OPPORTUNITIES AND CONSTRAINTS TO INVESTMENT
NATURAL TROPICAL FOREST INDUSTRIES

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EXECUTIVE SUMMARY

The global forest products industry represents close to 3% of the world's gross economic output, and the forests upon which it depends are particularly important ecosystems for the health of the planet and for human well-being. The size of the industry, its links to the rest of the world economy, and the centrality of its resource base to environmental sustainability make it an industry subject to intense controversy and growing public and regulatory scrutiny.

The forestry sector offers an unusual opportunity to demonstrate just how strongly commercial interests (the marketplace) and conservation objectives (the public good) can be aligned. The challenges to the industry have led to a wave of experimentation around the globe. Over the past decades, a small but growing number of companies in the forest products sector have emerged as innovators in the movement toward what is being called "sustainable forestry." Low-impact forestry methods, local community involvement, forest management certification, green buyers' groups, and affirmative government procurement programs have all emerged over the past two decades. The concept – that managing forests for multiple uses within the bounds of ecological limits makes solid economic sense in both the short and long term – is gaining momentum.

Clearly, one of the largest and least-addressed obstacles constraining the expansion of the sustainable forestry sector worldwide is the industry's lack of integration into the capital markets and, consequently, its poor access to mainstream private capital. This is a particularly critical issue given the extent to which private capital flows to developing countries are rapidly outpacing public sector financing.

The global economy stands at US$55 trillion dollars, and continues to grow. In the United States alone, a total of $2.16 trillion in assets sit in professionally managed portfolios using some form of socially responsible investing screens (Social Investment Forum, 2004).

How can the financial power of private investments be harnessed to maximize the potential of well-managed forests to contribute to poverty alleviation, the protection of environmental services and sustainable economic growth in developing and transition countries? This question has been asked time and time again by numerous studies and numerous fora around the world.

The challenge will be to increase the amount of total investment – FDI or internally in developing countries – towards sustainable forest operations in developing countries. In this report we attempt to describe the major obstacles for investments in tropical forests at the global, national and firm level. We also take the next step and identify strategies to overcome these obstacles.

The findings of this study include:

1. ***More attention needs to be paid to supporting the growth of small and medium sized enterprises:*** In ITTO tropical producer countries, the forest product-related industry is quite diverse, spanning a broad range of firms and entrepreneurs, from individuals operating in the informal sector, to small and medium-sized enterprises to local manufacturing companies, to large multinational operations. The industry spans a broad range of products and services, from tiny chainsaw operations to large corporations that can have annual sales larger than the GDP of many small developing

countries. ***All have the potential to invest productively, create jobs and expand – thereby contributing to economic growth and poverty reduction.***

When discussing the need to attract investment to the forest sector in many developing countries, however, many organizations and governments tend to focus on attracting large-scale international investors. While most internationally traded goods are produced by multi-nationals, the majority of the markets (excluding pulp and paper) are domestic and produced by small and medium-sized domestic producers. The bulk of private financing also remains domestic.

Given the relative size of the domestic versus international markets and the potential for improvements in domestic producers' efficiency and their ability to contribute to growth and employment, very little attention has been focused on how to improve their business environment and company productivity. Little attention is given to relieving their constraints to growth.

Specific recommendations:

- Development agencies such as the World Bank and IFC create mechanisms to address barriers to growth for small and medium-sized enterprises. While development assistance to support small firms through credit lines and capacity building has had mixed results, donor programs could provide concessional loans or guarantees to support specific transactions. Intermediaries such as WWF's Global Forest Trade Network or Forest Trends' Business Development Fund could help identify where such programs might work.

2. ***There is no substitute for good governance in fostering a positive business investment climate:*** Good governance, including control over illegal activities, will do the most to foster responsible private sector investment and improve its contribution to social and economic development. Many good opportunities in developing countries are being by-passed not because of the investment itself, but because of the poor business environment in the host country as a whole. Policy-related risks dominate many firms' concerns in developing countries and cripple incentives to invest, innovate and increase productivity.

