, FSC stands in readiness as a standard setter to meet the expectations of all the national and international stakeholders concerned about SFM, about the global environment, and about the welfare of present and future generations.

Chapter 9.2

Feasibility Analysis for an International Investment Promotion Entity for Sustainable Forest Management

Pedro Moura-Costa,
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IMPORTANT: EDITOR'S NOTE ON PRESENTATION OF TEXT EXTRACTS FROM THE ORIGINAL PAPER

This Chapter consists of the Editors' private sector relevant extracts from the original full paper prepared for the Oslo Workshop. In selecting what to extract, the Editors have focused on material that presents information on the nature, magnitude, trends and issues regarding private sector engagement in SFM. This information was assembled by the authors to provide background and context for their analysis of feasibility of the proposed Investment Promotion Entity (IPE). All other material, particularly that on the proposed IPE itself that was the main purpose of the full paper, has been excluded. Working on a selective basis, it is not possible to seek or expect good flow; the information extracted should be taken on its own merits as it stands. As a way to show that a piece of text was, in the full original paper, preceded by other information, the editors have used dotted lines [. . . . . XXXX} and to show that a piece of text was, in the full original paper, followed by other information, they use [XXXX . . . . .]. Connecting words added for readability have been square bracketed, e.g., [XXXXXXX].

. . . . . POTENTIAL SUPPLY AND DEMAND OF INVESTMENT INTO SFM

For the purposes of this report, 'supply' refers to the supply of financial resources to SFM projects, while 'demand' refers to the demand for investment by the forestry sector project development community. The supply side of forestry investment was divided into: public sector and other sources of non-commercial funding (foundations, NGOs, etc.) and the commercially-focused private sector.

Trends demonstrate that public sector financing is declining in absolute terms and as a percentage of financial flows to developing countries. While other non-commercial sources of finance will continue to grow through increased funding flows from NGOs, foundations and greater corporate support for environmental initiatives, these funds will likely remain limited.

. . . . . The potential funding pool from the private sector is much larger [than from public sources]. As an example, we analysed the institutional investment sector in the US. In this country alone, institutional investors manage US$18.6 trillion in funds. If forestry was to receive just 1% of the allocation of their Real Estate portfolio (which corresponds to ca. 10% of the total investment pool) of these funds, total investments from US funds alone would be US$16.8 billion. Specialised timber investment management organisations (TIMOs) identified potential funding of between US$ 1 and US$ 2 billion per year, providing there was the capacity to produce a flow of attractive investments.

The main attribute determining the attractiveness of investments to institutional investors are their risks and returns. Investment managers indicated that the required rates of return for forestry investments in developing countries ranged from 15% to 30% per annum. It is becoming increasingly evident, however, that a large number of forestry deals in the tropics can provide such returns.

While there appears to be no shortage of institutional funds available for investment in forestry, one of the problems has been the difficulty of attracting American and European institutional investment into SFM in developing countries. As a general rule of thumb, Western investment in forestry has shown a strong preference for plantations and timberland investment, mainly focused in a few low-risk countries. Western investors view plantations as a much lower-risk investment than natural tropical forests and have a strong perception that the returns from sustainable natural forest management are low compared to those from industrial plantations.

Unlike their American and European counterparts, Asian forestry companies and institutional investors have shown a clear preference for logging activities in tropical rainforests. In general, Asian forest investors are more risk taking and less concerned about investing in riskier developing countries. The high returns derived from unsustainable logging operations seems to compensate for the higher risks in these countries. The main problem with these are exactly their negative environmental impacts. Recent pressure to improve the environmental performance of these companies has been resisted on the grounds of costs. Asian concerns with introducing SFM relate to the costs associated with training and implementation of sustainable forestry, which are perceived to be prohibitive.

A conclusion of this study is that there appear to be substantial private sector financial resources available for projects that meet the risk/return profiles that the market demands. At the same time, there appears to be a large number of potential projects, a proportion of which has the potential to meet market requirements.

The observed low level of investments in SFM, therefore, illustrates a clear case of market failure, where something currently prevents capital from flowing. We propose, therefore, that there is a strong need to link investors and investment and facilitating deals. It appears as well that innovative structuring and financing approaches may need to be used in order to remove some of the barriers that prevent investment in SFM. There is a clear need for better information flows between the various players in this market, as well as the provision of services related to country risk mitigation, and access to concessional funding for improvement of management practices. Partnerships between the public and private sectors are proposed as a way forward to overcome some of these limiting factors. . . . . .

. . . . . AN INVESTMENT STRATEGY FOR SFM

. . . . . [Recently] Moura-Costa *et al*. proposed an investment strategy for SFM (Moura Costa *et al*. 1999). The strategy outlined the interventions that could assist in improving

financial flows to SFM. . . . . It is important that structural and policy reforms at both the international and national levels continue to proceed. This will provide the institutional and policy environment that will support the implementation of SFM and facilitate private capital flows to SFM in a wide range of countries.

A major potential source of additional capital may be made available through the commoditisation of the non-wood values of forests. This would provide a mechanism to internalise the externalities of sustainable forest practices, such as maintenance of hydrological cycles, carbon sequestration, and genetic resources, which currently do not revert to those managing these resources.

There is also a need to overcome some of the operational constraints to a greater flow of private sector investment into SFM. This would require the development of a number of innovative financing mechanisms. Financing mechanisms need to ensure that a range of capital sources, both public and private, can be combined to overcome some of the operational impediments to the implementation of SFM. Matching private sector funding with public sector funding, developing project finance using a range of public and private financing sources and a series of instruments that fit particular niches in the market will be required. There is also a need to educate capital markets on the benefits of SFM investments, packaged in terms the capital markets understand. Risks and risk management tools associated with SFM investment need to be developed and promoted to investors.

Moura-Costa *et al.* (1999) identified a number of ongoing policy processes that are addressing a wide range of the impediments identified in Table 1. They identified a key need for the policy reform process to engage the private sector, and private sector capital markets, if private financial resources were to be directed to SFM.

It was suggested that public sector financial flows could play a crucial role in leveraging private sector financing of SFM. However, for this to be achieved, it would be necessary to build mechanisms to promote better coordination and cooperation between the private and public sectors and to facilitate SFM investment. . . . . .

SUPPLY AND DEMAND OF FINANCING FOR SFM

. . . . . [Apart from Public (both Official Development Assistance and domestic public sector sources) and other non-commercial sources], ... the supply side of forestry investment . . . . . [includes] . . . . . Private Sector Capital, including debt and equity flows from commercial banks and portfolio investors and foreign direct investment flows.

Table 1. Proposed financing strategy for SFM (Moura-Costa *et al.* 1999)

Level	Objective	Intervention
Global	1. Enabling conditions at global level	Agreed policy framework, including concessionary finance and its uses Ground rules for trading of environmental benefits and for market-based instruments (CO_2, bioprospecting, certification and labelling, etc.)
	2. Development of globally applicable instruments for SFM financing and related programs	GEF, CDM, joint implementation, co-financing etc. Innovative financing mechanisms
	3. Fund raising and investment promotion	Awareness about SFM investment opportunities Concessional funding Investment promotion (IPE) Country and sector risk mitigation
Regional	1. Enabling conditions at a regional level	Regional cross capacity building Cross-border trading of hydrological and other services of forests
	2. Regional financing instruments	Regional Instruments of MDBs, regional VCFs
National	1. Enabling conditions at the national level	Policy framework: removal of structural and operational barriers to SFM, regulation and commoditisation of forest benefits Capacity building, including good governance and transparency NFP and their investment programs as co-ordinating instruments
	2. Fund Raising and investment promotion	Concessional funding and pooling of resources within sector programs (including forest partnership arrangements) Investment Promotion Facilities Strengthening of financial intermediaries

Table 1. *Continued*

Level	Objective	Intervention
	3. National financing instruments	Direct commercial financing (portfolio equity investments, investment funds, etc.) Direct concessionary financing (national conservation/environment funds, debt for nature/development swaps, venture capital funds, SME credit lines and micro-credits, small grants, etc.) Market development mechanisms (carbon trades, bioprospecting, water usage charges, certification, etc. Fiscal instruments and other structural mechanisms (public forest funds, performance bonds, etc.)
Local	1. Enabling conditions at local level	Removal of operational constraints Capacity building Participation
	2. Commoditisation of forest benefits	• Valuation and integration
	3. Local Financing	• Conventional project financing • Micro financing

MDB = Multilateral Development Banks; VCF = Venture Capital Funds; NFP = National Forests Plans; SME = Small and Medium sized Enterprises

Supply Side: The public sector and other non-commercial sources

Trends demonstrate that Official Development Assistance (ODA) is declining in absolute terms and as a percentage of financial flows to developing countries. In 1996, total global flows of ODA totalled US$42.7 billion across all sectors. This was 15% of the total financial flows of US$284.6 billion (down from 56% in 1990), and represented a decrease of 27% in absolute terms since 1990 (Best and Jenkins 1999). It is estimated that US$20.4 billion was invested in the forestry sector in developing countries (including processing) in 1993. Of this, bilateral and multilateral ODA accounted for US$ 1.54 billion (7.5%). Accurate figures on domestic public sector investment in the forest sector are difficult to obtain, but it appears to be in the region of US$8 to US$ 10 billion. Much of this was spent on small community-based forestry projects (Moura-Costa *et al.* 1999).

While non-commercial sources of finance will continue to grow . . . . . these funds will, likely, remain limited. . . . . .

. . . . . there is little investment by the international public sector directed into commercial activities that generate substantial amounts of income, foreign reserves and jobs in developing countries. There is a role, therefore, for the involvement of the private sector to complement public sector funding with regard to the productive functions of the forest.

A significant trend in forest investment is the rise of private capital as a funding source, reducing the share of funding contributed from ODA and domestic public sources. Foreign private sector investment in the forest sector appears to have reached US$8 to US$10 billion. This is mainly targeted at plantation establishment, logging operations and downstream processing facilities. The problem is that these increased private flows have too often been directed into unsustainable forest practices rather than sustainable forest activities.

This suggests that the most effective role of ODA may be to leverage private sector capital, increasing investment levels in SFM, but at the same time ensuring the adoption of higher environmental standards within the forestry sector in developing countries.

Supply side: The private sector

Potential of the private sector as a whole

The potential funding pool from the private sector is large, and likely to be dominated by financial flows from institutional investors. As an example, we analysed the institutional investment sector in the US, which currently manages US$18.6 trillion in funds (The Conference Board 2000). Complex asset allocation models are used to direct these funds into various asset classes, based on the historical returns and risks. There are 5 broad asset classes that are used by institutional investors, as follows:

- Securities
- Equity
- International Equities
- Real Estate
- Alternative assets

Forestland assets are usually considered part of the Real Estate portfolio. While the total percentage of assets held in each of these asset classes will vary according to the returns being generated, in general the Real Estate portfolio has historically represented about 10-12 percent of total assets. Even if forest assets were to be just 1% of the Real Estate portfolio, total investments from US funds alone would be

US$16.8 billion. Specialised TIMOs were asked about the funding potential for the sector. They identified potential funding of between US$ 1 and US$ 2 billion per year, providing there was the capacity to produce a flow of attractive investments.

This amount would be much higher if other countries were included in the analysis.

Factors determining the attractiveness of forestry investments

If the private capital markets are to play a greater role in financing SFM, it is important to understand what are the characteristics that make forestry attractive to private investors. ..... Mills (1998) .... lists the attributes of investment that are considered by institutional investors. They are:

- Risk and return. Risk and return are related. The higher the risk, the greater the expected return. Most institutional investors are risk averse, and require significant risk premiums to assume risk (see Box 1). A number of studies have shown that timberland investment has historically produced competitive returns at low risk (Binkley *et al*. 1996, Klemperer *et al*. 1994). Additionally, these studies suggest that forest investments are counter-cyclical when compared to the standard investment portfolio of stocks and bonds. There are indications that logging operations can provide much higher returns, but concern about environmental safeguards and developing country risk has prevented Western investors from engaging in this activity.

- Maturity, referring to the period that an investment must be held before the value can be realised. In the case of timberlands, this is derived from ongoing income streams from forest management and capital appreciation. In general, capital is impatient and markets prefer assets with shorter maturities. Where maturities are longer, risks are perceived to be greater and higher returns are required. In the case of forestry, this leads to financial pressures to manage the resource in such a way that income streams are accelerated (logging is brought forward and inadequate investments are made in long-term regeneration of the asset). This pressure is common to both plantation and natural forest management operations.

- Tax impacts. The tax impacts of investments vary widely between jurisdictions and corporate structures. One important consideration is the mix of income between ordinary and capital gain. One problem with natural forest management is that accounting methods in many countries do not take into account the appreciation of forest assets managed

Box 1. Expected Rates of Returns and Risk Premiums

TIMO and investment managers indicated that the required rates of return for forestry investments range from 15% to 30% per annum.

The expected rate of return has a number of components that include a number of return premiums to reflect individual risks involved in investing in different assets and locations. In relation to forestry investments, the components of return are:

- *The Risk Free Investment Return*. The minimum rate of return expected by investors. This is the return that can be earned from US Treasury notes, regarded as a 'risk free' investment. They are currently around 5% pa. Risk Premium for Forestry Investments. This is a return premium for the investor accepting particular risks associated with forestry investments. In general, this risk factor tends to be in the 4 to 6% range. It includes the market and project risks that are generic to forestry projects worldwide, and will vary slightly from project to project depending on exposure to the risks involved. It takes into account the asset diversification benefits of forestry benefits for portfolio managers.

- *Risk Premium for Country Investment*. Risks associated with investing in a particular country are covered by this premium. It varies according to the fiscal, economic, political, legal and social conditions that prevail in each country. In developed countries, the risk premium can be as low as 1 % to 2%, while in developing countries it can climb as high as 15-20% (precluding industrial investment in almost any sector). In the case of the GMO Brazil Sustainable Forestry Fund, a country risk of 7% was built into returns (see Box 3 below).

- *Special Risk Premiums*. There are other risks that may be associated with a particular investment that need to be accounted for in risk premiums. These include risks associated with investments in certain regions such as the tropics or economies in transition. While most other risk premiums are well understood and quantified, these premiums can sometimes be more subjective and dependent on the project developers' perceptions of the type of project that is being developed.

sustainably, while only accounting for revenue generation. The pressure to generate adequate earnings for shareholders has led to a focus on production (logging) as opposed to long-term sustainable management.

- Personal Time. Institutional investors often do not have the expertise, experience or time to be heavily involved in the management of a particular asset. Some investments require little time, others require a great deal of

supervision. The development of TIMOs in the US and Europe has provided a mechanism through which investors can include forest assets in their portfolio without having to develop in-house expertise. This is even stronger in relation to natural forest management investments in the tropics.

However, even for TIMOs, the time and costs of project evaluation can be a strong disincentive. A number of TIMO managers expressed concerns over the cost and time requirements for participation in some forest privatisation and noted that they would carefully consider their participation in such processes in the future.

- Protection from inflation. Investments stated in fixed dollar terms, such as bills and bonds, are subject to inflationary risk. Those with values tied to real assets such as real estate, common shares and receivables have a lower susceptibility to inflationary risk. Forest assets have the advantage of appreciating through growth and through increased timber values for larger trees. This gives them a unique characteristic as a hedge against inflation.

- Liquidity of asset is a key factor for most investors, particularly in cyclical investments. Liquid markets provide information on the value and performance of investments. Illiquid markets provide the investor with less flexibility, restrict exit options and provide less reliable estimates of value. As Best and Jenkins (1999) point out, liquidity is likely to remain an issue while investment levels are low, but as capital flows into forestland investment liquidity will rise. This has been the experience in the US, New Zealand and Australia. There are also ways of increasing the liquidity of a long-term asset, such as placing it in a listed vehicle. Fletcher Challenge used this approach with its forest assets. Similar approaches have also been used with other long-term assets such as infrastructure.

The Hancock Timber Resource Group (1999) has calculated that over the period 1960-1998, a risk efficient portfolio earning returns of 8.00 % would in theory contain 13.9 % of assets in forest while a portfolio earning an 11.00 % return would contain 34.3 % of assets in forestry. They also note that forestry investments have traditionally been negatively correlated with most other asset classes, but positively correlated with inflation. This implies that timberland assets reduce the risk in a portfolio and act as a hedge against inflation.

These figures indicate that the private capital markets have the potential to provide large sums of capital to sustainable forest management. However, the crucial issue is how to develop investment products that will meet the needs of the institutional market and promote SFM as an asset class to institutional investors.

Historical trends of private sector investment into forestry

In the past, institutional investment in the forestry sector was limited to investments in listed industrial companies that may have held forest assets as part of their business. The majority of private investments in forestry have been made in timberlands in the North itself. Only a proportion of investments has been in the North-South direction, and mainly through foreign direct investment (FDI). Traditionally, the European Union has been the major investor in Africa and the Pacific, and the US the main investor in Latin America. Japan has also been a major investor in forestry in Asia, the Pacific and Latin America.

More recently, the availability of investment funds has given the opportunity for industrial companies to restructure and divest their forest lands. In the US, this has been done to take advantage of historically high domestic timberland values, and in order to boost shareholder returns. In particular, removing forestland assets from the balance sheets of industrial firms has some potential tax benefits and there is a perception that it can lead to the equity markets better recognising the value of these assets. There is a clear trend of declining FDI in forestry activities by companies in the industrial sector.

At the same time, one of the most significant changes in investment patterns in forestry over the last 15 years has been the emergence of institutional investors in the sector. As forests have increasingly become understood as financial assets rather than industrial assets, institutions have increasingly been willing to invest in special purpose timber investment management organisations (TIMOs). These are specialist investment managers that specialise in portfolios of forest assets, principally for their timber values.

While there appears to be no shortage of institutional funds available for investment in forestry, one of the problems, noted by several authors (Best and Jenkins 1999, Landell-Mills and Ford 1999) has been the difficulty of attracting American and European institutional investment into SFM in developing countries. However, over the past 10 years there has been a significant growth in tropical forest investment from other developing countries such as Malaysia and Korea (Sizer and Plouvier, 2000).

In order to understand the potential and direction of these investment flows, it is necessary to analyse the perception and requirements of investors in the two main regions providing private sector financial resources to the forestry sector: Western (including North America, Europe, Australia and New Zealand) and Asian countries.

Western institutional investment into forestry

Institutional investment in forestry is a relatively new phenomenon. Binkley *et al.* (1996) noted that in the United States, reforms of the financial regulatory structures in the mid 1970s, and the corporate restructuring of the mid 1980s, produced opportunities for institutional investment. Caufield (1999) notes that institutional timberland investments have grown from US$ 69.2 million in 1985 to more than US$ 6.5 billion in 1998.

Accompanying this investment has been the greater transparency in the market place, including the development of a number of indices to provide improved information on timberland values. Specialist timber investment management organisations (TIMOs) were established to manage institutional investment in forestry (Binkley *et al.* 1996). These bring the following advantages for investors (Best and Jenkins 1999):

- Ability to mitigate risks across a number of projects/countries;
- Ability to leverage investment by co-investing with other investors;
- Potentially easier portfolio diversification;
- Management by professionals in the field.

As part of this study, a brief review was conducted of the types of forestry funds in existence at the present time in the following countries: UK, USA, Holland, Australia and New Zealand. The types of fund were split into two categories:

- Tax-based prospectus products. These are found mainly in Australia, New Zealand, UK and Holland and are subscribed to mainly by private investors;
- Institutional (mainly pension funds) investments found largely in the USA.

Forty two separate funds were identified with over US$ 7 billion under management over 2.7 million ha. Of this, 76% by value is managed in the United States. The average forecast pre tax nominal return from these was 13.42%. However, some caution should be used with regard to these figures as there are wide variations in:

- the tax rates in operation which in some cases drive a pre-tax equivalent return;
- land prices, which give some countries a larger share of the value of funds under management;
- climatic and other silvicultural conditions;
- differing rotation lengths.

A summary of the returns from these funds is shown below:

	USA	UK	Australia	New Zealand	Holland	Switzerland	Grand Total
Funds under management (US$ million)	5 634.0	958.2	395.6	138.4	79.0	50.0	**7 255**
Total area under management (ha)	2 152 000	310 000	137 500	45 246	7 750	80 000	**2 732 496**
Average of forecast returns p.a.	12%	9%	15%	9%	14%	14%	**13%**
Max. of forecast returns p.a.	14%	9%	23%	9%	20%	14%	**23%**
Min. forecast returns p.a.	9%	9%	9%	9%	8%	14%	**8%**
Number of funds	7	5	7	2	20	1	**42**
Land as % of total	**77.64%**	**13.20%**	**5.45%**	**1.91%**	**1.09%**	**0.69%**	**100.00%**

As the review was limited in scope, it could reasonably be expected that the total size of the sector is much larger, possibly by a factor of two. In particular, no analysis has been made of some of the other major forestry areas such as Canada, Russia and the former Soviet Union, and Scandinavia.

As a general rule of thumb, Western investment in forestry has shown a strong preference for plantations and timberland investment, mainly focused in a few low-risk countries (see Box 2).

Australian and New Zealand funds, for instance, have generally invested in plantations for the pulp and paper industry or fast growing exotic softwoods, domestically. These funds have relied primarily on exemptions from tax (either as an allowance against the investment amount or on the returns) to private individuals to enhance returns. They generally offer pre tax nominal returns in the range of 11%-15% and in Australia this industry has raised in excess of US$400m to date.