Specific recommendations:

- Governments, supported by donor programs, must work to improve the climate in which firms and entrepreneurs of all types invest. Governmental policies and behaviors will play a critical role in shaping the investment climate, by ensuring that firms are not saddled with unnecessary costs and procedures, stabilizing uncertainty and risk, and eliminating unjustified barriers to competition. Governments need to tackle corruption and other forms of rent-seeking, to build credibility with firms, to foster public trust and legitimacy and to ensure their policy interventions are crafted to fit local conditions.

- International firms can be more proactive in working with governments to make them aware of the negative impact of poor governance, by engaging in processes such as the regional Forest Law Enforcement and Governance ministerial process.

- Retailers and private financial institutions should require certified sustainable or legal wood products, ensuring they do not do business with companies that cannot guarantee legal wood sourcing – thereby helping governments to eliminate the problem of illegal logging which undercuts the profits of legal operations.

3. ***Skilled worker and labor markets are needed:*** Improving an investment climate goes hand in hand with enhancing human capital. Increased funds and modern technology will not improve an enterprise that lacks sound management, good products, sales channels and successful buyer relationships. For domestic and international firms alike, inadequate management and marketing skills of workers are a serious obstacle to tropical forest operations. To be able to participate in international finance markets or trade in the carbon market, many firms will need assistance.

Specific recommendations:

- Governments can foster a skilled workforce through basic education programs, consider labor market interventions that promote higher skills, and help workers cope with change. Tropical Forest Foundation training sessions for loggers in Brazil have been quite successful.
- International firms can invest in local workers – for example, the training that Global Forest Products does in South Africa – rather than importing workers.

4. ***Investment and risk guarantee mechanisms which work in developed countries need to be adapted to the tropical natural forest context.*** Despite the wide diversity of industry operations and a parallel wide range of investment opportunities of different sizes, products, degrees of capital equipment intensity, markets and means of accessing finance – many investment mechanisms in use in developed countries today, such as TIMOs, are simply not useful in the tropical natural forest-based industry due to long term country risk. In most cases, these tools are simply not applicable in the developing country context. Security programs for responsible private investors could be supported.

Specific recommendations:

- MIGA and the World Bank Sector Guarantees could create funds to support the World Bank Groups new forest policy, which recognizes the role that responsible private investment can play in economic and social development in its client countries and helps to reduce insurance premia for sustainable forest operations.

5. ***Sharing the experience of sustainable forestry success:*** There are sustainable forest operations in developing countries around the world with attractive risk adjusted returns, which should be able to attract larger pools of investment capital. Investors such as GEF and Forest Trends' Business Development Fund (BDF) are working with these types of operations to improve their management efficiencies, as well as enable them to access multiple income streams from several ecosystem products and services, rather than timber alone. The increased returns helps to counter the risk that may be externally imposed by a poor business environment in which they may be situated. Sharing the experience of positive operations will help to expand the model.

Investment promotion (IP) programs have been shown to work only if the overall investment climate in a country is already secure. However, forest investment forums based at the regional level, such as the one hosted by the World Bank, ITTO and others in Fall 2003, can raise the awareness of government about the need to address overall governance issues, as well as make investors aware of opportunities available to them in a particular region.

6. ***Stimulate demand for products made from responsibly-produced wood****:* In the corporate world, sustainable management methods must pass a basic value test of reducing risk, improving margins and enhancing growth. Several institutions are recognizing the importance of independent verification to ensure that forest products from developing countries maintain their credibility with environmentally-sensitive markets, especially in Europe. In October 2004, The IFC's LAC Small/Medium Enterprise (SME) Facilitation and WWF's Global Forest and Trade Network teamed up to launch pilot projects linking manufacturers, traders, and forest managers committed to the business of sustainable forestry. The objective is to stimulate demand for products made from responsibly-produced wood, improve business management and production of project participants, and promote financing and investment opportunities within supply chains.