Dutch funds (for which details are incomplete) have primarily invested in teak plantations in South America (mainly Costa Rica). Some of them are perceived to

Box 2. The Western preference for plantation investments in selected countries

TIMO managers in both the US and in the UK both expressed strong preference for investing in plantation forest assets. They also indicated that there was a limited range of countries in which they were willing to invest.

A preference for plantation Investments

The majority of investors indicated the they would only include plantation assets in their investment portfolios. To date, most US funds have only invested in natural forest in their own country.

The following reasons were given for the preference for plantation operations:

- *Environmental Risks*. Most fund managers nominated the political risks associated with the environmental impacts of logging in natural forests. This risk comes both in the major capital markets where they are seeking to raise funds (the EU and the US), but also in the countries of operation, where there was concern over disruption of operations.

- Interestingly, some fund managers did not see forest certification as sufficient to mitigate this risk. There were concerns that regional certification guidelines had not been completed in all areas, and that this would become a highly politicized process.

- *Economic Risk*. Fund managers noted that plantations give managers greater flexibility to manipulate yields to fit cyclical markets for forest products. The yield restrictions that are imposed within a natural forest SFM regime may restrict the options available to management.

- Management Focus.

- In plantations, management can have a clear commercial objective. In SFM operations in natural forests, there is concern that social objectives may impinge on the commercial focus, diverting the attention of management and making their task more complex.

A preference for investing in developed economies

Most of the Western fund managers also indicated that they would be unlikely to invest in all but a handful of developing countries. They noted that they have only recently diversified internationally, and that they preferred to invest in economies that provided a stable investment environment.

Box 2. *Continued*

A number of TIMO managers indicated that they would be launching new funds with an international focus in the next 12 months. However, these funds will concentrate on investments in Australia, New Zealand, and possibly in Chile. There is little appetite for investment in countries that are not in the lowest 15 or 20 on investment risk scales.

The risks that concern TIMO managers range from the risk of appropriation, the risk that the legal and commercial structures and institutions are not well enough developed to support complex investments, and a lack of physical and social infrastructure. The presence of a relatively open economy, with transparent political processes, a strong legal framework and relatively free movement of capital were seen as being crucial.

TIMO managers pointed out that forest asset investments were attractive partly because of their specific risk characteristics. The markets have developed specific investment vehicles to gain exposure to developing market risk (usually equity based emerging market funds), and there is a reluctance to mix emerging market risks with forest assets.

have poor track records and there are allegations of improprieties on the part of some of the fund operators.

In the USA, the majority of investments in the past have been in timberlands in the US, where an inefficient market allowed purchases to be made at low values (hardship deals). The introduction of improved financial management and increases in liquidity as more investments were made allowed increased efficiency in the market, and timberland prices rose to better reflect real values. Domestic investments had the advantage of avoiding risks associated with overseas investment in what was a new asset class.

The American market is currently dominated by two main players, Hancock and UBS Timber Investments (with almost 50% of the total under management). These generally have invested in hardwoods in temperate climates (mainly North America) and offer real returns in the range of 11%-12%. UBS Timber Investments has 11 active closed end funds with US$1.3 billion under management. These are over 70 clients comprising many of the main institutional investors in the USA and pension funds managed by them. Hancock has five closed end funds and over US$3 billion under management. All are for institutional investors.

Discussions with TIMO managers have indicated that in excess of US$500 million of additional funds will be raised from the institutional market in the next 12 months. The majority of this will be targeted at plantation investments.

As the prices of US timberlands have increased, however, timberland investment opportunities are becoming more limited. With increasing understanding and acceptance of the asset class in the markets and as micro-economic reform progressed in many developed economies, the opportunity arose for investment in forests outside the US. Many investments have been made in the plantation sectors in New Zealand, Australia and Chile from the late 1980s onwards. Investments now also exist in Argentina, Brazil, and Uruguay. Other examples of recent departures from this investment trend include, for instance:

- GMO (Grantham, Mayo, Van Otterloo & Co) Resources (a large US-based fund manager) has recently put together its first forestry fund (US$34 m) and made its first investment in a natural forestry operation in Brazil (with a processing facility close to that of the Precious Woods fund, a Swiss investment in natural forest management in the Amazon);

- UBS Timber Investments put together a US$500 million global fund and is in the process of closing a second offering which will target Southern Hemisphere temperate regions;

- Hancock has also undertaken an international fund.

It appears that the drivers of this move to new markets have been:

- Greater policy support in the form of tax incentives, particularly in Australia, and Argentina;

- Greater awareness amongst institutional investors in these countries;
- Superior growth rates;

- Potential for land price appreciation as part of the returns;

- Potential carbon value under the Kyoto Protocol.

Asian investment in forestry

Asian investment in forestry activities has largely been made through the ownership of logging concessions over forest areas, leases or the sale of standing timber (Landell-Mills and Ford 1999). Historically, these arrangements have had few restrictions imposed on forest management and have been available at a relatively low cost. This has been conducted mainly by privately-owned logging companies throughout Southeast Asia and the Pacific.

Since the 1980s, there has been a trend for increasing institutional investment into forestry in the region. A major driving force has been the Asian stock markets, which provided the large Malaysian, Indonesian and Korean logging and wood products companies with access to external capital. This has been illustrated by the amount of investment derived from European and American capital markets to Asian companies that have interests in forests and forest products, which reached US$ 100 billion in 1995 (personal communication, M. Campanale, Senior Investment Analyst, Hendersons, London).

In order to provide the high financial returns necessary to attract this level of investment (on average 40% internal rate return - IRR), these companies have carried

out extremely intense exploitation of their forest resources. The level of environmental degradation and social exploitation caused by such high intensity and highly profitable operations is totally unacceptable. Furthermore, as this has become known, great public outcry has forced a series of Western investors to withdraw their investments.

Unlike their American and European counterparts, Asian forestry companies and institutional investors have shown a clear preference for logging activities in Southeast Asian tropical rainforests. More recently, forestry resources in Southeast Asia have become increasingly scarce, driving these companies to search for logging concessions elsewhere. This has led to a series of Asian investment into the Pacific, Africa (mainly Congo and Gabon), and South America (including Guyana, Suriname, and Brazil). In Brazil alone, it is estimated that more than 7 million ha of forestland has been secured by Asian forestry companies in the last 5 years.

There is also a recent trend among Asian companies to invest in plantation activities. The low costs, high growth rates and availability of cheap land has led to the realisation that some of these countries could have a comparative advantage in the pulp and paper market. Unless environmental safeguards are put in place, however, there is the concern that this trend may lead to further environmental degradation and conversion of natural forests into monoculture plantations.

REDIRECTING INVESTMENT INTO SFM

If forests are increasingly becoming accepted as an asset class, why is much of this investment being directed at unsustainable operations or to plantation assets in developed countries rather than sustainable forest management? How can these flows be redirected ?

The reasons for this behaviour is based on investor's perceptions of the risks and returns of different investments. The perceptions of Western and Asian investors are drastically different.

Discussions with TIMO managers in the US and the UK dealt extensively with these issues. The focus of TIMOs when investing internationally is almost exclusively on plantation assets. There was also a strong preference for investment in developed countries, where TIMO managers are reasonably familiar with investment conditions.

Western investors view plantations a much lower-risk investment than natural tropical forests. At one extreme, there is a view that plantations will almost totally replace natural forests as a source of commercial fibre. This is based on the view that production costs in plantations will be lower than those on native forests and there will be far fewer environmental pressures. If this were the case, Western commercial financing of SFM operations would be difficult, unless it can be proven that sufficient revenue streams can be derived from non-fibre forest products and services. This also implies that asset values of natural forests may depreciate in the longer term, which is a matter of great concern to investors.

Not all the industry, however, ascribes to this view. Other Western TIMO managers and many Asian investors believe that tropical forests will continue to be the primary source of highly valued timbers for peeling and decorative uses. They also dispute that plantations are likely to gain a production cost advantage, as the cost of accessing land escalates. As a result, they see a highly profitable role for SFM operations in natural forests providing high value solid timber products.

Apart from the market considerations outlined above, Western investors also have also a strong perception that the returns from sustainable natural forest management are low compared to those from industrial plantations. While in temperate regions this may be the case, there is evidence that natural forest management in the tropics can bring very high returns, as illustrated by the high profits realised by Asian logging companies unsustainable operations. There is strong evidence to suggest that there is scope to earn adequate rates of return even if these forests were managed sustainably.

The issue of developing country investment risk was of clear concern to Western TIMO managers. These concerns go beyond those that are used in the compilation of traditional country credit ratings, including issues such as adequacy of property rights, regulation and levels of government intervention in the economy. In general, TIMO managers had a strong preference for investing in those countries where there are strong legal frameworks to protect their rights and relatively free markets with low levels of government intervention.

In general, Asian forest investors are more risk-taking and less concerned about investing in riskier developing countries. The high returns derived from unsustainable logging operations seemed to compensate for the higher risks in these countries. Asian concerns about SFM relate to the costs associated with training and implementation of sustainable forestry, which are perceived to be prohibitive.

Western TIMO managers are also sensitive to the perception of the environmental soundness of forest investments, particularly natural forest investments in the domestic marketplace. The value of certification in addressing these concerns and in providing increased market value for timber products was discussed with some investors. In Europe there is a view that market access will increasingly depend on certification. There was not a great deal of optimism that price premiums could be achieved for certified products. A UK-based manager also put forward the view that certification does not impose significant additional costs in the management of domestic forests. It was conceded that the same might not be true of certification of tropical forestry operations.

US TIMO managers and Asian investors are less enthusiastic about the benefits of certification. The value of certification in tropical regions was questioned, especially where it meant becoming embroiled in the often controversial process of establishing regional guidelines. There were fewer concerns over market access, although some TIMO managers conceded that this would be an increasing issue in the future. They also noted that there was no price premium for sustainably-produced timber despite a highly visible campaign in its support.

The different perceptions and estimations of investment risk within these different investment groups suggest that there could be successful synergies if better communication flows existed between them. It becomes also clear that there is a great need for information to be made available to investors, to change misconceptions and enable more accurate investment decisions.

An effective way of changing perceptions is through real case studies. The existence of a successful investment track record reduces risk perceptions and transaction costs, as the project and investment criteria are well known. Many TIMO managers were of the view that SFM investment opportunities in countries such as Chile, Argentina, Uruguay and Thailand could be sold in the investment markets, because of the track record of successful investment in plantations in these countries. Investments in other developing countries would be difficult to place in the market, and one TIMO manager pointed to the failure to privatise the state owned plantation assets in South Africa as an example of this. Successful examples of SFM investments, such as the natural forest management operations of Precious Woods (a Swiss forest investment group) and GMO-Gethal (an American-Brazilian joint venture) in the Amazon, pave the way for further foreign investment into these regions and activities.

. . . FACTORS IMPACTING ON PRIVATE SECTOR INVESTMENT

As discussed earlier, the markets' appetite for forestry investments compared to other asset classes will be determined by their relative risk/return profiles. While there is strong potential demand for forestry assets at the present time, is this likely to change? Further, is there any suggestion that the markets will significantly alter their requirements for forestry assets in the foreseeable future?

As discussed above, high growth rates and low inflation in the past decades in the western economies have created strong growth in equity markets, particularly amongst the technology and communications sectors. Interestingly, it has also caused some diversion of investments from mutual and other funds into direct retail investment in equity markets (assisted by privatisation in some countries). At the same time, high global growth rates have also assisted forestry investments, as they have led to increased projections for timber demand, creating a potential shortfall in supply in some regions at least.

The key issue is whether any softening in economic growth rates will change the attractiveness of timber investments relative to other assets.

Any significant outbreak of inflationary pressure on a global scale is likely to signal a tightening of monetary policy, reducing corporate profits and equity values. It is also likely to reduce returns from venture capital. The value of forestry assets as a hedge against inflation may make them more attractive to investors.

Slowing growth without significant inflationary pressures and the tightening of monetary policy (the soft landing) are likely to dampen corporate earnings, somewhat

reducing the attractiveness of equities. At the same time, they could remove the threat of interest rate increases, also lessening the competitiveness of securities.

However, softening economic conditions may also cause negative perceptions for forestry assets due to concerns over falls in demand for timber. This reflects the cyclical nature of fibre prices (although high value tropical lumber prices tend to be more stable than pulpwood prices).

The consensus of TIMO managers was that there might be a slight softening in demand if economic growth slows rapidly. However, there is still likely to be demand for well structured forest assets. As during any economic slowdown, investors are likely to become more risk averse. Under these circumstances, the counter cyclical nature of forestry assets may also be attractive.

DEMAND: ARE THERE ENOUGH SFM INVESTMENT OPPORTUNITIES?

If it is accepted that the market has the capacity to provide significant financial flows, the real issue that determines the feasibility of the IPE is the potential supply of attractive projects to the market.

Best and Jenkins (1999) address this issue at length. They asked if the lack of investment in SFM was because of a failure in the market place or a lack of good deals. They concluded that while there are attractive SFM investment opportunities, at this stage the market has not recognised them. They concluded that the lack of capital flows into SFM appeared to be project- and country-related.

Firstly, there is a clear emerging demand for certified wood products, particularly in Europe. The failure to have forest management certified may lead to market access difficulties. As a result, increasing numbers of forest managers will be seeking to certify their operations. Over 20 million ha of forests are already certified under the Forest Stewardship Council's (FSC) scheme, a growing proportion of them in developing countries (Nussbaum 2000).

Secondly, there are already a few examples of projects that meet the rates of return required. The investment by GMO or the Precious Woods groups in sustainable (both are FSC certified) natural forest management operations in the Brazilian Amazon are good examples (see Box 3).

The ability to develop projects that meet the desired rates of return this early in the development of the market is encouraging. Due to the lack of experience in developing these projects (especially in developing countries), transaction costs have been high, but can be expected to fall in the future. This will help reduce costs and increase returns. In addition, the number of projects that can be successfully commercialised will increase as the IPE develops innovative funding partnerships, markets for non-timber values become better established, and innovative risk mitigation tools are developed. The long-term development of the policy, institutional and commercial infrastructure to support SFM can be expected to further facilitate private investment.

There are also a huge number of potential projects. The large number of investments undertaken by Asian logging companies in Africa and Central-South America in the last years illustrate this potential. Even if only a percentage can be made commercially viable while meeting acceptable environmental requirements, there will still be a large number of projects that meet the needs of the investment community. Other indications of the large number of potential forestry investments are given in other papers in this Conference.

It is thought that public sector funding could be used to leverage private sector investment into sustainable productive forestry, by assisting in removing the barriers that currently prevent it. . . . . .

. . . . . RISK . . .. . .

. . . . . risk is a key factor in determining the attractiveness of SFM investments. Currently, the market perceives them to be relatively high risk, which increases the returns that are required. . . . . Risks can be associated with the following sources:

- Sovereign Risk. These cover the risks associated with investing in a particular country. They relate to political and economic stability, the adequacy of legal regimes, macro-economic policies, and adequacy and stability of regulatory regimes and transparency. They were a major source of concern to TIMO managers, and are well recognised as a key determinant of investment flows.

  The public sector may be able to play a role in underwriting some of these risks, which are generally not acceptable to commercial underwriters. The World Bank is currently finalising the first such arrangements in relation to forestry projects. The further development of these concepts may be crucial in ensuring that capital flows occur into more than a handful of developing countries.

  For these mechanisms to be possible, it requires the support of the national Government. In order to devote the time and resources necessary, it is likely that they will have identified SFM as a strategic investment priority.

- Project performance risks. Project performance risks relate to factors such as mismanagement and technical failure. They relate to the failure of the project to meet management or business plan projects for internal reasons.

  Project performance risks are perceived to be higher in SFM forestry projects because of the greater complexity of the operations. However,

many of these risks could potentially be underwritten by the private sector. The ability to ensure forestry carbon offsets is an example of such insurance. There is potential for at least some of the project risks to be underwritten by the private sector. Private sector underwriting of these activities is dependant on the implementation of best practice management, which has subsidiary benefits.

Box 3. GMO Brazil Sustainable Forest Fund

GMO Renewable Resources (GMO RR) is an example of an existing TIMO that has developed a capability for developing and funding SFM projects.

GMO RR is the forestry investment arm of Grantham Mayo Van Otterlloo Co., a Boston-based investment manager. GMO RR has natural forest assets in the US and plantation assets in New Zealand and Australia.

GMO is the first US-based TIMO to offer a fund specifically for investing in SFM in the tropics (the GMO Brazil Sustainable Forest Fund. Currently, the core asset held in the fund is a 85% stake in Gethal Amazonas, a Brazilian forestry company in the state of Amazonas. Gethal owns 150 000 ha of forests in Brazil, a forest management organisation and a veneer mill. Its forestry operation is FSC-certified. The fund is budgeted to deliver compound annual returns of 25%-30% after the payment of local taxes and management fees. The Fund has a 7-year life, with potential for an extension of a further 3 years. Total capitalisation is US$ 15m, of which US$10 m had been raised by a closing in December 1999. The remaining US$ 5m will be raised in a second offering in late 2000/early 2001.

The fund represents an example of a partnership between the private and the public sectors. GMO has cooperated with Banco Axial (a Brazilian environmental investment bank) and UNDP in developing the funding required for the project. GMO is providing the capital for the project, including acquisition of the enterprise and a capital investment program to ensure sustainability and improve production and returns.

The project is interesting for a number of reasons. Firstly, it is an example of a successful mix of public and private institutions. Secondly, it mixes forestry and processing assets. While this has been traditional with industrial forestry companies, it goes against the trend of separating processing and forest assets that is occurring in many parts of the world.

In order to develop the fund, GMO RR has had to develop a small project development and investment banking team in house. This gives them a unique capacity to develop SFM projects for inclusion in funds. They have also invested in a small boutique SFM investment bank in Brazil to help develop a project flow in the country, A2R, which is an offspring of Banco Axial.

What drove GMO to develop this capability? Firstly, it required a personal commitment on the part of senior management in the organisation. This was based on a personal commitment to the sustainable management of tropical forests and a view that it could provide competitive returns in the longer term. It also represents a belief that Brazil's forests are undervalued, and that increased investment will lead to asset appreciation, as it did for US timberlands.

- Natural Disasters. One common risk in any natural resource project is the risk of natural disasters. In some countries some natural disasters can be insured against (for instance, fire in Australia). There is scope for the development of innovative private and public underwriting of natural disaster risks.

- Financial Risks. Financial risks include risks such as non-payment by debtors, currency risks and the risk of uninsured losses.

  Any business is subject to financial risks, and there are several well established methods of mitigating these risks. They range from insurance through to the use of derivative products to create financial hedges. Where particular aspects of SFM present unusual financial risks, there should be scope for developing innovative risk mitigation products to deal with those risks. The private sector could be expected to play a leading role in these developments.

- Contractual Risks. Contractual risks relate to the disputes that may arise under any of the contractual arrangements that surround a project. In the case of SFM projects, the increased number of parties to the development may lead to increased risks of contractual disputes occurring. Careful management of contract development, including the inclusion of dispute resolution mechanisms, is the best way of mitigating these risks.

- Market risks. Timber markets are cyclical, and as such represent a potential risk factor. These risks can be managed through a variety of means, including the use of financial hedges and forward selling arrangements. . . . .

In addition, SFM projects rely on markets for non timber forest products and services for a significant percentage of their revenues. These markets are often in the early stages of development, and represent a high level of risk. The potentially significant market for carbon offsets is a good example of this.

The core business of TIMOs, creating pooled funds to invest in a variety of assets is in itself a key risk mitigation strategy. . . . . .

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Chapter 9.3

Assessing the Feasibility and Operationalisation of an Investment Promotion Entity for Sustainable Forest Management: Demand and Supply Aspects

Jyrki Salmi,
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Important: Editor's Note on Presentation of Text Extracts from the Original Paper

This chapter consists of the editors' private sector relevant extracts from the original full-length paper prepared for the Oslo Workshop. In selecting what to extract, the Editors have focused on material that presents information on the nature, magnitude, trends and issues regarding private sector engagement in SFM. This information was assembled by the authors to provide background and context for their analysis of feasibility of the proposed Investment Promotion Entity (IPE). All other material, particularly that on the proposed IPE itself that was the main purpose of the full paper, has been excluded. Working on a selective basis, it is not possible to seek or expect good flow; the information extracted should be taken on its own merits as it stands. As a way to show that a piece of text was, in the full original paper, preceded by other information, the editors have used dotted lines [. . . . . XXXX] and to show that a piece of text was, in the full original paper, followed by other information, they use [XXXX . . . . .]. Connecting words added for readability have been square bracketed, e.g [XXXXX]

EXECUTIVE SUMMARY

The present paper . . . . [has a] . . . . focus on demand and supply . . . . [of funding for sustainable forest management (SFM)]. Demand is here understood as demand for financing and related services by managers/owners of forest land who wish to introduce SFM or carry out different types of SFM related projects in their forestlands. The supply side is considered here as the supply of funds/investment capital by various types of investors and/or providers of grant financing for SFM purposes.

. . . . . A rough estimate of the volume of the demand for SFM investments in developing countries could be in the order of US$15 billion per year with a growing trend. . . . . The potential sources of financing can be divided into (i) private sector with portfolio investors and direct investors, and (ii) public sector. It is estimated that the supply of SFM financing from external sources to developing countries has been clearly less than US$8 billion per year; some estimates putting it as low as US$1 to 2 billion per year. . . . . .