Box 1: Introduction to Financial Terms & The Investment Decision-Making Process:

The language and terminology used by development organizations and economists often differs from those used by private sector lenders and investors – making common understandings of the issues difficult. This chapter introduces the major terms and concepts that are commonly used in the financial and investment field, and which are relevant to understanding the investment needs of private enterprises.

I. Terminology

Buyer credit: In the forest industry, buyer credit refers to a buyer advancing deposits or finance to the producer to cover expenses and the cost of goods (often for a specific order).

Capital: (a) Cash or goods used to generate income either by investment in a business or a different income property; (b) the net worth of a business or the amount by which its assets exceed its liabilities; (c) the money, property and other valuables which collectively represent the wealth of an individual or business. These can include debt and equity.

Capital Structure: The permanent long-term financing of a company, including long-term debt, common stock and preferred stock and retained earning. It differs from financial structure which includes short-term debt and accounts payable.

Cash Flow: The movement of money into and out of your business; it's the cycle of cash inflows and cash outflows that determine a business' solvency

Cash Flow Analysis (also known as cash flow forecasting, cash flow projection): Study of the cycle of business cash inflows and outflows, with the purpose of maintaining an adequate cash flow and to provide the basis for cash flow management. Cash flow analysis involves examining the components of a business that affect cash flow, such as accounts receivable, inventory, accounts payable, and credit terms. It adjusts for non-cash revenue and expenses to arrive at "cash flow." Banks practicing professional credit analysis use cash flow analysis to determine the probability of repayment.

Cash flow analysis of conservative short-term credit may be based on the timing of a companies' collection of invoices receivable, or in the jargon of bankers, "self-liquidating" assets. Long term creditors look more deeply into competitive aspects of companies to forecast cash flows and debt service capacity into the future.

Lenders do not have management control over their customers (except in cases of distress or default). Neither do they participate in profits like equity holders. Therefore, they generally shun considering long-term and medium-term loans unless they have adequate security from liens on sellable property or guarantees from a first-tier bank.

In the tropical markets, banks apply the same conservative formula to all loans and avoid making loans that do not offer riskless profits at high spreads.[1] They concentrate on the value of the collateral and real estate the borrower can offer as security. This may exclude even profitable companies that do not have property or bank guarantees to pledge as security. Recent field research shows little willingness to alter their lending formula, as a track-record of no losses increases their ability to compete for international bank to bank loans. For them, it is preferable to invest in relative low-risk government securities and conduct profitable foreign exchange transactions.

Company risk: Firm level risk, which is affected by management decisions at the firm-level.

[1] A "gross spread on funds" is the spread between the borrowing costs of a bank and the interest rates charged.

Country risk: A term usually used to describe the potential volatility of foreign stocks or the potential default of foreign government bonds due to political and/or financial events in a given country. However, this term can be used to describe a major wider range of country-level factors which affect the opportunities and constraints of an investment, as measured by international credit analysts. It is similar in ways to the indices used by the World Bank's Investment Climate surveys.

Discounted cash flow analysis (also known as capitalization of income): A method of evaluating an investment by estimating future cash flows and taking into consideration the time value of money. Discount rates are applied to cash flows, reducing the present value of future cash flows from operations and the "terminal" value of the company at a future point in time. It reflects that money today is worth more than money in the future. Higher risk results in higher discount rates, which translates to lower present value of the investment.

Discount rates are the results of unbiased statistical market data where the calculation of discount rates involves analyzing a historical range of returns of a class of assets in that country's security markets. Analysts compute average returns and volatiliy of prices. For example, the Australian forestry industry showed a range of returns[2] varying from 10% to 30% over 10 years. The mean average returns for that asset class would be 20%, and the standard deviation of this group of returns roughly 10%.[3] The 10% standard deviation would be Australian "risk" in forestry. If the range of returns, however, were from -10% to 40% for forestry companies in a developing tropical country, the average would be 15% and the standard deviation about 25%. In this case, 25% would be the developing country forestry "risk."

Equipment leasing: Leasing gives companies the use of equipment but not the ownership. It refers to financial companies procuring equipment for businesses. Leasing resembles a medium-term rental agreement with an option to buy the equipment at the end of the term for full market value. The lessor maintains title to the equipment until the term of the lease. It is similar to renting the equipment with an option to buy.

Industry risk: Supply and demand conditions at the market level, and forestry operational constraints and opportunities at the country and local level, factor into calculations of risk to the industry as a whole.

Investors: In the investment and banking sector, "investor" generally refers to providers of equity or long term debt and investors in listed securities. In casual use in the forestry industry, "investor" may refer to any provider of capital, whether equity, debt, bond underwriter, asset manager, mutual fund portfolio, venture capital, or working capital.

Lender: Banks, finance companies, creditors, and informal sector money lenders.

Return on risk: This ratio reflects the balance between the desire for the lowest possible risk and the highest possible return, and is usually measured as a standard deviation (a higher standard deviation means a higher risk and higher possible return).[4]

Lower expected return with less risk may be preferable to potentially higher return but at a higher risk (such as in a developing country with instable political and economic indicators). The return on risk explains why investors prefer to invest in forests in "low risk," developed countries where the range of returns is narrow and more predictable.

Supplier credit: Credit through delayed payment terms from a vendor or supplier extended to a producer, advancing raw materials or goods but deferring payment. In large-scale paper and forest product syndicated project finance, supplier credit can be an integral component of the financial operations.

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[2] Returns defined as: (Net Income+Dividends)/Equity.
[3] Depending on whether the statistic is for a broad range like an entire population, or a sample.
[4] The Sharpe Ratio measures how much extra return (beyond the return on treasury bills) a company earned per unit of risk, where risk is measured by standard deviation of returns.
[5] "Permissible country" indexes are published regularly by Calpers (the California Public Employees' Retirement System).

II. The Investment Decision-Making Process

For listed enterprises, investors carefully define eligibility criteria, classifying securities according to a variety of geographical factors, industry and economic factors, market risk perceptions and the characteristics of the individual investment. Preference for capital providers depend on parameters such as the size of the customer, maturity of the facility (time horizon), market liquidity and the risk and reward expectations. Other factors may include the customer's stage of growth, patterns of cash flow, capacity to repay loans, and potential to compete, grow profits and increase company value.

Analyzing tropical forestry companies in remote areas of wilderness in a developing economy is entirely different from analyzing publicly traded companies in OECD countries. Understanding the way investment decisions are made may help understand the reasons why investors have been biased against investing in forestry in tropical countries.

The liquidity and risk preferences of the security markets tend to allocate their investments to "permissible countries,"[5] in emerging tropical economies. In the tropical forestry sector, institutional investors play a direct role mainly in funding very large capitalized operations, timber investment management companies and forestry corporations. In the "middle market" consisting of established medium-sized domestic firms, their role is rarely direct. In the small business market and informal sector, their participation is imperceptible. Because institutional investors act as intermediaries in the capital markets, they need to justify the size, quality, value, and stability of their investments. Mutual funds for instance need market liquidity, meaning securities that can be quickly sold into markets that have very large numbers of buyers and sellers. This restricts eligibility to securities of large corporations such as major paper and forest product companies. At a minimum, tradable bond issues are mostly $100 million or larger.