RECENT DEVELOPMENTS AT INTERNATIONAL LEVEL AND THEIR IMPLICATIONS FOR NEW ARRANGEMENTS IN FORESTRY FINANCING

The major trend in forest sector development has been the ***privatisation*** of forest management and respective downstream processing in many countries where forestry was previously predominantly a public sector activity. Privatisation has proceeded using various strategies and means recognising that private sector is more efficient in productive activities than the public sector (Indufor 2000; Landell-Mills and Ford 1999).

The privatisation process has major implications for forest sector financing and investments which are becoming increasingly dependent on private sector interests and consequently, the role of the public sector is focusing more and more on policy and normative issues, attempting to strike the balance between creating an attractive business environment for the private sector, and maintaining an adequate regulatory framework in order to achieve national development goals, including safeguarding the environmental and social benefits of forests. Traditional public sector loan projects will play a declining but still critical role in the forest sector of developing countries. The privatisation trend has had a major impact on forest sector financing where the role of private sector investments has gradually grown compared with public sector investments. . . . . .

. . . . . The global ***pulp and paper industry*** has been relatively fragmented which has resulted in wide cyclical changes and limited capacity to promote the sector's interests in international and national policy fora. In the 1990s, the global paper industry started a rapid process of consolidation and concentration which is expected to continue for at least the next decade. At the same time, the competition for raw

material resources and access to suitable lands has intensified as the fibre strategies of large corporations are now global. There will be a major shift in emphasis of new investment in production capacity from the traditional producing countries to the South where expansions will be based on plantation wood.

Another trend is to separate forestland assets from those of industrial processing due to their lower apparent yields. This has already lead to the emergence of specialised enterprises for the financing and managing of forestlands, so called ***timberland investment and management organisations*** (TIMOs) (cf. Kohn and Moura Costa 2000). Some of these groups are also involved in investments in natural forests.

DEMAND ASSESSMENT

. . . . . Demand volume . . . . . .

. . . . . Moura Costa *et al.* (1999) quoted figures ranging from US$11.2 billion to US$70 billion per year. Some respondents to the Internet interview put the figure at US$15 billion in the developing world alone. . . . . The larger figures assume the resolution of outstanding issues around the role of forests as carbon sinks. One observer quoted some national-level figures for SFM implementation in natural forests, including the examples of successful application of fiscal transfers to forest owners in Costa Rica with an annual inflow around US$22 million, and the 'Plan Verde' in Colombia with US$207 millions over a four-year period. These figures include only the public sector subsidy and not the private sector's own contribution.

According to the latest statistics on foreign direct investment (FDI), the FDI inflows into wood and wood products manufacturing in all the developing countries was US$6.2 billion in 1997 (United Nations 1999) but this is a gross underestimate due to limited geographical coverage of the UN data. The FDI stock in the same sector in all the developing countries in 1997 was USD32.7 billion. Disaggregated data on forestry (not to mention SFM) are not available as they are grouped together with agriculture, hunting and fishing. . . . . .

Driving forces for SFM finance demand

Forest management is a multipurpose activity, which is aimed at producing a desired set of forest products and services, both material and non-material, as demanded by markets. The concept of sustainable forest management guides management practices to ensure that the economic, ecological and social values of forests are maintained. The ultimate definition of SFM depends on the present values of society, which are defined through political processes. As these values change over time, the operational meaning of SFM would also change. However, the economic principle of sustainability will remain the main concern for forest owners and managers. Therefore, SFM activities

must produce, at least, as many benefits as costs incurred over the long term. This means that SFM must be profitable in order to be continued and competitive.

Unsustainable forestry practices refer to forest management which does not reflect the current values of society, and leads to a long-term decrease in the total value of products and services produced by forests. Forest management, which ignores important forest values, can also generally be considered to conflict with SFM principles. The driving force for unsustainable practices is that they are more profitable for private investors in the short run than sustainable management which, in the initial stage, tends to require transitory investment through expenditure or foregone short-term benefit.

There is little comprehensive information on the profitability of SFM and most of the recent studies have focused on the issue of sustainable timber management *vis-à-vis* unsustainable forestry practices. Pearce *et al.* (1999) compiled a useful summary of these studies which leads to the following main conclusions: (a) conventional and often unsustainable logging tends to be financially much more attractive for private investors than sustainable timber management by factors 1.5 to 4; and (b) returns to unsustainable logging are high in the short term but tend to disappear, while sustainable timber management provides lower returns initially but they are sustained, or may be increased through time.

The trouble with the multipurpose nature of SFM is that it makes any quantitative analysis complicated and location-specific. Furthermore, the invisible hand of the market has not been very successful in turning multiple use forestry into a sustainable and profitable venture. . . . . .

. . . . . Conducive macro-economic environment coupled with appropriate financial incentives have proven to be effective means for mobilising substantial forest sector investments. According to Raga Castellanos (2001), the government incentives of some US$150 million have resulted in private sector investments of more than US$4 000 million in Chile since 1974. The share of the Chilean government has been only 3.6% of the overall investment volume. . . . . .

Barriers [to] . . . meeting the demand

The barriers to meeting the demand, which can be also called barriers to supply, for financing in developing countries can be derived from poor planning and implementation capacity at all the levels (entrepreneurial/management capacity of the private sector, organisational capacity of the public sector, and country capacity in general).

In many countries, national policies, legislation and other rules are restrictive rather than supportive of SFM, resulting in an unattractive investment climate. As an example, Bentley (1999) provides an excellent overview of legal issues and bottlenecks hindering FDI, and economic development in general, in Vietnam (Box 1).

Box 1. Policy and Macro-economic barriers to investments in Vietnam

The fundamental elements of a market-oriented legal framework which are not presently in place in Vietnam include: (i) a clear and complete definition of property and property rights and the means to exercise them, (ii) a clear and complete system of rules for making contracts, and (iii) courts and other government supported mechanisms providing for the speedy and effective enforcement of legal rights, including contract and property rights, and settlement of disputes. The main bottlenecks for FDI in the current Vietnamese legislation include, among others:

- Out-dated and unnecessarily restrictive Companies Law placing several stumbling blocks on the market entry and establishment of companies.
- Non-existence of modern National Enterprise Register.
- Overly complex and excessive income tax (both for foreigners and national), as well as company taxes.
- Overly restrictive and discretionary land ownership/land tenure legislation.
- Outdated and non-functional credit legislation with serious difficulties in securing adequate but flexible collateral (pledges and mortgages).
- Outdated banking and financial legislation which does not encourage savings (deposit insurance and bank secrecy laws utterly inadequate), capital formation, productive credit, and efficient financial transactions.
- Non-existence of adequate securities and stock legislation, and respective national markets which in all industrialised countries form the back-bone of financial markets for enterprise and business development.
- Unnecessarily restrictive trade controls, causing red tape and delays in both exporting and importing.
- Continuous overvaluation of Dong against foreign currencies, causing continuous shortages in the availability of foreign currency in Vietnam, and un-competitiveness of the Vietnamese export industry.
- Inadequate accounting standards and lacking annual audits by independent auditors, particularly in the state-owned enterprises, including State Forest Enterprises (SFEs) and other forest sector enterprises.

Source: Bentley (1999)

Poor organisational capacity both in the public and private sector is another major barrier. The organisational capacity is often linked with the non-competitive salaries obtainable in developing countries, particularly in the public sector, and resulting brain drain both from the public sector to the private sector and from the respective country to abroad. The best possible staff are simply not available. Education and training are also often poor. Management cultures are sloppy and corruption is common in forest sector organisations in many countries. Weak national forestry

administrations are often only marginal entities in the ministries of agriculture or environment. In some countries forestry is divided between two ministries, weakening the institutional performance further in this sector.

. . . . . Another key barrier to meeting the demand for financing for SFM is the continuing controversy over sustainable timber production and policy decisions are on hold as the 'scientific debate on the matter is still ongoing'. Ljungman *et al.* (1999) have argued that pursuing a consensus definition of SFM should not be used as an excuse for inaction as positive development towards SFM can be achieved by following existing professional standards or best practices. . . . . .

As pointed out by Kohn and Moura Costa (2000), many large institutional international portfolio investors (pension funds, investment funds, etc.) appear to be interested in putting a percentage (which could be several tens of million of dollars by each of such funds) of their overall portfolio into 'green and/or socially responsible'

Box 2. Potential Sources of Capital to the Forest Sector

Private sector:

(a) Portfolio investors
- commercial banks
- investment banks
- mutual funds, including ethical funds/socially responsible investment funds and environmental funds/green funds
- pension funds
- property and casualty insurance companies
- life insurance companies
- venture capital companies
- foundations

(b) Direct investors
- forest industry and forest management companies (international and national)
- other sectoral investors
- large-scale landowners
- general direct investors (e.g., Transnational Cooperations - TNCs)

Public sector:
- international donors
- development banks
- governments

Sources: Moura Costa *et al.* 1999, p. 38 & Ganzi *et al.* 1998

investments. Such investors do not usually have any in-house expertise in SFM, nor they are likely to establish such in-house expertise. These investors could be the most likely target group (as a source for financing) for an IPE type of arrangement.

According to Ganzi *et al.* (1998), the order of importance of international portfolio investors based on the volume of assets that they control is: (1) commercial banks, (2) investment banks, (3) mutual funds, (4) pension funds, (5) property and casualty insurance companies, (6) life insurance companies, (7) venture capital companies, and (8) foundations. These institutions provide either credit or participate in equity investments or both. They balance their investments between the maximisation of expected capital gains (return on investment) and the risk associated with the investment (Box 3).

. . . . . The ten largest forest industry companies in the world are presented in Table 1. A large number of companies are already involved in investment in developing countries. As an example, the Appendix provides information on Latin America and the volumes are also large in Asia while Africa is lagging behind.

Kohn and Moura-Costa (2000) and Gregersen and Contreras-Hermosilla (2001) have presented a good overview on direct investors in the forest sector. Other interesting direct investors could include energy industry (e.g. General Electric, Shell, British Petroleum) and the car industry (e.g. Toyota, Peugeot and Renault) which have already indicated interest in financing SFM forestry projects . . . . . .

Regarding bilateral donors, many [. . . . .] are interested in supporting market-based solutions . . . . In addition, a few donors indicated that they could be interested in considering providing financing for appropriately targeted investment projects (according to their geographical, thematic and political interests), particularly if their feasibility assessment demonstrates adequate impacts reflecting the policies of respective donors (e.g. poverty reduction, environmental benefits, etc.). Furthermore,

Table 1. Top Ten Forest Industry Companies in the World

Company		Turnover in 1999, US$ million
1.	International Paper + Champion Internat.	29 859
2.	Georgia-Pacific + Fort James	24 802
3.	Stora Enso + Consolidated Papers	13 200
4.	Kimberly-Clark	13 005
5.	Weyerhaeuser	12 260
6.	Oji Paper	10 584
7.	UPM-Kymmene + Repap	9 174
8.	Smurfit-Stone Container + St. Laurent	8 065
9.	Nippon Paper	7 955
10.	SCA + Metsä Tissue	7 533

Source: Paperinfo 2000

Box 3. Sources of Financing

Commercial banks provide mainly credit. In 1996 alone, commercial banks extended loans to developing countries worth of US$34 billion. Japanese banks account for the largest volume of outstanding loans to developing countries: US$495 billion in 1996.

Investment banks focus on equity investments, generally on behalf of their clients who need capital. They also invest in profitable projects using their own funds. The total assets of the largest investment bank in the world, Morgan Stanley Dean Witter of the USA, were US$131 billion in 1996.

Mutual funds are entities, set up and operated by an investment management company, to raise capital for investing in financial instruments, including shares. Mutual funds represent now the second largest pool of private capital in the world after the banking industry. In the USA alone there are more than 6 500 mutual funds which manage assets worth almost US$ 4.5 trillion. A few of the funds have specialised in ethical investments or so called Socially Responsible Investments (SRI) which may include e.g. afforestation projects in developing countries. Another group of environmental or green funds is found in the Netherlands where the dividends of such funds to individual investors enjoy tax concessions.

Pension funds are a means for individuals to save for their retirement. The structures and operations of pension funds vary from country to country, and they are generally very highly regulated by legislation. Pension funds represent the third largest global pool of private capital available for lending or investments. In the USA alone they had assets worth of US$4.7 trillion in 1996.

The property (damage to physical assets) and casualty (injury to persons) *insurance industry* is divided into two businesses: underwriting (assuming risks in exchange for a premium) risk and investment management. The insurance companies invest the collected premiums so that they are able to pay out claims in the event of damages or injuries for which they are providing insurance. Globally, the Property and Casualty Insurance Industry control more than US$1.4 trillion in capital. In 1996 in the USA alone the industry collected more than US$250 billion in premiums.

The life insurance industry sells life insurance policies to individuals, and invests the funds derived from the premiums for these policies. Globally the industry controls assets worth of US$2.3 trillion.

Venture capital funds are set up to raise equity capital for investing in enterprises by a group of investors seeking above-average capital gains offset by high risk of loss. Venture capital is typically a source of capital for young and relatively un-known cash-poor or rapidly expanding companies. Global estimates on venture capital are difficult to obtain because venture capital funds are very weakly regulated and controlled. However, one estimate places the global assets of venture capital funds at US$48 billion in 1996. Venture capital funds are rapidly growing industry in themselves.

A *foundation* is a non-profit organisation established to manage a pool of capital and distribute grants for purposes consistent with the mission or philosophy of the organisation. World wide, there are nearly 40 000 foundations. The USA based foundations have collective assets of some US$190 billion, distributing more than US$10 billion in grants in 1996. Foundations invest their capital mainly to maximise the income in order to be able to provide as much grants as possible.

some donors could provide some seed funding (i) to facilitate . . . . . gradual creation of a major portfolio of long-term investments by institutional investors in SFM operations, and (ii) to ensure that such investments (in all their aspects) follow the best practices of SFM.

Public-private partnerships (PPPs) is a generic term for various kinds of joint investment arrangements between public and private sector entities. A specific conference on PPPs was held in South Africa in early December 2000. For example, the volume of PPP projects signed in the UK alone in 1999 and 2000 (up to November 2000) under the government co-ordinated Private Finance Initiative was more than US$ 18 billion (Financial Times, 29 November 2000).

The UK government converted the former projects arm of the Treasury's private finance initiative task force into a PPP called Partnerships UK (PUK) which will be a private sector-led body with 49% ownership by the government. PUK supports the public sector in drawing up PPP deals with private sector. PUK could prove to provide an interesting example and at least useful lessons to be learned . . . . . (see http://www.partnershipsuk.org.uk). . . . . .

Potential supply

The potential supply of financing for SFM projects . . . . . can be estimated from the present or past flows of financing to the forest sector. Statistical data on financial flows to SFM projects proper are not readily available. The most reliable recent estimates put the volume of annual official development assistance (ODA) in the forest sector at US$1.2 billion in 1997 (Joshi 1999, Madhvani 1999). OECD (2000) came up with a clearly smaller figure which is partly explained by missing information from some of the major organisations providing assistance to forestry. Chandrasekharan (1996) estimated the total gross annual investment, including ODA, in the forest sector (including processing) of developing countries to be US$20.4 billion in 1993. . . . . .

United Nations statistics on FDI for 1997 record US$6.2 billion (US$ 720 million only in 1988) of FDI for wood and wood products manufacturing in developing countries (United Nations 1999). In the same source, FDI in forestry is included in the broader category of agriculture, hunting, forestry and fishing, the total value of the category in developing countries being US$1.8 billion for the same year (US$600 million in 1988). The statistics on FDI naturally do not include the domestic investments which were included in the estimate of Chandrasekharan (1996).

Information on portfolio investments in the forest sector in developing countries is not available. Kohn and Moura Costa (2000) provided a rough estimate on the forest assets of US-based portfolio investors (US$16.8 billion). However, most of these assets are located in the USA.

The ODA figures, and definitely the FDI figures, cannot be considered the same as SFM investments. However, one could draw the conclusion that the maximum volume of SFM investment inflows to developing countries, excluding domestic

investments, has been the sum of ODA plus FDI, i.e. estimated at less than US$8 billion.

According to Kohn and Moura-Costa (2000), the timberland investment management organisations (TIMO) managers (including various funds) estimated the potential supply of financing for forest sector (SFM) projects to be from US$1 to 2 billion per year, providing there was the capacity to produce a flow of attractive investment opportunities. Were this needed only for plantation projects, say around 1 000 000 ha would be covered annually.

Several respondents to the internet interview of the present study were of the opinion that the supply of financing will not be a limiting factor for the IPE. . . . . .

Driving forces for SFM finance supply

According to Kohn and Moura Costa (2000), the driving forces for the interest by investors in forestry funds include: (a) greater policy support in the form of tax incentives; (b) greater awareness amongst institutional investors; (c) superior growth rates; (d) potential for land price appreciation as part of the returns; and (e) potential carbon value under the Kyoto Protocol.

The increase in the general and political awareness of the multiple values of forests has led to increasing policy support for investments in SFM and in forest conservation. Tax and other incentives are either targeted directly at forest owners or investors in SFM (e.g., in Costa Rica) or to international investors who channel their funds to specially dedicated mutual funds which in turn could invest in SFM and conservation related projects (e.g., in the Netherlands, the UK, Australia, New Zealand).

Greater awareness of social and environmental responsibility amongst institutional investors has been gradually growing, apparently to a large extent due to the increasing pressure from some of their stakeholders, and partly due to the increasing number of individuals who wish to invest at least some of their savings into socially and environmentally responsible projects. Some of the institutional investors have also recognised the opportunities offered by the forest sector, and specifically SFM. Forest sector investments have produced competitive returns at low risk. Specialised TIMOs have emerged (Kohn and Moura-Costa 2000).

Research and development work in forestry, with special reference to tree improvement, has resulted in significant increases in growth rates of commercial plantation species which have reduced the rotation periods and increased the yields, thus improving the profitability of investments significantly. . . . . .

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APPENDIX

International and Crossborder Investments in Forest Plantations and Forest Industries In Latin America

Country	Investors	Forestry	Industry
Argentina	Arauco (Chile)	X	X
	CMPC (Chile)	X	X
	Smurfit (Ireland)		X
	Kimberly Clark (USA)	X	
	Klabin (Brazil)	X	
	Masisa (Chile)	X	X
	Terranova (Chile)	X	
Brazil	Ahlstrom (Finland)		X
	Arjomari-Prioux (France)		X
	Boise Cascade (USA)		X
	Fletcher (New Zealand)	X	X
	Champion (USA)	X	X
	Masisa (Chile)		X
	Nicolaus Paper GmbH & Co. (Germany)		X
	Peugeot (France)	X	
	Rilisa Int. Trading Co. (Belgium)		X
	Terranova (Chile)	X	X
	Japanese Consortium of 15 companies	X	X
	Riverwood International Corp. (USA)		X
	Sappi (South Africa)	X	X
	Sonoco Products Co. (USA)		X
	Stern Group (Canada)		X
	Stora Enso (Finland/Sweden)	X	
	Westvaco (USA)	X	X
Chile	Attisholz (Switzerland)	X	X
	Boise Cascade (USA)		X
	Fletcher (New Zealand)		X
	Shell (Netherlands)		X
	Simpson Paper (USA)		X
Colombia	International Paper (USA)		X
	Kimberly-Clark (USA)		X
	Smurfit (Ireland)	X	X

Country	Investors	Forestry	Industry
Costa Rica	Kimberly Clark (ex-Scott Paper) (USA)		X
El Salvador	Kimberly-Clark (USA)		X
Guatemala	Simpson Timber Company (USA)	X	
Mexico	Temple Inland (USA)	X	
	Smurfit (Ireland)		X
	Kimberly Clark (USA)	X	X
	Procter & Gamble (USA)		X
	Sonoco Products Co. (USA)		X
Panama	Georgia Pacific Corp. (USA)		X
Peru	Kimberly-Clark (USA)		X
	Krueger (Canada)		X
Uruguay	Shell (UK/Netherlands)	X	
	Weyerhaeuser (USA)	X	
	UPM-Kymmene (Finland)	X	
Venezuela	Smurfit (Ireland)	X	X
	Stone Container (USA)	X	X

Source: Indufor database

Chapter 9.4

Forest Financing in Latin America and the Caribbean: A View from the Inter-American Development Bank

Kari Keipi

Important: Editor's Note on Presentation
of Text Extracts from the Original Paper

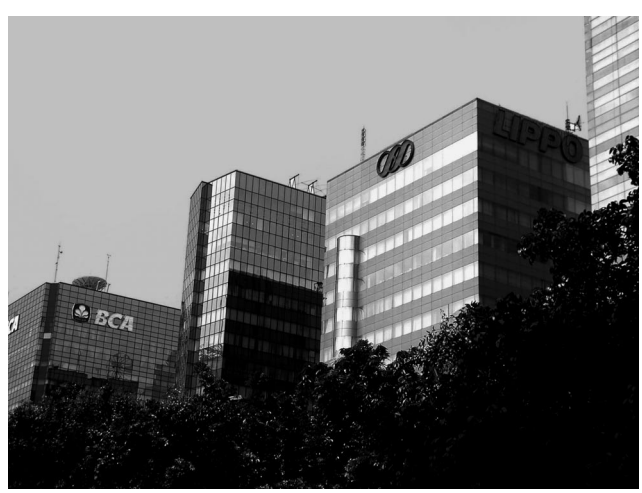
This chapter consists of the Editors' private sector relevant extracts from the original full-length paper prepared for the Oslo Workshop. In selecting what to extract, the Editors have focused on material that presents information on the nature, magnitude, trends and issues regarding private sector engagement in SFM. This information was assembled by the authors to provide background and context for their analysis of feasibility of the proposed Investment Promotion Entity (IPE). All other material, particularly that on the proposed IPE itself that was the main purpose of the full paper, has been excluded. Working on a selective basis, it is not possible to seek or expect good flow; the information extracted should be taken on its own merits as it stands. As a way to show that a piece of text was, in the full original paper, preceded by other information, the editors have used dotted lines [. . . . XXXX} and to show that a piece of text was, in the full original paper, followed by other information, they use [XXXX . . .]. Connecting words added for readability have been square bracketed, e.g., [XXXX]. The author specified in the original paper that the opinions expressed in his document did not necessarily reflect the official position of the IDB.

SUMMARY OF OVERALL PAPER[1]

In a paper that emphasises the need to create an enabling environment for SFM, Keipi begins by identifying factors that affect forestry financing possibilities in Latin America and the Caribbean (LAC). He then explores financial instruments for forest conservation, describes rural credit as a tool with unrealised promise for forest financing and outlines the role of the Inter-American Development Bank (IDB) group in forestry.

Political and macroeconomic stability, access to land and property rights are among the key factors influencing forest financing possibilities in Latin America and the Caribbean; also important are an effective and appropriate regulatory framework, clear forest policies and participatory decision making in implementing policies. The worldwide trend of declining official development aid is occurring in Latin America and the Caribbean, while the role of the private sector is increasing. Keipi believes a major role of external public-sector funding is to foster private-sector financing in the region — not through subsidies, but by contributing to governments' efforts to create a more conducive environment for investment. In the future, Keipi says, private investment should be encouraged not only for SFM in production forests, but also for protected areas, ecotourism development and conservation set-asides.

Keipi notes that creating an enabling environment for investment in developing countries and countries in transition often involves more general challenges of state modernisation, such as decentralising forest institutions, designing and implementing forest policies, and fostering ethics and transparency in governance and business. Improving competitiveness requires a strengthening of infrastructure, financial services and other aspects of the business of forest business development (Keipi sees a role here for investment promotion measures). More directly, Keipi believes that the potentially most powerful source of financial resources for productive forestry is rural credit, and he calls for strengthening its capacity.



Despite the current climate of limited official demand for lending for forestry development, Keipi sees many opportunities for future investment. He asserts that the low demand is in large part the result of a lack of knowledge about available financing opportunities among ministries of finance and national planning agencies, and calls for promoting greater awareness among these audiences. Another group to target if investments are to increase is commercial banks and rural credit institutions, which need to better understand the potential profitability and risks of forestry investment and its competitiveness in relation to other sectors. Keipi believes that in promoting greater investment in forestry to these and other groups, increased attention should be given to the possibility of creating markets not only for traditional timber products but also for non-wood products and environmental products and services.

INTRODUCTION: FOREST POLICY AFFECTING INVESTMENTS

. . . . . Public and private benefits

Forestry can be a very profitable business in Latin America. The increasing flows of international investments in the forestry sector of the region indicate this. In looking at the profit issue, the question of time horizon is of the utmost importance in promoting sustainable forest management. The time frames for sustainable forest practices are often longer than for other types of investments, and affect their relative profitability compared with other land uses. Yet the returns on this type of investment accrue much more broadly than solely to the private investor's pocket book. The returns also accumulate in the form of ecological and environmental benefits to local, regional and global societies.

When forestry generates positive externalities, the investors may end up paying for benefits that accrue to a free-riding society. Thus, as it sometimes stands now, investors may face relatively low financial returns compared with other investments because of the longer investment periods, and have to maintain a certain degree of altruism as they watch a portion of those returns go to society. Therefore, even though LAC forests are a threatened and valuable resource, their wise use and conservation is not only a private sector priority. It should also be a priority for the area's governments to create an economic and financial climate that is favourable for private investment in forestry. In certain cases with very high externalities but marginal private profitability, government plans for compensating the providers of environmental services may be justified when considering the benefits they provide to society. . . . . .

Improving policies for increased investments

While forest lands produce ecological and economic benefits on a global scale, the lands are subject to laws of the countries where they exist. Therefore, domestic policies and practices are of prime importance in optimising forest use. International support

will be effective only if it does not conflict with local interests. Specifically, national governments need to be cautious when creating policies that may promote settlement in forested areas, or encourage indiscriminate forest conversion for agricultural development, or open up new areas to unregulated resource extraction.

Public policy in much of Latin America has been moving toward deregulation in all areas, including forest management, utilisation, and trade. The choice is between public management of forests, which in principle should protect non-market values, but lacks the institutional capacity to do so; and private ownership, which is effective for management but deficient in defending public interests. The recent democratisation process has established dialogue among various sectors of civil society and encouraged the consensus-building that is essential for sustainable forestry. As a result, coalitions have been formed between rural inhabitants and the private sector. In response to a growing trend towards privatisation, a system of market-based incentives and regulatory mechanisms should be strengthened to facilitate responsible management and conservation of forests.

What conditions are needed to attract investments in sustainable forestry? They include political and macroeconomic stability, access to land and secure property rights, an effective and appropriate regulatory framework, a clear forest policy (defined in consultation with stakeholders), and participatory decision-making processes in policy execution. Multilateral and bilateral lending and development institutions can promote investment by improving the fiscal environment and reducing the uncertainties associated with investment and financing by the private sector.

. . . . . Private investment should be encouraged not only for production forests, but also for protected areas, ecotourism development, and conservation set-asides. . . . . .

Financing needs

According to estimates of Indufor (2000) the overall financing potential in the forest sector of the region is of the order of US$88.2 billion in the period 1998-2010, or US$6.8 billion per year. Of this total, about 72% (US$63.7 billion) would be in the industrial forestry sector, including production facilities and additional industrial plantations for raw material procurement. The cost of the management of natural forests (including protected areas) accounts for 28% of the total sectoral investments amounting to US$4.6 billion in 1998-2010 or US$1.9 billion annually.

The previous estimates do not cover all the forestry activities. No comprehensive estimates are available on the respective investment requirements in the various fields of social and environmental forestry. . . . .

Tax reform

. . . . . Several Latin American countries have used tax credits to stimulate reforestation. For example, in Costa Rica the government has instituted a transferable tax credit (Panayotou 1994). This credit applies to landowners who keep forests on their lands or plant native species. Because the credit tends to benefit wealthy landowners with large tax burdens, the system allows small landholders that reforest or plant native species to sell their credits to those with higher tax burdens.

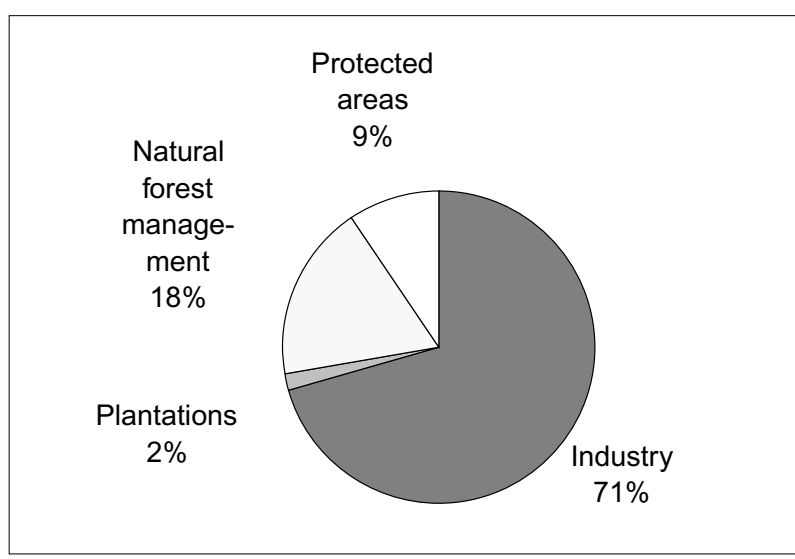
. . . . . Correcting negative externalities

Environmental fines and tradable permits

In Brazil, the new National Environmental Law has set up a mechanism whereby the National Environmental Fund (FNMA) gets a portion of the environmental fines collected in the country. By ensuring that the revenue generated by pollution fines is used to finance projects that help conserve the environment, fines can yield a double benefit for biodiversity conservation.

Tradable permits differ from fines in that they set an upper limit on a certain activity and use the market to achieve the environmental objective in the most efficient way possible. Permit systems tend to reduce compliance costs considerably and can

Figure 1. Forest Financing Needs in Latin America and the Caribbean 1998-2010 (US$88.2 billion)



often be more effective at reducing pollution than more command-and-control mechanisms (though this only applies when pollution legislation is effectively enforced). Additionally, if permits are initially auctioned off to polluters, they can raise a modest amount of revenue that can be used to protect the environment. Likewise, fining overpolluters can serve as a source of income for the public sector. Pollution permit income could be used, for example, for urban greening investments in big cities in the region. . . . . .

Combination of instruments

[There are promising developments with many instruments detailed in the original paper. Combinations of them may prove necessary of which the following gives an example]. The government of Costa Rica created the National Forestry Office and the National Forestry Fund (FONAFIFO) on the basis of the Forestry Law of 1996. The role of FONAFIFO is to compensate forest owners and managers for reforestation and for activities that help protect native forests. Financing for FONAFIFO comes from a variety of sources:

- a tax on gasoline,
- a tax on wood products,
- the issue of 'forestry bonds',
- pollution and other environmental fines, and other revenues coming into the Ministry of Energy and the Environment.

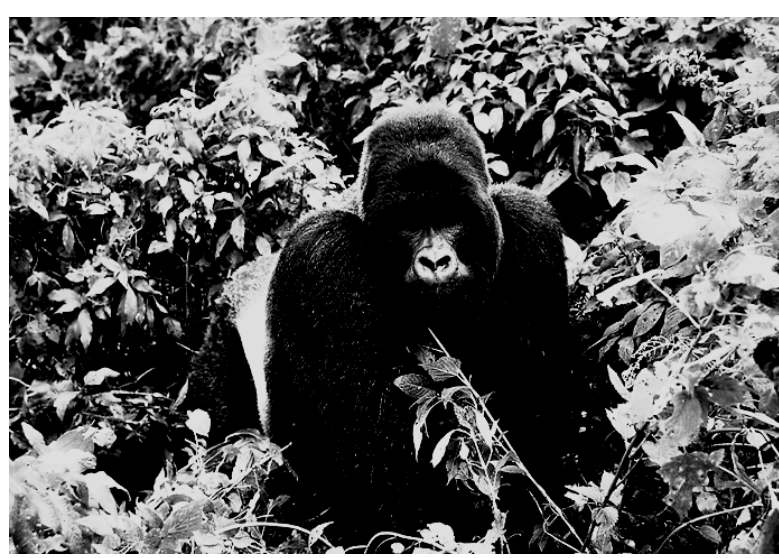
Additionally, there is the possibility that FONAFIFO will obtain money through the sale of watershed services, ... sale of carbon sequestration credits . . . . . FONAFIFO can use its funds to pay private landholders for reforestation (current payment is $492 per ha forest management $329 per ha, and forest protection, ($49 per ha).The program to provide compensation for the environmental services provided by forests started making payments in 1997; the demand has been strong and resulted in disbursements of $14 million in 1997 for a total of 79 000 ha of forest protection, 10 000 hectares of forest management and 6 500 ha of reforestation. An application backlog exists of about of 70 000 ha. As a result, clear prioritisation guidelines need to be developed (Chomitz *et al.* 1998; Echavarria 1999; UNDP 1998). . . . . .

Forest conservation as business: the case of venture capital funds

There are many situations where the interests of business and conservation coincide. An increasing number of business leaders now agree that the environment (and its problems) can be looked upon as one of the most important commercial opportunities of the coming decades. The past ten years have seen the creation of companies with missions that are both good for business *and* good for the environment. This suggests that new and innovative financial instruments can be developed which will encourage these developments and further this trend. This will be especially important when it relates to innovative small and medium-sized biodiversity-based enterprises operating in developing countries, because the collective impact of these enterprises on the economy-and on the global environment – is huge.

Of the utmost importance in this context are certification systems (such as in the case of certified timber and certified organic products), which inform consumers about environmentally-friendly products and sometimes allow these products to be sold at a premium. The so-called 'green trade' that certification promotes helps pay for the added cost of sustainable production methods and improves potential investor returns.

A way of addressing the special needs of biodiversity-based businesses is through equity or quasi-equity investments via dedicated venture capital funds or sector investment funds (Asad 1997). Like traditional venture capital funds, these tools are designed to provide capital in return for equity or quasi-equity positions in promising biodiversity-based businesses. While green venture capital funds can be high-risk/high-return operations, they can also serve to provide much needed capital (as well as business expertise) to small, biodiversity-based start-ups. Two examples of recent initiatives designed to use investments in equity or quasi-equity to stimulate the conservation and



sustainable use of biodiversity are the Terra Capital Fund with multiple sources of financing (Box 2) and the EcoEnterprises Fund, both financed partially by the Multilateral Investment Fund (MIF) of the IDB.

These funds are pioneering initiatives designed to experiment with the role that venture capital can play in supporting biodiversity conservation. Depending on their success and profitability, they may help stimulate other such undertakings in the region. The two initiatives are also mutually supporting. Whereas the EcoEnterprises Fund will focus on start-up ventures, which tend to be smaller, riskier and more difficult transactions, Terra Capital will probably end up working with larger projects. This means that projects supported by EcoEnterprises may eventually 'graduate' into support from Terra Capital.

RURAL CREDIT: UNREALISED PROMISE FOR FOREST FINANCING

Credit is the most common funding source for business development in any sector. Forest business should be able to tag to the resources provided by the rural banking system in Latin America and the Caribbean. However, rural credit mechanisms have been plagued with many weaknesses. In the following, some actions are proposed according to the suggestions of the Rural Finance Strategy of the Inter-American Development Bank (IDB 2000).

Current situation

Between 1950 and the early 1990s, Latin America and Caribbean countries relied on a government-driven approach to serve the financial needs of their rural sectors. The design of large targeted and subsidised credit programs, implemented through state-owned specialised agricultural development banks and private commercial financial entities, was the norm. The objective was to improve access to credit for small farmers and thereby spur agricultural sectoral growth, income expansion, and poverty reduction. Despite the substantial efforts and the best of intentions, the results were less than expected. Neither was access to timely credit at reasonable terms by low-income rural customers substantially improved nor were viable financial intermediaries created.

Since the late 1980s and early 1990s, the majority of countries in the region have initiated massive financial sector reform, which has included the liberalisation of interest rates; the liquidation of insolvent blanks and the rehabilitation of others; the liquidation of some insolvent state-owned banks, the reform and conversion of some other entities to second-tier institutions; the improvement of prudential norms and supervision; the reduction of legal reserve requirements; the elimination of targeted credit programs; and the opening of the industry to foreign banks. These changes have resulted in higher investment efficiency, greater banking competition, and a wider offering of financial products and services.

Box 2. The Terra Capital Fund

In late 1998, a consortium made up of the Environmental Enterprises Assistance Fund (EEAF), a Brazilian Bank (Banco Axial) and Sustainable Development Inc. (SDI), working with the World Bank's International Finance Corporation (IFC), announced that they had secured the capital necessary to establish a private, for-profit, environmental venture capital fund for Latin America called the "Terra Capital Fund". The fund obtained money from a variety of sources, private and multilateral (including from the IDB through the MIF, as well as from the Swiss government), in order to invest in small, private businesses that meet a set of environmental criteria for biodiversity funding. In addition, Terra Capital received a US$5 million grant from the GEF.

The fund will invest in mostly small- to medium-sized companies, providing funds for start-up and expansion, anticipating the use of proceeds for restructuring, modernisation, acquisition, new products development and similar activities. Investment must comply with the environmental criteria, established by its Biodiversity Advisory Board. The Fund will make minority investments that range from the equivalent of US$500 000 to a maximum of 15% of the Fund's total committed capital.

Sources: IFC, 1997; Keipi 1999.

Whereas some improvements have been made in urban financial markets, rural financial markets continue to be underdeveloped. There have been may many proposals to establish targeted credit programs for the forestry or agricultural sector in the region. The experience has shown that small-scale borrowers are more sensitive to the non-financial costs of the transaction (processing fees, travel costs, and income lost due to delays in approval and disbursement) than to the financial costs (interest payments). For forestry normal rural loan periods are too short. Forest lands have not been accepted as a guarantee while such a mobile resource as cattle has been used to guarantee credits. GDP declined when comparing the pre- or early reform period of 1990-92 to the late-reform period 1994-96. Based on recent surveys from seven countries, access rates to formal credit continue to be low with the exception of Costa Rica. Excluding Costa Rica's rate of 40%, the average rate was 10.3%, practically all of which was for the agricultural sector. The predominant sources of credit continue to be the informal sector-friends, family, traders/suppliers, and moneylenders. See Wenner forthcoming.

Lessons Learned

The following lessons were mostly extracted from the IDB's lending experience in targeted rural finance through the review of 27 IDB rural finance projects, existing evaluation documents on the topic, and staff interviews See Wenner, forthcoming. The lessons are grouped into four categories, three based on the purpose of the operations and one on implementation experiences.

Targeted, subsidised credit programs for forestry . . . . . should not be promoted.

Targeted but non-subsidised, wholesale credit programs . . . . . play a role in promoting the expansion and deepening of financial services to underserved producers, but their role is limited especially in forestry . . . . . However, for these wholesale credit projects to avoid unintended negative effects, the interest rates charged to final sub-borrowers should be set on market terms, and rates charged to intermediary institutions should be set at levels that do not undermine their deposit mobilisation activity.

Actions to Improve Performance

[The original paper details actions needed to remedy the major problems and outlines the appropriate instrument to achieve the desired ends. The material comes under] . . . . . four . . . [headings] that correspond to (i) lack of access to credit, (ii) limited availability of long term credit (iii) inefficiency of the market and (iv) insufficient financial retail capacity. . . . . .

INTERNATIONAL FINANCING FOR FOREST PRODUCTION

. . . . . Private sector funding

Direct and portfolio investments

Detailed comprehensive statistics on private sector forestry financing in the region are not available. However, there is an increasing amount of scattered information available from various sources (e.g. OAS 1997). *Commercial private sector* flows, both foreign and domestic, are generally divided into direct investments through the supply of capital goods, purchase of land or services, portfolio investments through commercial bank loans or equity funding.

Non-commercial private sector flows tend to be implicit investments in the form of labour, equipment, and or technical or assistance. At the international level, financial resources are mobilised mostly through grants or concessionary financing by the NGO community and philanthrophists (Best and Jenkins 1999).

Foreign direct investment (FDI) is less volatile than portfolio investment and it tends to have a long-term time horizon as regards returns. It, together with non-commercial private sector investment is also attractive as it does not require fixed repayment, and does not contribute to debt burdens (Gentry 1998). According to UNCTAD (1999) the FDI flows from five OECD countries only to the wood and wood products sector in the LAC region were estimated at about US$ 240 million in 1998 excluding some important investors in the sector (the Nordic countries, Malaysia, New Zealand and the Republic of South Africa). In addition, the intra-regional

investments are not included which are significant in the region. Therefore, the actual level is likely to be much higher, probably in the range of US$500 million. In view of the region's forest resource potential and economic growth prospects, FDI is likely to increase in the medium term.

Logging concessions

Traditionally, international forestry investments were mainly related to logging concessions in natural forests. Such timber concessions can, if properly managed and supervised, contribute to the development of domestic forest sector, too. However, often large timber concessions have been criticised for being cut-and-run operations. Table 3 provides information on some transnational logging companies with major concessions in Latin America. The prominence of Malaysian companies is striking.

Plantations and industrial investment

. . . . . the available information on international and cross-border investors in forest plantations and forest industries in Latin America, which suggests a heavy concentration on Brazil, Argentina, Mexico and Chile [see Apendix to Chapter 9.3: '*International and crossborder investments in forest plantations and forest industries in Latin America*']. Foreign investors are mainly multinational companies in the pulp, paper and timber business which invest in the LAC region within their raw material or marketing strategies; this is undoubtedly the largest group. Some new players have recently come to the picture: (a) timberland investors which are specialised in investments in forest plantation projects worldwide drawing their resources mainly from institutional investors, and (b) environmental investors who seek projects in SFM, carbon sequestration, etc.

Less information is available on foreign portfolio investment in the Latin American forestry sector but it has obviously increased its role in forestry and forest-based industries as in other sectors. International capital markets have started to recognise the potential offered by, and the specific characteristics of, forestry investments (particularly fast-growing plantations). Well-informed investors rightly perceive many such investments as relatively low-risk long-term opportunities, with positive real rates of return that complement traditional portfolios (FORM 1999). However, there is a pressing need to educate the international capital markets on the specific requirements of sustainable forestry, and new funding instruments are needed to lower the overall risks on forest sector investments (Crossley *et al.* 1996).

As a result of the privatisation processes in the region, there is a rapid shift in the flows from the public to private sector as part of the broader privatisation processes in forest resource management and utilisation. As part of this trend, the role of public sector international funding has been declining. It tends to be scattered through a large number of small projects with potential for addressing the forestry problems on

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

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

* exploratory lease; ** proposed; *** includes exploratory lease

Source: Sugal and Mittermeier 1999

a required scale. However, the potential for leveraging private sector investment through this type of public funding is apparently far from being utilised (Gentry 1998; Best and Jenkins 1999). This is when the IDB and other international funding agencies may have an important role to promote the mobilisation of private sector resources.

. . . . . Inducing demand for forest financing

The problem of limited demand for lending to forestry does not lie among the national authorities which have been entrusted with the responsibility for the conservation and utilisation of forests. The bottleneck is the lack of awareness and understanding of the opportunities offered by forests in the sustainable development of nations among decision makers in the ministries of finance, national planning agencies, and national financial institutions, etc. [In the original paper, a number of] lines of action have been proposed in order to facilitate public sector interest by the Latin America and Caribbean countries, [which focus on creating an enabling environment for investment and operations. In addition,] the following proposals for action are made in the area of cooperation with the private sector and promotion of private investments in forest-based activities:

- Assistance to governments to create enabling conditions for private sector investment in forestry; they would include regulation combined with appropriate incentives (linked with socio-environmental externalities provided by the investments).

- Support through technical assistance to private sector organisations in forestry and forest industry.

- Support private sector co-operation and business development through the organisation of business meetings and workshop involving potential investors and foreign buyers of forest products.

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

- Monitor the future work related to the development of investment promotion facilities/entities targeted to sustainable forestry at international and country levels and assess the feasibility of such instruments as part of the Bank-supported activities.

The key measures to induce private sector investments in forestry are related to the reduction of barriers to sustainable forestry due to inadequate policy framework or operational constraints (markets, skilled labour force, information on production potential, participation of stakeholders, etc.). National policies and legislation need to provide internationally competitive and conducive business environment. In particular, secure land tenure is fundamental but reduction of unnecessary regulations and bureaucracy (licenses and permits), and tax reforms are also important issues in many countries of the region. However, a conducive business environment does not mean *laissez-faire*. Adequate forest management standards need to be in place and enforced to ensure sustainability.

The forest sector's capability for self-financing is significant, but the potential is far from being reached due to the under-valuation of forest resources. Underlying policy and market failures should be corrected. Private sector operations can range from timber production to non-timber forest products, ecotourism, and production of various services (such as watershed protection). Emerging new financing instruments have unexplored potential. These instruments are aimed at increasing the trade of both global and local environmental services offered by forests. The role of the private sector should be enhanced, as public sector funding is falling short of the financing needs of forestry development and conservation.

ENDNOTES

[1] Chipeta, M.E. and Joshi, M. 2001. Financing Sustainable Forest Management. Report of the International Workshop of Experts. 22-25 January 2001, Oslo, Norway. CIFOR, Indonesia. Quoted from pp 61-62. Available also on www.cifor.cgiar.org.fsfm

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Chapter 10

Investing in the Future: The Private Sector and Sustainable Forest Management

Hans Gregersen
and Arnoldo Contreras-Hermosilla

EXECUTIVE SUMMARY

The paper addresses the following questions related to expanded private investment in sustainable forest management (SFM): (i) What is the nature and magnitude of private investment in forest management and utilisation? (ii) What is SFM and where and why do we need expanded private investment in SFM in the future? (iii) Why are the needed levels of investment not taking place spontaneously? What are the constraints - the market, policy and other institutional failures that need to be corrected? (iv) What are the most appropriate policy mechanisms to use to overcome the constraints?

Nature and magnitude of private investment in forestry

Many types of private investment are relevant to the present discussion; and a number of distinctions between types are important, including that between: (i) foreign investment by large multinationals and investment by local companies in local situations; (ii) highly regulated companies, often from developed countries, and companies that invest with much less regulation and concern for international public images; (iii) direct investment and portfolio investment; (iv) individual private investment, e.g., in SFM related conservation activities by philanthropists and community investment in SFM; and (v) corporate and joint investment vehicles, such as public-private partnerships.

The challenge of getting more private resources into SFM will be met only if we look at broader combinations of private and public capital flows into various types of sustainable forestry and forest-based activities; we need to take a landscape or macro view of SFM requirements.

Few reliable numbers exist on the aggregate private investment in the forest sector of developing countries. We do know that all types of private investment in developing countries has been increasing rather rapidly over the past decade (with some very recent slowing in the rate of investment), while official development assistance (ODA) has been declining. Total direct private investment rose from US$30 000 million in 1992 to US$118 000 million in 1998 and then down to an estimated US$ 98 000 million in 1999. More significant is the fact that in 1992 private direct investment accounted for only some 19 % of total net resource flows from OECD/DAC countries and multilaterals, while it had reached more than 50 % by 1999. What portion of this investment goes into forestry is not known. We do know that capital flows to the forest-based sector in developing countries are in the billions of dollars. Beyond the above, we have a few reliable case studies from countries, but little information on aggregate private investment in forest-based activities and particularly in SFM.

From the perspective of this paper, which deals specifically with SFM, it is the quality as much as the quantity of investment in forest management that is of key interest. The quality issue has been influenced by globalisation and privatisation trends in the world, which have acquired great dynamism during the last two decades. Together with the proliferation of structural adjustment programmes they have drastically shifted the role of government, with the private sector becoming relatively much more important.

The quality of forest management investment is a relative concept that depends on the context and the socially acceptable norms of economic and environmental sustainability. Some of the past, and even some of the new investment in the forest based sector is promoting unsustainable forestry and forest utilisation and is contaminating the government apparatus with illegal acts and corruption, all of which can lead to social hardship and disruption. Increased quantities of such investment are not wanted by most civil societies. Fortunately, much of the private investment flowing into forestry appears to be following either imposed or voluntary 'codes of conduct.' This type of investment is desirable and the challenge is how to maximise its flow to the forestry-based sector, while minimising the flows into unsustainable forestry activities and corrupt practices.

What is SFM; and where and why do we need expanded private investment in SFM?

In the past, SFM would have been considered in most countries in the context of the sustainability of timber supplies. Sustained yield timber management as SFM has been replaced by a broader concept of SFM. In the words of the President of Finland:

> 'based on the definitions and the general criteria of sustainable forest management at the European level, the following principles were agreed upon in Helsinki in 1993:

- *Forest resources should be maintained and enhanced for the health and vitality of forest ecosystems as well as for the global carbon balance;*

- *Forests should be tended for the biological diversity of forest ecosystems and to advance the socio-economic functions and conditions of forests; and*

- *Wood and non-wood productive functions of forests should be encouraged.'*

This broad concept of SFM has significant implications in terms of developing an operational definition of what the real aim is in getting more private investment into it. In particular, it implies that societies want the private sector (industry, individuals and other combinations of private capital) to be concerned with and invest in socially desirable outputs that currently are not traded in markets and in some cases cannot even be valued adequately in economic terms.

An important distinction exists between concepts of sustainability at the micro (forest stand) and macro (watershed or landscape) levels. At the extreme micro level, every forest stand has to be managed for sustainable production of all forest goods and services. At the extreme macro level, the concept refers to sustainability of the overall public and private forest estate of a state or country, where one output might dominate in one area and others in other areas. In fact, in most countries, we are dealing in practice with a point on the continuum between the two extremes.

In the case of market-based outputs, such as wood products, discussion tends to focus on corporate responsibility for practising SFM and seldom on societal and consumer willingness to pay a premium through the market to cover the additional

costs associated with SFM meeting the broad conditions outlined above. The question remains as to the extent to which the average consumer is willing to pay higher prices.

With regard to the amount of new private investment required to ensure global SFM, various estimates suggest that this amount is in the order of tens of billions of dollars per year. For the purposes of this discussion detailed aggregate estimates of investment needs should not be of much concern, since we know that the needs likely are orders of magnitude greater than will be forthcoming under even the most optimistic scenarios. Thus, the focus should be on the right path to take in promoting future private investment. If the path is right and the investment environment is favourable in the eyes of private investors, then more private resources will flow into SFM. The most important consideration in moving ahead is that private investors will pick up all or part of the tab only if the additional commercial benefits of SFM surpass or are at least equal to those of unsustainable practices or if they are required by law to do so and they have no alternative better investments.

Why is the private sector not investing spontaneously? What are the constraints?

Under current market conditions in most developing countries, the profitability of SFM as defined above is not as high as that associated with unsustainable forest utilisation options, or investing in other sectors[1]. Simply put, 'SFM does not pay' for the private investor. This finding is now recognised widely.

Nevertheless, the sustainable management of these countries' forests is still desirable from a societal perspective. How does this discrepancy between the wishes of society and those of private entrepreneurs arise?

Given a stable and attractive enabling environment, the basic constraints on private investment can be traced back to market failures of various kinds. Imperfect markets or lack of markets can lead to socially 'sub-optimum' levels of private investment, or to investment in unsustainable forest management and timber mining as opposed to SFM. The market's inability to generate socially desirable outcomes in private forest management happens mainly because of:

- **Lack of markets or imperfect markets:** some of the goods and services associated with SFM are not traded in markets and thus provide no revenue to the private producer, unless payments are made by government; and

- **Higher costs and lower risk adjusted profits associated with SFM:** often the costs associated with producing market-based outputs through SFM (including the transaction costs for certification) are higher than for the same outputs from unsustainable forest management, but compensation in the market place through consumer demand is not high enough yet to

> make the additional costs attractive on a voluntary basis to most producers. Adequate consumer willingness to pay (wtp) for 'green' or certified forest products (CFP) has yet to show up in a widespread fashion in consumer markets. Furthermore, because of the generally longer time periods involved in SFM than in unsustainable extraction, risks can be considerably higher. Both can lead to lower risk adjusted profits.

SFM can produce a number of benefits – biodiversity protection, carbon storage, scenic beauty, watershed protection – that are of interest to society at large, but that are not traded in markets and thus generally are not of interest in commercial operations. In short, markets fail to account for these benefits that can derive from SFM, even though the benefits are very real. Private production becomes sub-optimal from the point of view of society.[2]

Frequently, the distortions against SFM created by missing or imperfect markets are compounded by mistaken government policies. There are many ways in which they can easily result in a reduction in the effectiveness and efficiency of the underlying market mechanisms that determine investment in SFM. For example, governments may subsidise agricultural expansion, and this may result in increased displacement of natural forest with higher value from a SFM perspective. In other cases, it is a simple lack of social infrastructure such as transportation, communication, information flows and backup support services that lead to higher costs and sub-optimum operation of the private sector.

Further, since many of the forest resources in the developing world are publicly owned and mostly isolated from public scrutiny (at least until recently), there is ample opportunity for illegal activities that contribute to unsustainable forest management. . For a given entrepreneur, an environment in which law enforcement is weak can increase risk significantly.

Finally, social infrastructure provided by government in the form of clear property rights, publicly funded research, education, civil law, systems for settling property rights and other legal disputes is often lacking or inadequate. Again, a weak legal system and lack of adequate backup infrastructure can increase risks and transactions costs for the investor. When considering constraints on socially desirable private investment, the importance of government policies cannot be stressed too much.

How can the constraints be overcome and inducements for more private investment be created?

The United Nations agencies, as well as both the Intergovernmental Forum on Forests (IFF) and the earlier Intergovernmental Panel on Forests (IPF) processes, have been interested for some time in the question of how to overcome the constraints on increased private financing of SFM. Several major workshops were held on the subject of financing, and they all have included the specific topic of private financing. The IPF and IFF processes were concerned with the overall health of the forests of the world and how they could contribute to alleviation of poverty on a sustainable basis. In the

process of those discussions, it became evident to the participants that they needed to be centrally concerned with private investment as a contributing factor in reaching the goals set forth.

As we move into the future, it is evident that a significant evolution and transition is taking place in the financing environments within which the private sector invests in forest management and associated processing and marketing activities. Further, these environments in many cases have become much more heterogeneous than in the past. First, as mentioned before, the mix of recognised and relevant forest outputs – goods and environmental services – has expanded, including in terms of new market based outputs that influence private investment. Ecotourism, biodiversity prospecting, payments for carbon sequestration in forests are examples of some that have moved into limited market situations.

Second, the situations in forest rich and forest poor areas have become even more diverse in terms of investment in the forest-based sector. Private involvement in watershed management forestry and forest reserves have become more important in some countries, while fast growing plantations have entered the picture in a significant fashion in other countries. As highlighted by the Latin American regional papers, private investment in plantation development is likely to be forthcoming in adequate amounts, assuming appropriate stable and consistent government policies.

Third, the distinctions between the large multinational corporations – truly global entities these days – and the small, local forest-based enterprises and investors have become more distinct. We also have seen a rise in large corporations based in the South investing in forest-based activities. Thus, almost all participants in the international trade of forest products — and frequently in logging — in major developing

countries, are transnational corporations. By some estimates, more than 80 % of international forest products trade is conducted by transnational corporations. They often operate under different sets of rules and norms than do the smaller forest-based investors.

Fourth, a whole host of international agreements and consultations has created a web of internationally recognised principles and guidelines to guide and influence forest activities at the national level. Criteria and indicators for SFM are being and have been derived in different geographic regions; international certification of SFM activities and outputs is growing; new multinational quasi-public institutions are evolving and, in general, the world is becoming more interconnected. The role of international agreements and policing of such has not been studied to any extent. In theory, international actions, including by large NGOs should contribute to resolving some of the problems of misguided use of forest resources. In fact, much of the concern throughout the IPF and IFF processes was devoted to the question of the role of international institutions, including various forms of agreements.

Finally, new technologies, including in the information and communication areas, as well as in forest product processing, have changed the nature of the mix of outputs that are sought from forests and the relative profitability of various investments in them.

Within the context of these new investment environments, overcoming the constraints on private investment in SFM will require that the public sector and civil society intervene with new or reinforced laws, more effective regulations, and with changes in the levels and types of incentives provided to private investors. However, one needs to caution that too much intervention in markets, or the wrong interventions can lead to worse problems than no intervention. Some of the dangers of the

intervention failures can be avoided by using a comprehensive approach, one that includes a variety of changes in policies, institutions and public management and control over resources, and based on the input of various stakeholders. The comprehensive approach includes consideration of changes in policies or mechanisms used for other sectors that have perverse effects on the forest-based sector, e.g., the use of agricultural subsidies that encourage deforestation and conversion of land to agriculture.

A number of guiding principles can be considered in developing an appropriate policy framework and set of policy changes for encouraging future private investment in SFM. These include: (i) clarifying the type of change being sought; (ii) distinguishing between types of private investors; (iii) considering investments in SFM in relation to those in post harvest activities; and (iv) developing policy mechanisms that recognise that private commercial companies respond to both regulatory 'push' incentives and market based 'pull' incentives.

Two broad categories of policy actions need to be considered by government and civil society in creating a favourable environment for private investment in SFM. These are:

- Actions that result in a set of laws and regulatory mechanisms that establish a positive investment framework in an environment that protects society's interests while also being attractive to private investors;

- Actions that provide the market incentives for private individuals and firms to invest in SFM rather than unsustainable forest management.

In terms of the first category of actions, an integrated, interwoven set of laws and regulations must be in place to set the basic legal framework for SFM and an appropriate investment environment. In order to have the kind of stable and attractive environment for productive private investment in SFM, countries should have in place appropriate policies related to at least the following: i) distribution of forest land ownership and control among public and private sectors; clear property laws; ii) management objectives and approaches stated in law and regulation for the overall forest estate (including both public and private forests), this includes environmental protection objectives; iii) the levels and types of investment in social infrastructure, including research, training, education, information, and communication needed to move the forest-based sector along on the right track; iv) the mix and form of forest industry development desired and allowed (e.g., related to foreign investment); v) international and domestic market development and trade; and vi) programs in place to support financing of both private and public forestry.

While in theory, a body of laws and regulations dealing with the above should create a desirable environment for investment, we know that in fact of equal or greater importance are the ways in which existing policies are governed and implemented (or not implemented). While the private sector can be as much to blame as governments

for illegal acts and corruption that lead to unsustainable forest management and exploitation, the fact remains that productive, socially responsible investors – and thus those who would practice SFM - stay away from environments in which weak law enforcement is prevalent.

With a positive, stable investment environment in place, policy debates can move to consideration of the role of various forest-specific incentive and regulatory mechanisms in influencing the decisions of private individuals and firms to invest in SFM rather than non-SFM. Various past analyses, including the Croydon and Pretoria workshops, have identified and discussed in detail specific types of incentive mechanisms. These are summarised in the text. The main points to emphasise here are that:

- generally a combination of market related policy mechanisms will be needed and most effective in encouraging private investment in SFM;

- whatever mechanisms are used, there will likely be a need for some public payments to forest investors to cover the costs associated with production of environmental services (these should be treated as payment for services or public investments rather than 'subsidies,' a term that has a negative connotation to many people);

- some of these costs should logically be covered through international mechanisms, since some of the benefits are global environmental services; and

- none of the mechanisms will be successful in attracting private investment if the broader investment policy environment in a country is not stable and perceived to treat investors unfairly and inequitably.

The analysis carried out here, as well as those in the regional papers for this meeting, lead to certain conclusions regarding increased private investment in SFM. Bringing them all together, some suggestions emerge regarding the road ahead from a policy perspective, always keeping in mind a clear understanding of the motivations of private investors and the conditions under which they will invest in SFM. Thus, (1) private investors are motivated by i) commercial profits, ii) the potential to increase market shares; and iii) low levels of risk; and (2) SFM investments generally have: i) higher costs and lower levels of commercial profits than unsustainable forest exploitation, and ii) higher risk (mainly due to long investment periods) than unsustainable options that render a larger and quicker profit through timber mining.

It follows that, if we want to encourage increased focus on private investment in SFM rather than unsustainable FM, then we need to make sure that:

- SFM levels of profitability are high enough and risks low enough to attract such investment; and

- rofitability of unsustainable forest management is reduced and risks increased, in order to discourage it.

Policy interventions to increase the risk-adjusted profitability of SFM

In order to increase the profitability of SFM to levels that attract private investment, we need effective and efficiently managed policy interventions to:

- Establish clear 'rules of the game' and stable policies over time that help to create a positive investment environment.

- Establish clear provisions and conditions regarding changes in the rules of the game.

- Establish clear property rights or usufruct rights and enforce them uniformly.

- Involve local communities and NGOs in SFM and thus reduce conflict with large investors.

- Encourage, possibly through national or state forest laws, adoption of a 'macroscopic' concept of sustainability where specialisation, e.g., in terms of timber production exists along side of protection forests, recreation forests, etc., i.e., a landscape rather than stand level, or 'microscopic' perspective on sustainability; this can help to increase efficiency and profits associated with SFM.

- Increase efficiency of government regulatory functions and activities related to private SFM, rather than making them more complex and costly, something that generally comes back to increase costs even further for the private investor.

- Reduce fiscal or monetary policies that: i) increase costs of SFM, ii) reduce profits.

- Promote payments and transfers for externalities associated with private SFM for which the private investor cannot get remunerated. Examples

include promotion of carbon trades and payments for watershed protection associated with good forest management.

- Help develop and encourage national and international markets for traditional and non-traditional products from sustainably managed forests; ultimately, if widespread investment is to take place, the consumer must be willing to pay for the additional benefits in the market place or through taxes that directly support the non-market outputs associated with SFM.

- If social or environmental considerations are very important, i.e., if the private investor also produces social benefits, consider 'payments for services,' rather than subsidies in the traditional sense of the term (or consider these payments and public investment in the future). They are not welfare payments because of need, but rather legitimate payments for outputs (generally forest environmental services) that are deemed best paid for by society as a whole rather than through forced markets.

- Provide technical assistance, knowledge, and promotion of opportunities, particularly for smaller forest landowners and users who may not understand the intricacies of practising SFM.

- Facilitate financing of private operations (perhaps through preferential credit and credit that takes the oftentimes long time lags into account, insurance programs, tax breaks for good SFM, etc., or provide investment guarantees)

- Promote vertical as well as horizontal integration of operations (not necessarily ownership). For example, downstream operations may be

very profitable. This may justify greater private financial support and involvement in SFM upstream. As another example, integration may make possible the use of a wider range of species, thus making sustainable natural forest management more appealing. Consortia or other forms of joint operations can help to take advantage of economies of scale.

- Encourage investments in plantations that take pressures off natural forests, and discourage through various means development of plantations on lands that currently are in natural forests with environmental values.

Policies and Actions to Reduce Unsustainable Forest Management

At the same time, in order to reduce the attractiveness of unsustainable forest management, policy interventions may be introduced to:

- Eliminate subsidies and other preferential treatment to sectors that compete for land with the forest sector, particularly if there are no compelling social or environmental reasons to keep them.

- Establish firm monitoring and control of illegal operations. Increase the probability of being caught through better surveillance, and impose stiffer penalties for illegal acts.

- Foster third party monitoring and control (e.g., international inspections, etc).

- Combat opportunities for corruption. Make transactions transparent and monitored by an independent party.

- Avoid transportation infrastructure placed near high value forests that also have high environmental value, particularly where land use law enforcement is weak or absent.

- Design administrative systems that avoid negative political interference (including international interference) in the control of the nation's forests.

We emphasise that all these policy interventions are not needed in all cases. Each country or region requires separate strategic, tactical and operational analyses that lead to the most effective and efficient mix of interventions to encourage expanded productive private SFM. There are no general needs that apply everywhere, except perhaps, as also pointed out in the regional papers, the need to create a stable, positive

investment environment with policies that create a level playing field for all potential investors. In such an environment, the door is open for specific policy interventions, as outlined above, that can result in significant increases in private investment in SFM.

INTRODUCTION

The objectives of this paper, as set forth by the organisers of the Oslo meeting, are to discuss the role of the private sector in financing sustainable forest management (SFM) and to recommend proposals for action, or ways and means of increasing the sector's investments in SFM by taking into account political and policy developments both at international and national levels.

In order to provide some logic and coherence to the wide-ranging discussion on private investment, we need to have an overall framework of analysis. This framework needs to address the following questions:

- What is the *nature and magnitude of private investment in forest management* and utilisation? How significant is it now; and how is it changing over time?

- What is SFM; and *where and why do we need expanded private investment in SFM* in the future?

- Why are the needed levels of investment not taking place spontaneously? *What are the constraints* – the market, policy and other institutional failures that need to be corrected?

- *How can we overcome the constraints* and create inducements for private investment? What are the most appropriate policy mechanisms to use?

The rest of the paper is organised around providing answers to these questions.

WHAT IS THE NATURE AND MAGNITUDE OF PRIVATE INVESTMENT IN FOREST MANAGEMENT AND UTILIZATION?

Many types of private investment are relevant to the present discussion; and a number of distinctions between types are important:

- foreign investment by large multinationals and investment by local companies in local situations.

- highly regulated companies, often from developed countries, and companies that invest with much less regulation and concern for international public images.

- direct investment vs. portfolio investment, where the investor provides capital for others to use.

- Individual private investment, e.g., in conservation activities by philanthropists, is yet another type of private investment, as is community investment.

- joint investment vehicles, such as public-private partnerships.

There are many other variations on the above types of private investment. It is beyond the scope of this document to analyze them in detail. The points of importance here are that:

- all types of private investment are relevant to our discussion and objectives – getting more productive private investment into SFM; different types take on prominence in different situations and countries; and

- the challenge of getting more private resources into SFM will be met only if we look at broader combinations of private and public capital flows into various types of sustainable forestry and forest-based activities; we need to take a landscape or macro view of SFM requirements.

The Magnitude of private investment in the forest-based sector

Aggregate private investment in all sectors in developing countries has been increasing rather rapidly over the past decade (with some very recent slowing in the rate of investment), while official development assistance (ODA) has been declining. Overall foreign investment flows to developing countries from OECD/DAC member countries grew rather rapidly over the past decade, but have slowed somewhat recently (OECD 2000). Thus, total direct private investment rose from US$30 000 million in 1992 to US$118 000 million in 1998 and then down to an estimated US$98 000 million in 1999. More significant is the fact that in 1992 private direct investment accounted for only some 19 percent of total net resource flows from OECD/DAC countries and multilaterals, while in 1999 this had reached more than 50 % (OECD 2000).

While relatively good numbers exist on the overall foreign private investment in developing countries, particularly from OECD countries, the sectoral breakdown to the level of forest-based investment does not exist in published form, as pointed out in

earlier workshops organised in support of the IPF/IFF process (*cf*. Croydon and Pretoria workshops, and as supported by the regional papers for this meeting (Chan 2001; Raga Castellanos 2001; Tomaselli 2001; Landrot 2001; Kufakwandi 2001). Similarly, numbers on domestic direct private investment in forestry and related forest-based activities are unavailable on an aggregate basis. Grieg-Gran *et al.* (1999) indicate the same point related to portfolio investment in forest-based activities. Crossley *et al.* (1996), as cited by Greig-Gran, suggest that overall capital flows to the forest-based sector in developing countries is in the billions of dollars. Beyond the above numbers, we have a few reliable case studies from countries, but few numbers available on aggregate private investment in SFM.

Quantity vs. quality of investment

In any case, aggregate quantity of investment is not the key variable, but rather the quality of such investment and the extent to which it is associated with sustainable rather than unsustainable forest management. The quality issue has been influenced by globalisation and privatisation trends in the world, which have acquired great dynamism during the last two decades. Together with the proliferation of structural adjustment programmes these trends have drastically shifted the role of government, with the private sector becoming relatively more important. Depending on the circumstances, expanded benefits in the form of more sustainable forest management, economic growth and social improvement can result. However this will happen only if levels of governance are adequate and the economic incentives induce private sector actors to move in that direction. Improved governance in developing countries requires policies and government structures that would increase not only the levels of private investment but also the level of coincidence between private investment interests and the social goal of achieving more sustainable forest management.

Quality of investment in forest management – in the context of SFM - is a relative concept that depends on the extent to which it conforms to socially acceptable norms for economic and environmental sustainability. Some of the past, and even some of the new investment in the forest based sector is promoting unsustainable forest utilisation and is contaminating the government apparatus with corruption and illegal acts, which in turn can lead to social hardship. Fortunately, much of the private investment flowing into forestry appears to be following either imposed or voluntary 'codes of conduct that meet societal norms for 'good practice.' This type of quality investment is highly desirable and the challenge is how to maximise its flow to the forestry-based sector.

WHAT IS SFM AND WHERE AND WHY DO WE NEED EXPANDED PRIVATE INVESTMENT IN SFM?

What is meant by 'Sustainable Forest Management' (SFM); and where and to what extent does it need to be practised? How much private involvement in SFM is needed? Operational answers are needed to give dimensions to the goal of 'encouraging more private investment in SFM.'

What is SFM?

In the past, SFM was generally considered in the context of the sustainability of timber supplies. In that case, a macro, or country level perspective was adopted, where the concern was with private investment in sustained yield timber management to assure an adequate supply of timber at 'reasonable' prices to meet the needs of consumers. This concept takes on less importance in most political debates related to forests and forestry, although it still is very much a practical reality in strategic and operational planning of timber companies and governments. In its place has come a broader concept of SFM.

In the words of the President of Finland (Ahtisaari 2000): based on the definitions and the general criteria of sustainable forest management at the European level, the following principles were agreed upon in Helsinki in 1993:

- Forest resources should be maintained and enhanced for the health and vitality of forest ecosystems as well as for the global carbon balance;
- Forests should be tended for the biological diversity of forest ecosystems and to advance the socio-economic functions and conditions of forests; and
- Wood and non-wood productive functions of forests should be encouraged.

This broad concept has significant implications in terms of developing an operational definition of what the real aim is in getting more private investment in SFM. In particular, it implies that societies want the private sector (industry, individuals and other combinations of private capital) to be concerned with and invest in socially desirable outputs that currently are not traded in markets and in some cases cannot even be adequately valued in economic terms.

An important philosophical distinction exists between sustainability at the micro (forest stand) and macro (watershed or landscape) levels, as introduced in this discussion by the regional paper by Raga Castellanos (2001). At the extreme micro level, every forest stand has to be managed for sustainable production of all forest good and services. At the extreme macro level, the concept refers to sustainability of the overall public and private forest estate of a state or country, where management and use of

any given stand of forest could be for the sustained yield of an array of forest outputs, and where one output might dominate in one area and others in other areas. Raga favours the more practical and efficient macro approach to SFM.[3]

In fact, in most countries, we are dealing in practice with a point on the continuum between the two extremes. This is partly because we are dealing with situations where there are different mixes of private ownership and management, generally aimed at producing market based outputs within a public regulatory framework; and we are dealing with public and mixed management, aimed at producing various specific social outputs from public production and protected forests and park areas.

What is the Likely Magnitude of the Effort Needed to Ensure SFM?

Private investment in SFM needs to be looked at in context. Thus, no inherent reason exists why the present stocks of forest resources in most countries should be maintained at their existing levels and condition of management. Additional forest is needed in some countries, and afforestation of non-forest lands may be desirable to achieve sustainable development in the broader meaning of the term. We know, for example, that the growth in forest plantation area over the past couple of decades has been dramatic.[4] At the same time, all deforestation is not bad. Some land now in forest may be needed for other legitimate purposes in some countries. Much depends on the current state and magnitude of the existing forest estate.

How much money is needed to ensure global SFM? We have refrained from producing yet another set of estimates of the amount that would be needed to secure global SFM. Such estimates would be open to controversy since underlying assumptions

are highly debatable. For example, investment requirements should be estimated after correcting for market and policy failures, which is an elaborate exercise that is seldom carried out in practice (Pearce and Steele, undated). It is sufficient to say that global investment required to achieve even minimum standards of SFM will run into tens of billions of dollars per year,[5] and that the current area of forest that is being utilised in unsustainable ways is very large, probably in the order of some 200 million ha.

In addition, estimates of aggregate investment needs are to a large extent irrelevant to this discussion: first, we know that the needs are great and probably beyond what can reasonably be expected; thus, we should be spending our time and effort on the best path we can take in moving towards the future, not on the magnitude of future needs. If the path is right in the eyes of private investors, then resources will flow in reasonable amounts. Second, private decisions are not made based on aggregate investment needs, but rather on the basis of expected profitability and risk levels, and this has little to do with estimates of aggregate global needs for such investment.

The most important consideration is that private investors will pick up all or part of the tab only if the additional commercial benefits of SFM will surpass those of unsustainable practices or if they are required by law to do so and they have no alternative better investments.

WHY IS THE PRIVATE SECTOR NOT INVESTING SPONTANEOUSLY? WHAT ARE THE CONSTRAINTS?

Given present economic relationships and government policies in many countries, private investment in sustainable forest management generally is not attractive to the private sector. The use of forests by private investors is determined by the search for low risk commercial profits and market shares, within the context of a policy framework set by government. After years of examining the feasibility of SFM in various developing country situations, analysts have produced ample evidence that the profitability of SFM normally is not as high as that associated with unsustainable options, or investing in other sectors. As stated earlier, commercial profitability of SFM may be positive, but even in these cases, if it is lower than the profitability of unsustainable forest management, SFM will not be practiced voluntarily by the private producer unless there is some other incentive to do so.

This finding is now recognised widely. For example, the most recent internationally organised workshop focusing on financing issues related to sustainable forest management, held in Croydon, London, UK, on October 11-13, 1999, concluded:

> "studies indicate that financially, SFM is currently not as profitable as unsustainable forestry, nor is SFM competitive financially with other land uses…. except in cases where sustainability is a concern to forest enterprises, conventional economic analysis and market forces promote the liquidation of forests and conversion into other land uses". (Anonymous 1999).

In circumstances prevailing in most countries, the private sector will not be attracted spontaneously to investing in SFM meeting the broad principles cited by the President of Finland and listed above. Nevertheless, the sustainable management of these countries' forests is still desirable for the local, national and global society. How does this discrepancy between the wishes of society and those of private entrepreneurs arise?

We emphasise strongly here, that if the enabling conditions for fair, stable competitive private sector activity are not present in a country, then it does not matter what happens in terms of corrections of market imperfections. *The prime prerequisite for legitimate, honest private investment is the existence of minimum enabling conditions in a country*. These relate to a country's laws and regulations and how such create a fair and stable environment within which the private sector can invest. Again, the assumption is that such laws and regulations are enforced fairly and equally for all.

Lack of markets or imperfect markets

Given a stable and attractive enabling environment, the basic constraints on private investment can be traced back to market failures of various kinds. Imperfect markets or lack of markets can lead to socially 'sub-optimum' levels of private investment, or to investment in unsustainable forest management and timber mining as opposed to SFM.[6] The market's inability to generate socially desirable outcomes in private forest management happens mainly because[7]:

- Some of the goods and services associated with SFM are not traded in markets and thus provide no revenue to the private producer; and

- The costs associated with producing market based goods through SFM (including the transactions costs for certification) often are higher than for non-SFM, and compensation in the market place through consumer demand is not high enough yet to make the additional costs attractive on a voluntary basis to most producers. This latter situation is particularly the case where forests are abundant and quite freely available for use.

As mentioned above, while the constraints eventually lead to failures or weaknesses in markets, the factors that lead to these problems most often are exacerbated by poor government policies, lack of implementation of good ones, and lack of civil society norms setting standards on the use of a country's natural resources through public policy.

Lack of markets

Forests produce a number of benefits – biodiversity protection, carbon storage, scenic beauty, watershed protection — that are of interest to society at large, but that are not traded in markets and thus can hardly become of interest in commercial operations. In short, markets fail to account for these benefits that can derive from SFM, even though the benefits are very real. Since these services of forests have no markets in the traditional sense of the term, private investment – fundamentally guided and motivated by market signals and the prospects of commercial profits – does not deliberately produce them. Private production becomes sub optimal from the point of view of society.[8]

All of the above would not matter much if the proportion of non-market to market outputs were minuscule in SFM. However, this is not the case. Furthermore, non-market values of forests have increased in importance and in recognition because of various factors, including greater public awareness of their value in the functioning of the global ecosystem and preoccupation with their rate of exhaustion. Changing preferences resulting from growing wealth also influences the concern with the social values of forests.

Higher costs and lower risk-adjusted profits associated with SFM

There are new societal perspectives on management opportunities and needs in forest management, and new consumer demands that distinguish between SFM and non-SFM outputs (*cf.* Rametsteiner 1999, 2000). Many of these developments have led to an increased recognition of the gap between commercial, private priorities and those of society at large, as expressed through the actions of governments.

The private sector in most cases will be happy to adjust to the newly emerging and recognised needs of society, so long as the returns to them equal or exceed the additional costs to them. As mentioned above, producing additional social benefits through SFM in most cases leads to higher costs, and to lower profits, unless the additional benefits can be captured in the market place. One notable way to help capture such benefits of SFM is certification supported by market differentiation. However, Chan (2001) points out that: 'By and large, major international markets of timber and timber products have yet to respond to SFM initiatives. There is no affirmative support by the markets for actions towards SFM.' Others agree that consumer willingness to pay (wtp) for 'green' or certified forest products (CFP) has yet to show up in a widespread fashion in consumer markets. For example, Rametsteiner (1999) summarises the European situation where resellers rather than buyers are taking the lead, as follows:

> The majority of the demand (for CFPs) comes from companies (resellers) that have committed themselves to buying certified timber products. End consumers have not, up to now, created any significant market pressure on their own. Most of the companies are located at the consumer end of supply chains. The total market demand of these companies, loosely organised in cooperation with the World Wide Fund for Nature (WWF) in WWF buyers' groups, was estimated to be around 9 million m^3 in 1997…This is only a fraction of the apparent consumption of sawnwood and wood-based panels in Europe, which amounted to 131.8 million m^3 and the consumption of paper and paperboard, at 73.1 million tonnes in 1995 (UN/ECE-FAO 1996)[9]

The bottom line is that the 'private sector' by definition is in the business of producing commercial outputs and profits within the context of given societal norms and wtp for those outputs. Those who do not compete for profits and market share fall by the wayside. Such is the way of a functioning market economy. Profits depend on costs, but also on market prices reflecting consumers' willingness to pay for what the private sector produces. Thus, ultimately, the consumers' wtp for the additional outputs from SFM and society's willingness to pay for non-market benefits, particularly environmental services of forests, have to be high enough to result in levels of

commercial profitability that exceed or at least equal those of competing investments. Presently, certification seems to have more relevance as a way to get market access or secure or expand market share, rather than as a way to increase the profitability of SFM (Bourke and Leitch 1998). Finally, because of the generally longer time periods involved in SFM than in unsustainable timber extraction, risks can be considerably higher. This combined with uncompensated costs can lead to lower risk-adjusted profits.

Importance of government policies

The importance of government policies, or the lack thereof as a factor in creating imperfect markets and a constraint on private investment cannot be stressed too much. There are many ways in which policies and government action can result in a reduction in the effectiveness and efficiency of the underlying market mechanisms that determine investment. For example, Tomaselli indicates that governments in South America tend to support forest plantations by using a variety of incentives, while no such inducements are available for promoting the management of natural forests in either private forests or public forests managed under the system of timber concessions (Tomaselli 2001). Since plantations may have a large ratio of market values to non-market values as compared with natural forests, the latter may be displaced to make room for the government supported plantations. The net result frequently is a further erosion of the availability of those services of natural forests that are valuable to society but not to private investors. Chan (2001) points out that most of the timber industry of Asia supports the International Tropical Timber

Organisation (ITTO) 'Criteria and Indicators for sustainable Management of natural tropical forests,'[10] and at least four of the seven criteria support the importance of good government policies.

Social infrastructure provided by government in the form of clear property rights, publicly funded communications, transportation, research, education, civil law, and fair court systems for settling property rights and other legal disputes often is lacking, inadequate or unstable. For example, Landrot and Speed indicate that insecurity about ownership rights, the uncertainty of being able to hold to agreed timber concessions and deficient transportation infrastructures are the main constraints on private sector investment in SFM in Africa (Landrot and Speed 2001). Similar obstacles are reported by Raga Castellanos in Latin America (Raga Castellanos 2001). Moreover, in many cases, governments instead of facilitating private investment, overburden the operations of the private sector with a number of unnecessary or obsolete regulations when market forces could do the job in a better way (Tomaselli 2001, Raga Castellanos 2001). Thus, the existence of adequate social infrastructure plays a vital part in creating a favourable private investment environment. Without them, private resources go elsewhere. Further, in the case of global environmental services from forests, and related to the first category of constraint mentioned above, the international mechanisms for compensation are in their infancy and so far have not created much incentive for private investment to be forthcoming. Again, a weak legal system and lack of adequate backup infrastructure can increase risks and transactions costs for the investor.

The importance of law enforcement

Good policies and laws to promote investment in SFM mean little if the state is unable to control forest crime. SFM carries financial and managerial costs that yield financial results in the long run. Unsustainable illegal activities are much more profitable and therefore legitimate investors are at a great financial disadvantage when forest crime proliferates. Unfortunately, this is the case in many countries. Studies carried out in various countries that have perfectly sound laws prescribing sustainable forest management practices show that illegal logging can exceed, sometimes by a large margin, legal harvests. Illegal activities that work against SFM investments happen in public as well as private forestlands. They include unauthorised occupation of forestlands, timber theft, woodland arson, logging in protected or environmentally sensitive areas and so on. In some extreme cases, unfortunately frequent, illegal acts are perpetrated in collusion with corrupt public officials. When the government is corrupt, there is little hope that other actors, including communities, private corporations or the public, will adhere to the legal framework. Sustainable forest management laws become largely meaningless and the profitability gap between SFM and unsustainable activities increases.

HOW CAN THE CONSTRAINTS BE OVERCOME AND INDUCEMENTS FOR MORE PRIVATE INVESTMENT BE CREATED?

For a number of years, national governments, multilateral agencies and the private sector have focused on the means to overcome the constraints to increased private financing of SFM. Several recent major workshops were held on the subject of financing, and they all have included the specific topic of private financing.

The IPF and IFF processes were concerned with the overall health of the forests of the world and how they could contribute to alleviation of poverty on a sustainable basis. In the process of the IPF and IFF debates, it became evident to the participants that they needed to be centrally concerned with private investment as a contributing factor in reaching the goals set forth. Thus, past activities and thinking of the IPF and the IFF included significant discussion of private sector issues and private investment constraints and opportunities.

Both the Pretoria and the Croydon workshops (see UNDP 1999; Anonymous 1996), organised in support of the IPF/IFF process dealt with the subject of private sector involvement in SFM. The Croydon workshop report (UNDP 1999) concludes that '*…while generation of attractive returns remains essential, a new type of investor now combines it with forest resource conservation and development, and the social and economic development of the local population. The stated goal constitutes a significant shift in the investment attitude of some segments of private capital.*' Hard evidence of the magnitude of this shift is not cited in the report.

Further conclusions from the Croydon workshop of relevance to the present discussion are that:

- *The roles of public and private capital are distinct but complementary and they should be considered jointly in financing strategies for SFM. Public funding should be used to leverage private investment in SFM by addressing fundamental issues that inhibit private investment in SFM.*

- It is important to *…explore the concept and modalities of public-private partnerships.*

- The establishment of a 'global or international forest fund' (GFF) and/or an 'investment promotion entity/agency' (IPA) are complementary and mutually enforcing options for the global community….*While there was no consensus on the relative merit of an IPA and a GFF, it was clear that the conceptual basis for the former is far better articulated and well understood.*

- *Policy reforms and measures at the national and international levels are needed to create more conducive market conditions and allow the different financing sources to contribute more effectively and efficiently to SFM….It is the responsibility of the public sector to provide effective ground rules for private capital to be used in a socially and environmentally responsible manner if the private sector does not take on this responsibility.*

- *Enabling conditions are essential for investment in SFM. These require the elimination of various structural and operational barriers. Both policy guidelines and regulation, as well as incentives, are required. Incentives are generally more cost-effective than legislation, although they need to be supported by an adequate level of regulation.*

These points are considered later.

Evolving financing environments

As we move into the future, it is evident that a significant evolution and transition is taking place in the financing environments within which the private sector invests in forest management and associated processing and marketing activities. Further, these environments in many cases have become much more heterogeneous than in the past. First, as mentioned before, the mix of recognised and relevant forest outputs – goods and environmental services – has expanded, including in terms of new market based

outputs that influence private investment. Ecotourism, biodiversity prospecting, payments for carbon sequestration in forests are examples of some that have moved into limited market situations.

Second, fast growing plantations have become a much more important source of wood products in some parts of the world, and the growth trend continues. At the same time, watershed management forestry has become more important in many countries. The challenge in the latter case is to combine the protective functions of the forest with activities that provide incentive for private landowner participation (*cf.* Ffolliott *et al.* 2000).

Third, the differences between the large multinational corporations – truly global entities these days – and the smaller, local independent forest-based enterprises and investors have become more distinct. We also have seen a rise in large corporations based in the South investing in forest-based activities. They often operate under different sets of rules and norms than do the more global, regulated multinationals.

Fourth, a whole host of international agreements and consultations has created a web of internationally recognised principles and guidelines to guide international forest activities (*cf.* Gluck *et al.* 1997 for an overview). Criteria and indicators for SFM are being and have been derived in different geographic regions; international and national certification of SFM activities and outputs is growing; new multinational quasi public institutions are evolving and, in general, the world is becoming more interconnected.

Finally, new technologies, including particularly in the information and communication areas, as well as in logging, forest product processing and wood utilisation, have changed the nature of the mix of outputs that are sought from forests, the relative profitability of various investments, and, potentially, the impacts on forests remaining after harvest.

Emerging markets for environmental services and NTFPs.

As mentioned, private investors/producers would be more inclined to practice SFM if they were to receive payment for all the outputs – goods and services - provided through SFM. For this to happen two conditions need to be fulfilled: values need to be demonstrated and then mechanisms designed to enable private investors to capture those values through markets or otherwise. On the first condition, a large number of studies have produced a wealth of information about the magnitude of these various values (*cf.* the Table 1 and Gregersen *et al.* 1995b, and studies cited therein). The values often vary widely by output. However, based on review of the common threads in these studies, several observations emerge:

- some non-market values may be important, in some cases near or greater than the commercial value of timber. Therefore, if private investors could market these outputs, the chances of expanded SFM would increase.

- the dominant non-market value is carbon sequestration; and carbon trade offers a potential opportunity for increasing returns to private investors for increased efforts to provide forests that sequester carbon. This possibly could induce a greater propensity to invest in SFM.

- if carbon values are kept out of the picture, the other non-timber values of forests would probably be insufficient to tilt decisions in favour of SFM in most forests that otherwise would be used solely for timber extraction.

Table 1. Non-Market Values of Forests (US$ per hectare)

Scope of value	Mexico	Costa Rica	Indonesia	Malaysia	Peninsular Malaysia
Timber (market value)	-	1240	1000-2000	4075	1024
Non-timber products (market and non-market values)	775	-	38-125	325-1238	96-487
Carbon storage (non-market value)	650-3400	3046	1827-3654	1015-2709	2449
Pharmaceutical (non-market value)	1-90	2	-	-	1-103
Ecotourism/recreation (market and non-market values)	8	209	-	-	13-35
Watershed protection (non-market values)	<1	-	-	-	-
Non-use value (non-market value)	15	-	-	-	-
Option value (non-market value)	80	-	-	-	-

Note: Option values relate to the non-market value of preserving forests for future use. Existence values are those attached to forests by people even if they will not use these forest resources.

Source: Adapted from Pearce, 1995.

There is a great deal of controversy surrounding the use of non-timber forest values in policy decisions. For example, in the case of carbon sequestration, the question of whether and how to deal with forests as a 'clean development mechanism' was a key item on the agenda of the 6th Conference of the Parties on the United Nations Framework Convention on Climate Change in the Hague recently; and it was part of the reason why the talks were suspended. A number of questions surround the ability to actually monitor and verify how forestry projects affect carbon stocks. Chomitz (2000) discusses some of the difficulties. He suggests that it is hard to develop the counterfactual, i.e., what would have happened in the absence of such forestry projects. Also, the question of duration or permanence of the mitigating effect is an issue. There is potential for using the value associated with carbon sequestration by forests as a justification for SFM projects, but there are sizeable obstacles that need to be overcome before this option can lead to widely used market based mechanisms that will influence the expansion of private investment in CO^2 sequestration through SFM projects.

In sum, whether private investors can capture the currently non-marketed values associated with SFM is still a question that needs to be resolved. Costa Rica, Colombia and other countries have experimented with creation of markets for carbon sequestration and watershed management values. Other countries are also entering the picture. In theory they are important. However, the technical and political implementation difficulties are considerable.

The role of plantations in SFM

The relatively rapid increase in plantations in many countries can contribute to overall improvements in the management of forests by producing substantially larger amounts of raw materials per ha and diverting pressures away from natural forests (although there are some who contend that just the opposite could happen). Projections show that increasingly, future industrial supplies of wood will come from plantations, reaching up to 40 % or even 50 % of total supplies by the middle of the century as compared with some 22 % today. Because of the substantially higher yields of intensive plantations, this supply – about half of the world's industrial wood raw materials — could come from only 3 % of the world's forest area, 100 million ha (Spears 2000; Brown 2000). Plantation yields are higher in tropical and subtropical countries and thus, and it is expected that a larger proportion of such investments will take place in developing countries (Brown 2000).

As highlighted by Tomaselli (Tomaselli 2001; Box 1) and Raga Castellanos (Raga Castellanos 2001), plantation development by the private sector requires stable government policies and may require government incentives. This has been the case in South America: Brazil, Chile, Argentina, and Uruguay are countries that developed successful plantation programmes starting in the 1960s and 1970s, all based on public incentives, policy changes and private action (see Box 1). However, the speed and nature of the transition from dependency on natural forests to plantations depend on

the quality of plantation investments. If these replace natural forests, SFM would suffer, as many natural forest attributes would be lost. In addition, there are questions related to the environmental and social impacts of large forest plantations. Many of these can be avoided with proper design of these investments (*cf*. Kanowski and Savill 1992). These potential effects must also be considered in the 'macro' context of what the SFM situation may be in absence of plantations and having a good grasp of the many trade-offs involved.

Finally, it should be pointed out that a number of major previous buyers of Southeast Asian naturally grown hardwoods are switching to plantation grown wood, e.g., radiata pine from New Zealand or from Chile. Thus, Chan (2001) indicates that in the case of Japan, in the 1993-1999 period, plywood from Southsea logs dropped by considerably more than half, while softwood plywood (temperate) more than quadrupled. Chan argues that cost was the main factor and the uneven application of SFM certification standards was a contributing factor. Also, Chan argues for the need for better financing mechanisms for sustainable plantation investments, since traditional banking windows generally are not appropriate.

Evolution of multinational corporations and investors

Transnational investors likely have a considerable impact on SFM in developing countries. It is believed that the majority of participants in the international trade of forest products – and frequently in logging – in many developing countries, are transnational corporations. By some estimates, about 80 %-90 % of the forest products international trade is done by transnational corporations (Dudley *et al*. 1996; EIA, undated).

While many international investors adhere to strict codes of conduct and will continue to make serious efforts to improve SFM in their transnational operations,

recent years have brought concern about the practices of some unscrupulous and powerful transnational corporations that have a poor record of environmental or social management. Their operations are growing extremely fast. The impetus or 'push' for fast expansion is coming from the expansion of markets in some of the Asian economies and the fact that the majority of the forests remaining in Southeast Asia are already covered by forest concessions. The lure of a rich resources and apparent high profitability of operations together with weak governance is an irresistible pull for many transnational corporations. While no global or even regional assessment exists, evidence is mounting that at least several transnational corporations engage in illegal acts (Contreras-Hermosilla 1997, Sizer and Plouvier 2000). This type of private investor would not help the cause of increased investment in SFM. Thus, the main challenge governments in many forest resource rich countries face is how to provide incentives for investors that practice SFM management and create barriers to those that are more interested in 'cut and run' operations.

Developing a framework for action

In order to overcome the constraints on private investment in SFM, within the context of the new investment environments that exist, governments need to intervene with new or reinforced laws and regulations and/or with changes in the levels and types of incentives provided to private investors. However, as Wibe (1992) cautions, too much intervention in markets, or the wrong interventions can lead to worse problems than no intervention. More broadly, public servants (decision makers) can make the wrong decisions regarding public intervention because:

- they do not know the implications of the decision at the time the decision has to be made (e.g., the intervention decision is made, but it has no impact for unforeseen reasons, or an intervention in another sector adversely affects the forest-based sector);

- a very powerful group or individual forces the decision; the decision makers are afraid to go against that group or individual, e.g., because the decision makers want to keep their jobs or are afraid of other consequences;

- the decision makers themselves are corrupt and are enriching themselves by making the wrong decision in terms of the public good and a healthy private investment environment.

There also are the cases, of course, in which the government has already made a decision that leads to adverse effects (from a social welfare perspective) and either (i) does not have proper monitoring at hand to know that the effects are taking place,

or (ii) cannot correct the mistake even if it knows that it is a mistake, e.g., because it does not have enforcement power. Of course, these various intervention failures may co-exist and overlap in a single decision.

Some of the dangers of the intervention failures can be avoided by using a comprehensive approach, one that includes a variety of checks and balances, changes in several, complementary and/or conflicting policies, institutions and public management and control over resources, and based on the input of various stakeholders. In the case of private investment in SFM, in addition to government agencies and regulatory bodies, consumers need to enter the picture, showing their willingness to pay the higher costs for verified SFM produced outputs. Finally, the comprehensive approach includes consideration of changes in policies or mechanisms used for other sectors that have perverse effects on the forest-based sector, e.g., the

Box 1. Argentina: forest plantations development program

The government created an incentive program for the establishment of plantations in 1995. The program offered subsidies to private investors. Subsidies varied according to the conditions of plantation establishment. Additional funds were available to finance the management of these plantations. The conditions related to these subsidies are such that there is no discrimination against small landowners; in fact, over 4,000 small landowners have already benefited from the program. Incentives are also available to large corporations.

In addition, the government carefully put in place policies that ensured stability for the investments in plantations. Fiscal obligations affecting plantation establishment and also their management, harvesting and trade of forest products from plantations, were 'stabilised' for a period of 33 years. This policy was, according to investors, a determining factor in their decision to invest and engage in forest plantation development. The government disbursed some $60 million to support plantation development during the period 1997-2000 and indications are that the total area under plantations by 2003, only 8 years after the policy was adopted, will reach some 1.5 million ha, a 50 % increase over the pre-program years. This is an impressive accomplishment.

As in the case of Chile, that we describe later in the text, successful cases of promotion of private investments in forest plantations, rest on the twin pillars of increasing profitability and reducing uncertainty of investments through clear regulatory mechanisms. In turn, a successful base of industrial plantations is likely to trigger substantial investments in processing facilities now made safer because of the very existence of plantations. The process becomes self re-enforcing. Arguably, these developments will contribute to deflect destructive and wasteful practices away from natural forests.

Source: based on Tomaselli 2001

use of agricultural subsidies that encourage deforestation or 'forest mining' with eventual conversion of land to agriculture.

The investment framework needs to include at a minimum a broad set of laws that govern the operation of the private sector in general and a set of laws and regulations that guide the forest-based sector in particular, e.g., related to forest ownership and control, land use, environmental impacts and trade (Gregersen 1993). As amply demonstrated in the past, lack of such a broad framework of legal mechanisms can lead to non-productive, socially undesirable investment in unsustainable and unproductive forest-based activities (*cf.* OECD 1992).

A number of guiding principles can be considered in developing an appropriate policy framework and set of policy changes for encouraging future private investment in SFM. These include the following:

- **Clarify the type of change being sought**. Thus, one can be seeking increased total investment in SFM; or trying to make existing investment more responsive to sustainability issues. If SFM is the primary objective, then focusing on some combination of actions to generate new investment and to create incentives for existing forest-based investors to practice more sustainable forest management may pay off more in the long run than merely focusing on more investment. The actual conditions and results sought by countries in encouraging investment in SFM can be highly variable by country.

- **Distinguish between types of private investors**. Thus, both large, multinational commercial investors and smaller local private investors are important in the overall scheme of expanding SFM globally, as well as in most countries. Different investors require different approaches – different regulatory and incentive mechanisms.

- **Consider investments in SFM in relation to those in post harvest activities.** Most private investors in the forest-based sector, except for the independent logging firms, are in the business of forestry because they have an end purpose in mind, and that purpose quite often involves primary and/or secondary processing of forest outputs. Appropriate instruments will recognise these linkages and the fact that the effectiveness of incentives for SFM depends on having the total incentive package in order.

- **Develop policy mechanisms that recognise that private commercial companies respond to both 'push' and 'pull' incentives.** The main pull is demand, or market signals from consumers and intermediate buyers of forest products that they want products that are the result of SFM (and

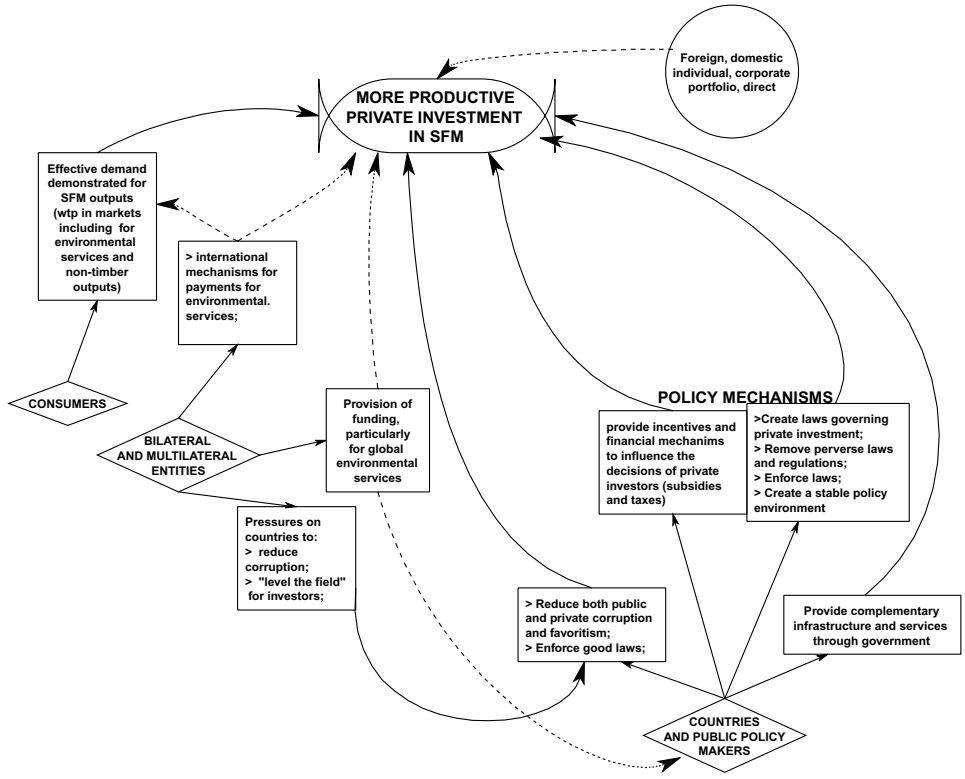
that they are willing to pay a premium for them). A second set of 'pull' factors (leading investors toward specific countries and forest areas) are incentives created by countries to attract investment in SFM. The main 'push' factors are laws and regulations that guide investors to avoid or internalise negative externalities associated with their investments. Both are important and both need to be considered in an overall policy framework and in designing appropriate policy mechanisms.

- **Ensure an institutional set up that will adequately enforce the law and regulations.** It is now abundantly clear that responsible private investors shy away from countries were forest crime and corruption is prevalent. Fighting illegal activities and thus generating a more favourable climate for private investment in sustainable forest management involves more than simply strengthening the public forest administration or the police force. It also involves actions such as identifying the core functions of government and sharing other functions with the private sector and the civil society, streamlining the policy framework to make bureaucratic procedures simpler, with less room for interpretation, more transparent and less discretionary, establishing clear property rights, and increasing penalties for illegal acts.

Figure 1 provides an overview of the elements that need to come together in a comprehensive framework for an action program to gain expanded productive and socially responsible private investment in SFM. As indicated on the left side of the figure, there is a role for consumers in this process, namely through their market 'votes,' or willingness to pay for outputs from SFM. The consumer movement can be helped along by a set of international mechanisms, some of which already are in place (certification, international agreements related to forests, emerging international markets for carbon, trade agreements, etc.). The mechanisms are managed by a set of interwoven bi and multilateral entities. These entities also provide critical funding, both as loans and as legitimate payments to the private investors for environmental services. Some of the international entities – including many environmental NGOs – provide critical information that can help in establishing better functioning markets for environmental services as well as in reducing transaction costs and making private investors better aware of options. Finally, some provide help to countries in overcoming problems of corruption, which can destroy the market environments within which the private sector can operate legitimately and in a more sustainable manner.

The right hand side of Figure 1 indicates the role that national and local level policy makers and civil society groups play in providing an appropriate and attractive investment environment for SFM. Governments have undertaken and can undertake many actions and policy changes to correct policy imperfections and support stronger social infrastructure in ways that will stimulate markets and remove or make up for

Figure 1. Overview of the factors influencing private decisions to invest in SFM



market imperfections. This, in turn, should attract additional legitimate and productive private investment into SFM.[11]

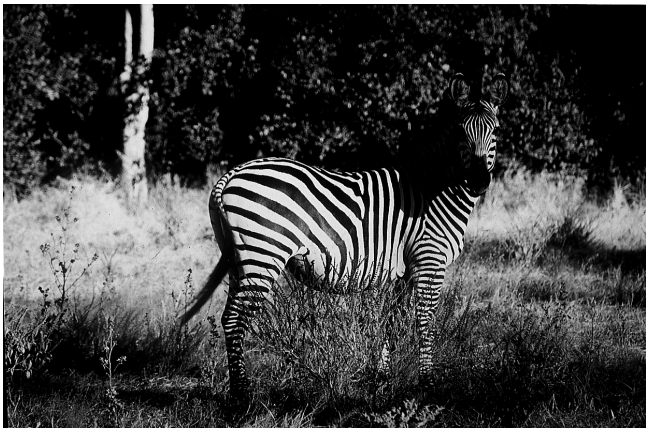
Developing an Appropriate Set of Public Policy and Institutional Mechanisms.

Figure 1, on the right hand side, indicates two broad categories of policy actions that need to be considered by government and civil society in creating a favourable environment for private investment in SFM. These are:

- Actions that result in *a set of laws and regulatory mechanisms that establish an investment framework that protects society's interests while also being attractive to private investors;*

- Actions that provide *the market incentives for private individuals and firms to invest in SFM rather than unsustainable forest management.*

In what follows we look at each of these categories of policy action.



Establishing appropriate laws and regulatory mechanisms

An integrated, interwoven set of laws and regulations must be in place to set the basic legal framework for SFM and an appropriate investment environment (*cf.* Laarman 1995). Almost by definition, SFM involves longer term intentions and investment. As indicated earlier, such investment is not likely to be forthcoming if there is an unstable policy environment, or one in which all potential investors are not treated fairly and equally.

In order to have the kind of stable and attractive environment for productive private investment in SFM, countries need to develop appropriate policies related to at least the following (Gregersen 1993):

- distribution of forest land ownership and control among public and private sectors; clear property laws;
- management objectives and approaches stated in law and regulation for the overall forest estate (including both public and private forests), this includes environmental protection objectives;
- the levels and types of investment in social infrastructure, including research, training, education, information, and communication needed to move the forest-based sector along on the right track;
- the mix and form of forest industry development desired and allowed (e.g., related to foreign investment);
- international and domestic market development and trade; and
- programmes for financing both private and public forestry.

While in theory, a body of laws and regulations dealing with the above should create the desirable environment for investment, we know that in fact of equal or greater importance are the ways in which existing laws and policies are *implemented* or not implemented.

The role and effectiveness of international agreements and policing of such by national governments has not been studied to any extent in the case of forestry. In theory, international actions, including by large NGOs should contribute to resolving some of the problems of lack of law enforcement and misguided use of forest resources. In fact, much of the concern throughout the IPF and IFF processes was devoted to the question of the role of international institutions, including various forms of agreements. These have been usefully reviewed by, among others, Gluck *et al.* (1997).

Influencing the decisions of private individuals and firms to invest in SFM rather than non-SFM: The role of various incentive mechanisms

Many studies have looked at the various specific market related instruments that have been and can be used to '…alter the market signals facing the private sector, in such a way as to make SFM more profitable and thus more attractive than unsustainable practices.' (Landell-Mills and Ford 1999). The seven categories set forth by Landell-Mills and Ford include:

- reforms of forest revenue systems,
- changes in forest concession conditions,
- explicit financial incentives,
- trade liberalisation,
- promotion of markets for non-timber benefits from SFM
- forest certification, and
- payments for forest conservation

Landell-Mills and Ford (1999) discuss these seven categories of instruments in some detail using data from 76 countries, with a special focus on 23 countries in which the forestry sector is particularly significant and/or where considerable change is taking place. Two conclusions from their study relevant here are that: (1) countries vary greatly in what they are doing to get more private participation in forestry; and (2) most countries use a suite of policy mechanisms – regulatory and fiscal and financial incentive mechanisms.

Richards (1999) classifies (innovative) financial incentive mechanisms as:

- Transfer payments (including 'polluter and beneficiary pays' taxes; differential land use taxes; forest pricing (including concession bidding, performance bonds); tree planting subsidies; debt for nature swaps; international timber trade taxes; other international taxes);

- Market approaches based on 'public goods' benefits (including carbon offset trading; fair trade practices; certification of forest products; bioprospecting deals; forest protection and management obligations);

- Private/public investment flows (including micro-finance to local users; channelling private international flows, especially portfolio capital; multilateral funds to stimulate private investment and public/private financing;

- Property rights approach (including clarifying existing property rights; creating community usufruct rights; tradable development rights (TDRs); service concessions; international TDRs, franchise agreements and conservation easements; intellectual property rights agreements).

Many other analysts and researchers have developed other classifications (*cf.* UNDP 1999; Anonymous 1996 McGaughey and Gregersen 1988).

The main points to emphasise here are that:

- generally a combination of market related policy mechanisms will be needed and most effective in encouraging private investment in SFM;

- whatever mechanisms are used, there will likely be need for some public payments to forest investors to cover the costs associated with production of environmental services (these should be treated as payment for services rather than 'subsidies' which has a different connotation to most people);

- some of these costs should logically be covered through international mechanisms, since some of the benefits are global environmental services; and

- none of the mechanisms will be successful in attracting private investment if the broader investment policy environment in a country is not stable and perceived to treat investors unfairly and inequitably.

Box 2. Chilean Forest Sector: Economic evaluation of D.L. 701 and Forestry Incentives

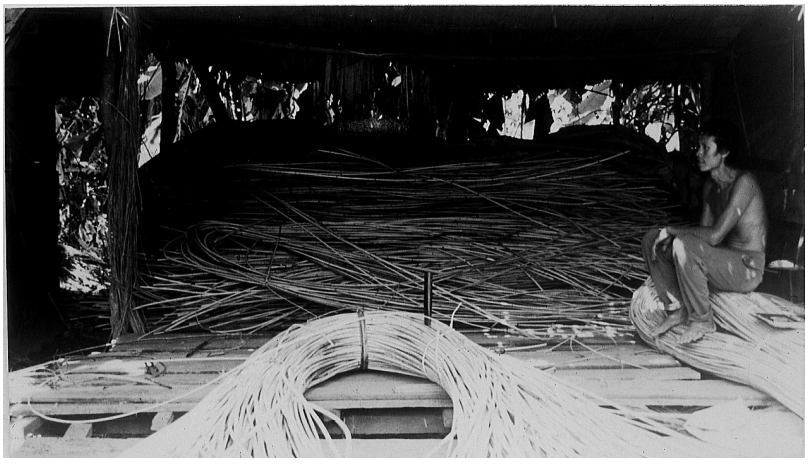
In some cases, countries have fostered private sector investments by providing explicit incentives, such as subsidies, and f creating markets for sustainable forest outputs. Probably the most classic example, is that of Chile. Santa-Cruz, in an unpublished paper (Santa-Cruz 1988) analysed the early evolution of the now thriving and quite sustainable plantation based forest products industry in Chile, focusing on the impacts of the key law DL701 that provided the initial incentives for the growth. The interesting conclusion of this study may provide a lesson for many of those who strongly oppose any kind of fiscal "subsidy" for forestry or, for that matter, any kind of massive government intervention in the way market forces operate.

Estimating ex post rates of return on investment in forest plantations in Chile, Santa-Cruz found that from a financial perspective there was an average 9.6% return excluding all incentive payments and tax advantages under D.L.701 (which included tax holidays and direct subsidies for plantation management). Santa-Cruz reaches the conclusion that: '*…DL 701 might not have been necessary to boost forest sector activity, if a more stable and healthy economic environment existed at the time it was passed. The lack of a well developed market for the radiata pine might have inhibited investors to tie up large amounts of capital without having any indicators that there would be a market for the output in the future. In this regard, back in 1974 (when the law was passed) there was no appropriate secondary market for plantations of radiata pine, and the scenario 25 years down the road was highly uncertain. In addition, exit barriers in the forest sector were considerably higher than they are today.*'

In most cases, combinations of government policies and programs can create incentives that contribute to improving investment in SFM without creating distortions and without, in the longer run, resulting in a net cost to society. In fact, quite the opposite can happen, such as in the case of Chile, where a package of incentives and policy reforms was introduced (Raga Castellanos 2000). Santa-Cruz and others have analysed the early evolution of the now thriving and quite sustainable plantation-based forest products industry in Chile, focusing on the impacts of the key law D.L. 701 that provided the initial incentives for the growth (see Box 2).

So even though the private rates of return seemed satisfactory without the incentives, the uncertainty of the market in the early days created a barrier to productive, sustainable investment, a barrier that the incentives contributed in reducing. However, by focusing only on D.L. 701, Santa Cruz missed to some extent the more complex and interactive nature of the whole integrated suite of policy actions and investments that helped to create the market environment that contributed to the Chilean forest sector and its growth to what it is today.

Thus, in 1975 the government introduced measures to eliminate previous restrictions to the export of unprocessed logs and wood raw materials (Decree 259, Ministry of Agriculture). At that time this was a radical change in Latin America, a



region where nearly all countries had strict log export prohibitions in place. With the liberalisation policy, the previously restricted large log export market was now open to Chilean entrepreneurs. Shortly after, in 1979 the government also abolished prohibitions to the export of logs of small dimension (Supreme Decree 350). This policy reform offered possibilities for improving the cash flow situation for many investors that could not wait extended periods to get the returns on their plantation investments.

The net effect of these *integrated* policy reforms was to open enormous possibilities in the export market and for investments in plantations. With these reforms, the conditions were set for a massive export of logs. The high commercial profitability of producing and exporting logs (with internal rates of return 25% and 45%) generated strong incentives for further investment in plantations. At the same time, also exports of industrialised products based on plantation wood, such as wood-based panels, various types of wood pulp and paper, started to accelerate.

There is little doubt that, from the economic point of view, the impact of this package of policy reforms was extremely positive. These policy reforms provided a strong push for the establishment of plantations which now extend over 2.1 million ha, supply some 90 % of industrial requirements, and form the basis for annual exports in excess of US$2 billion thus making the sector the second largest exporter in the Chilean economy. The government spent some US$150 million in subsidies during the 20 years Decree 701 was in force but, the Decree and its associated legislation contributed to catalyse for investments for US$4 billion (Raga 2000). The government profited handsomely by receiving more than US$200 million a year in direct taxes alone (Contreras-Hermosilla 1997a).

While the economic effects of the policy reform package are generally recognised even by detractors to have been positive, its environmental and social effects are

somewhat less clear. Private investment has concentrated almost exclusively on monocultures, and this is generally undesirable from the environmental point of view. Some of the natural forests were lost because of the private plantations drive. However, only 1% of the natural forests were displaced by plantations (Raga Castellanos 2001). Against this, arguably some natural forests were saved because of the plantations program. The net effect is not obvious. Most plantations were established in wastelands (Unda and Ravera 1994). This translated into the greening of several degraded areas of the country, particularly 500-1000 km south of Santiago and in the coastal zones were plantations are effective in controlling erosion, sedimentation, and fertility loss (Crovetto 1994). It is estimated that by 2001 some 60% of private investments in plantations will be certified (Raga Castellanos 2001).

Social impacts also were mixed. The forest policy reforms outlined above probably provided economic opportunities mainly for the powerful and relatively wealthy. There is evidence that the Chilean pattern of forest-based development initially resulted in three large enterprises controlling more than 70 % of all plantations. Some critics indicate that plantation establishment resulted in the expulsion of local rural people from their lands and that many displaced workers migrated to cities compounding unemployment problems there (Lara and Veblen 1993) However, more recent studies suggest that the proportion of plantation investments controlled by small or medium size entrepreneurs may now be between 40% (pines) and 50% (eucalypts) (Raga Castellanos 2001).

There is evidence that a large share - as much as 96% - of the financial resources dedicated to the incentives programme embodied in Decree 701 went to large corporations. On the other hand, examining the possible trade-offs involved in the Chilean strategy, it is possible to imagine that the export-led Chilean forest development

probably generated income for workers that would have not been created without such development. Some 120,000 jobs, enough to provide income for as many families or more than half a million Chileans are linked to the government incentives. In fact, employment creation in forest plantations exceeds that created in traditional crops, on a per ha basis (Varela 1995).

To summarise, even when these integrated policies may have been overkill, the results on the private sector indicate that, on the whole, they were beneficial and key to generating a powerful drive for sustainable private investment in the sector. In contrast to many private sector developments in forestry, the Chilean forest-based sector appears be healthy and sustainable and to have deflected unsustainable pressures away from the natural forest.

Another interesting variation on this theme in terms of getting more private investment flowing into responsible, SFM is that of privatisation of what previously was public forest-based activity. New Zealand is the classic example. While it is still too early to tell whether this will result in much additional private investment in SFM, assessments to date have been generally positive about the social benefits involved (*cf.* Clark 1999).

Various other policy incentive mechanisms also can be used to strengthen market environments for private investment in SFM. Thus, creation of stable property rights regimes, public research supporting forestry, government market information programs and establishment of appropriate infrastructure can go a long ways toward creating a favourable market environment and an incentive for private investment. Indeed, even in fairly open economies with stable and transparent investment policies, such elements of public support may be necessary to create the environment within which private investment will take place.

SUMMING UP ACTIONS FOR THE FUTURE

Synthesising the foregoing discussion, the policy conclusions from the regional papers by Raga Castellanos (2001), Tomaselli (2001), Landrot and Speed (2001) and Kufakwandi (2001), other assessments of what has happened in the past and what is attractive for the future, including the discussion and papers for the Pretoria and Croydon meetings, a set of suggestions emerge regarding the road ahead from a policy perspective in terms of providing incentives for more private investment in SFM.

Fundamental to this synthesis is an interpretation of the motivations of private investors and the conditions under which they will invest in SFM:

- Private investors (as investors and not as individual members of civil society) generally are motivated by i) attractive commercial profits, ii) the potential to increase market shares; and iii) low levels of risk, which relate to stability and fairness of policies and the existence of good information and a positive investment environment in a country.

- SFM investments generally have: i) higher costs and lower levels of commercial profits than unsustainable forest exploitation, and ii) higher risk, mainly due to longer investment periods than unsustainable options that render a larger and quicker profit through timber mining.

It follows that, if we want to encourage increased focus on private investment in SFM rather than unsustainable FM, policy and market changes need to be introduced to ensure that:

- levels of profitability associated with SFM are high enough and risks low enough to attract such investment; and

- profitability is reduced and private risks increased for unsustainable forest management, in order to discourage it.

The remainder of this paper sums up the types of policy changes and interventions that need to be considered in each country and region in designing its specific plan of action to achieve these two goals.

Policy interventions to increase profitability of SFM

In order to increase the profitability of SFM to levels that attract private investment, we need effective and efficiently managed policy interventions to:

- Encourage, possibly through national or state forest laws, adoption of a 'macroscopic' concept of sustainability (*cf.* Raga Castellanos 2001), where specialisation, e.g., in terms of efficient timber production exists along side protection forests, recreation forests, etc., i.e., a landscape rather a stand or 'microscopic' perspective on sustainability; this can help to increase efficiency and profits associated with SFM.

- Increase efficiency of government regulatory functions and activities related to private SFM, rather than making them more complex and costly, something which generally results in increased costs for the private investor (*cf.* Tomaselli 2001)

- Reform fiscal or monetary policies that: i) increase costs of SFM, ii) reduce profits.

- Promote payments and transfers for externalities associated with private SFM for which the private investor currently cannot get remunerated through the market. Examples include promotion of carbon trades and downstream payments to upstream land users for watershed protection that results in improved downstream conditions (e.g., as in Japan).

- Help develop and encourage national and international markets for traditional and non-traditional products from sustainably managed forests. Ultimately, if widespread investment is to take place, a broad array of consumers must be willing to pay for the additional benefits in the market place or through taxes that support directly the non-market outputs associated with SFM.

- If the private investor produces important and significant social benefits, consider programs that involve public 'payments for services,' through taxing the beneficiaries. These payments should not be considered subsidies, but rather legitimate payments for outputs (forest environmental services) that are deemed best paid for by society as a whole rather than through forced markets.

- Provide technical assistance, knowledge, promotion of opportunities, particularly for smaller forest landowners and investors who may not understand the intricacies of practising SFM, nor the costs and benefits associated with it.

- Facilitate financing of private operations (perhaps through preferential or concessional credit, sensible loan terms, insurance programs, tax breaks for good SFM, etc., or investment guarantees).

- Promote vertical as well as horizontal integration of forest-based operations (not necessarily ownership). For example, this might make possible the use of a wider range of species, thus making sustainable natural forest management more appealing. In terms of horizontal integration, consortia or other forms of joint operations can help take advantage of economies of scale and produce the volumes and qualities demanded in international markets that individual producers could not satisfy.

- Encourage investments in plantations that take pressures off natural forests, and discourage through various means development of plantations on lands that are currently in natural forests with environmental values.

Policies to reduce risks associated with SFM

The private investor is sensitive to risk, and it is risk-adjusted profit that is of concern. Thus, in order to reduce risk, we need to consider policy interventions that:

- Establish clear 'rules of the game' and stable policies over time that help to create a positive investment environment.
- Establish clear provisions and conditions regarding changes in the rules of the game.
- Establish clear property rights or usufruct rights and enforce them uniformly.
- Involve local communities and NGOs in SFM and thus reduce conflict with large investors.
- Provide improved information programs, affordable insurance options, loan guarantees, and other policy mechanisms that result in reduced risk for the individual private investor.
- Reform trade laws, where such currently are discriminatory.

Policies and actions to reduce unsustainable forest management

At the same time, in order to reduce the attractiveness of deforestation and unsustainable forest management, policy interventions may be introduced to:

- Eliminate subsidies and other preferential treatment to sectors that compete for land with the forest sector, particularly if there are no compelling social or environmental reasons to keep them.
- Establish firm monitoring and control of illegal operations. Increase the probability of being caught through better surveillance, and impose stiffer penalties for illegal acts.
- Foster third party monitoring and control (inspections, etc).
- Combat opportunities for corruption and illegal acts. Make transactions transparent and monitored by an independent party; introduce checks and balances where such are currently absent.

- Avoid infrastructure placed near high value forests that also have high environmental value. Particularly, reduce uncontrolled use of such infrastructure that could lead to deforestation and timber mining.

- Avoid political interference (including international interference) in the control of the nation's forests. (E.g., in Bolivia, the Congress proposes three names of persons for the position of 'Superintendente Forestal,' the top authority in the forestry sector. The President chooses one. The Superintendente is appointed for a period of 6 years thus straddling the presidential period, which is 4 years. Financing for the Superintendencia comes from directly forest fees, not the Central Treasury. All this is to avoid political use of the Superintendente's Office).

We emphasise that not all these policy interventions are not needed in any given case to overcome the constraints to investment. Each country or region requires separate strategic, tactical and operational analyses and debate to develop and agree on the most effective and efficient specific mix of interventions to encourage expanded productive private investment. There are no general prescriptions that apply everywhere, except perhaps, as also pointed out in the regional papers, the fundamental need to create a fair, stable, and positive investment environment, with a level playing field for all existing and potential investors. In such an environment, the door is open for introducing specific incentive mechanisms and market reforms that can result in significant increases in private investment in SFM.

ENDNOTES

[1] Commercial profitability of SFM may be *positive*, but even in these cases, if it is lower than the profitability of unsustainable forest management, SFM will not be practiced voluntarily by the private producer unless there is some other incentive to do so.

[2] It is worth noting that even if the private entrepreneur could somehow 'capture' the value of all these non-timber goods and services, this still does not guarantee that SFM would take place because the combined profitability of market and non-market captured benefits may still be below that of unsustainable forms of management. However, capturing these non-market benefits would certainly increase investments in more sustainable forest management as it would create commercial revenues that the market is now unable to produce.

[3] The contrast between them parallels the older debate in the US on 'sustained yield multiple use' management of forests.

[4] Industrial plantations now supply just about one quarter of global industrial roundwood and it is expected that they will supply as much as 40 % of all industrial needs of wood raw materials by 2050 (Brown 2000).

[5] UNCED Agenda 21 estimated annual requirements for various activities related to SFM to be about US$ 31 billion per year. Other analysts estimate investment needs in the order of US$60-67 billion per year (CIFOR 2000, Crossley *et al.*, 1997).

[6] 'Sub-optimum' investment occurs (a) when private benefits from SFM are below social benefits for a variety of reasons discussed below and, thus, less investment occurs than is socially desirable (or optimum), or (b) when private costs are below social costs and more private investment occurs than is socially desirable (optimum) i.e., in the case of unsustainable forest management where investors are not forced to consider the loss of socially desirable outputs.

[7] Two other general conditions also can be associated with imperfect markets for forest outputs. These are: (1) monopoly and monopsony - if a firm can set its own price and its own conditions of production, or if a large buyer can influence the price it pays, then production likely will be sub optimal from a social perspective; and (2) existence of a situation where the market is too small for an individual producer to take advantage of the available technology fully under free competition, and higher costs per unit output result. While relevant, these are likely to be less important factors across a wide variety of country situations than the two featured in the text.

[8] It is worth noting that even if the private entrepreneur could somehow 'capture' the value of all these non-timber goods and services, this still does not guarantee that SFM would take place because the combined profitability of market and non-market captured benefits may still be below that of unsustainable forms of management. However, capturing these non-market benefits would certainly increase investments in more sustainable forest management as it would create commercial revenues that the market is unable to produce.

[9] UN/ECE-FAO. 1996. Forest products markets in 1996 and prospects for 1997. E. TIM/BULL/49/6 Vol. XLIX (1996) No. 6. New York.

[10] *Criteria and Indicators for Sustainable Management of natural Tropical Forests*. ITTO, July 1998.

[11] Chan, B. (2000) suggests from the Southeast Asian timber producers perspective that there are four main needs: (1) activities that stimulate positive market response to SFM; (2) a new fund for tree plantations in the tropics; (3) more training; and (4) research and development of appropriate technologies.

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Annex 1.
Extracts from the 'Highlights' of the Oslo Workshop

PRIVATE SECTOR FINANCING OF SUSTAINABLE FOREST MANAGEMENT

'Sustainable forest management offers opportunities for economic gain alongside ecological and social benefits. To achieve this, greater investment is needed not only by the private sector (ranging from small farmers and communities to large international corporations) but also by the public sector, including through official development assistance.

Private investors seem to prefer investing in industrial plantations rather than in natural forests; accordingly, large companies have directed substantial flows of private capital to industrial plantations. Although this has occurred mainly in developed countries, the trend is spreading to include a growing number of developing countries where conditions are attractive for private capital. Given their more predictable levels of output and their relatively short rotations, industrial plantations carry a lower level of perceived risk for investors than natural forests. Thus, public sector incentives for this market segment appear to be less needed. In comparison, promoting sustainable management of natural forests and plantation development by smallholders will continue to require public support and incentives.

Major factors that influence private sector decisions about forest-related investments include levels of returns, risks and transaction costs. Sufficient returns are a prerequisite; thus, any factors that increase costs represent another burden for the private sector and deter investment. Evidence indicates that small investors, in particular, find it difficult to meet the additional costs often associated with sustainable forest management. Weighing returns against risks, private investors generally demand much higher returns (typically 15 % to 30 %) from developing countries where conditions are such that risks may be seen as very high. Given this situation, risk mitigation – much of it in regard to factors outside the forest sector's control – could significantly help to promote investment in SFM. Reducing transaction costs is also important, especially to attract small investors.

Private sector investors appear more reluctant to invest in SFM in natural forests because they see it as having high investment costs, being technically complex and offering only modest returns compared with alternative investment opportunities.

Besides having significant risks and uncertainties, it is also associated with contentious environmental and social issues.'

AN ENABLING ENVIRONMENT FOR INVESTMENT IN SUSTAINABLE FOREST MANAGEMENT

'Funding the forest sector also requires an enabling environment at the international level. In general, the current situation is not positive. A continuing decline in commodity prices at the international level has prevented the forest sector, even in forest-rich developing countries, from yielding adequate financial surpluses that could be reinvested into SFM. Major international markets for forest products are price sensitive and tend to favour low-priced forest products, which often come from non-sustainable harvesting. This trend undermines the market share of responsible suppliers of forest products, which have to bear the full costs of sustainable practices yet often receive no price premium for their efforts. Therefore, promoting remunerative trade and fair prices is potentially important in making SFM investment possible.

Other important factors that constrain SFM investment are insecure tenure, policy and market failures, high levels of actual and perceived risk related to factors outside the forest sector's control, a lack of suitable credit options adapted to particular attributes of the sector, and weak and unstable regulatory environments that encourage, rather than discourage, unsustainable or illegal practices. Similarly, factors that raise operational costs or reduce returns, such as overregulation, poor infrastructure and undeveloped markets, are disincentives for private investment. The additional costs involved in seeking to achieve SFM at a micro-scale (that is, seeking all benefits of SFM from each individual forest stand) compared with at the landscape level also discourage investment, especially by smallholders.

Because situations vary, individual developing countries and countries in transition must find solutions that are best suited to their own conditions as they seek to create an environment conducive to investment in SFM. Making SFM more profitable and less risky through policy interventions would increase the self-financing prospects of the sector and help mobilise new private investment. Nonetheless, many countries still have a need for external public funding through official development assistance (ODA) to support capacity building, the development of appropriate legal frameworks, and the creation of social and economic conditions conducive to investing in SFM.'

Annex 2.
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CIFOR

CIFOR was established in 1993 as part of the Consultative Group on International Agricultural Research (CGIAR) in response to global concerns about the social, environmental and economic consequences of forest loss and degradation. CIFOR research produces knowledge and methods needed to improve the well-being of forest-dependent people and to help tropical countries manage their forests wisely for sustained benefits. This research is done in more than two dozen countries, in partnership with numerous partners. Since it was founded, CIFOR has also played a central role in influencing global and national forestry policies.

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The Consultative Group on International Agricultural Research (CGIAR), established in 1971, is an informal association of nearly 60 public and private sector donors that support a network of 16 international agricultural research centers. The CGIAR's mission is to contribute to food security and poverty eradication in developing countries through research, partnership, capacity building and policy support. The CGIAR promotes sustainable agricultural development based on environmentally sound management of natural resources.