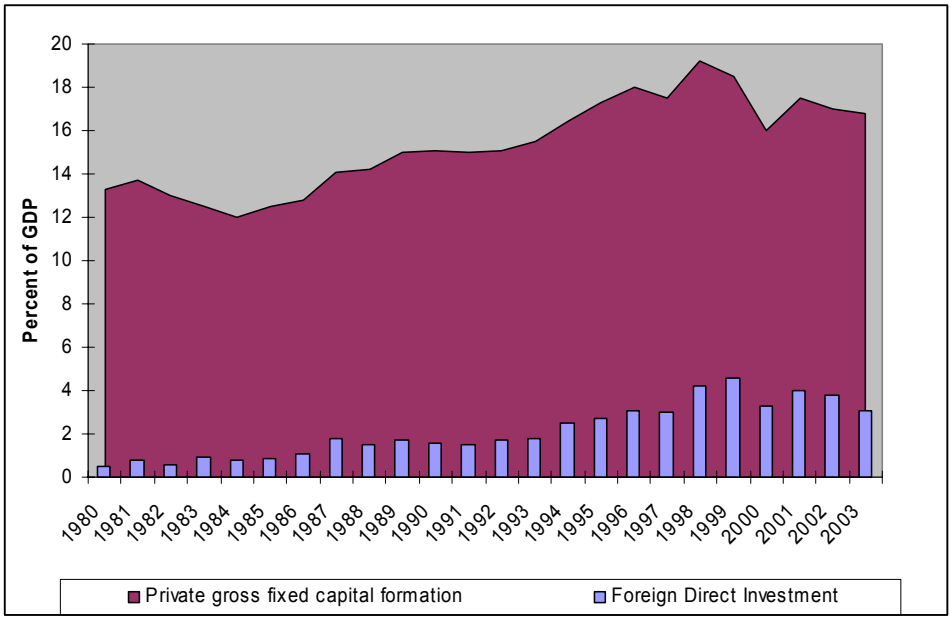
CHAPTER 1. INTRODUCTION

1A. BACKGROUND AND OBJECTIVES OF THE PAPER

Many in the global forest community are trying to identify ways to harness the vast financial power of private investments to maximize potential of well-managed forests to contribute to poverty alleviation, the protection of environmental services and sustainable economic growth in developing and transition countries. Several international experts have estimated that current levels of investment continue to fall far short of the amount needed to ensure that forests are not vulnerable to unsustainable management practices or conversion to other potentially less productive land uses.

Foreign direct investment (FDI) in the forest sector in developing countries now considerably exceeds official development assistance (ODA). While FDI remains important in developing countries for foreign exchange earnings, skills and technology transfer, the bulk of private investment remains domestic across all sectors (Figure 1). There has been a declining trend of cross-border investment by large multinational companies in primary resources.[6] The major timber companies invested in Asia and Latin America in the 1980s and 1990s pulled out and did not return even during the incredible growth of the global economy during this time.

Figure 1.1: Private Gross Fixed Capital Income / Foreign Direct Investment (% of GDP)



Source: World Bank (2004)

The global economy stands at US$55 trillion dollars, and continues to grow. Some estimate private capital available for investment opportunities will grow to 300 trillion dollars by 2020 (Brandt, 2005). A total of $2.16 trillion in assets in professionally managed portfolios in the United States alone is using some form of

[6] The notable exception is the rising overseas investment of Malaysian companies (such as Rimbunan Hijau and WTK) in palm oil plantations and timber concessions internationally, but which have been the subject of severe criticism from environmental groups.

socially responsible investing screens (Social Investment Forum, 2004). The challenge is to increase the amount of total investment – FDI or internally in developing countries – towards sustainable forest operations in developing countries.

With this in mind, the United Nations Forum on Forests (UNFF) sponsored analyses and a conference in 2000, entitled "The Private Sector Speaks." The World Bank and partners convened the Forest Investment Forum in Washington, DC in 2003. This event was one of a series of high profile gatherings and major reports that covered this issue of capital investment in forests, including the 1998 Forest Trends document, "Capital Markets." NGOs and the private sector have also been increasingly active in new partnerships, funds and mechanisms to promote responsible investment in enterprises based on sustainable forest operations.

A UNFF Conference in 2000 and the World Bank Forest Investment Forum were motivated by the same general finding: more responsible investment is needed. The Forum also identified major constraints to this goal, including:

i. *insecurity of raw material supply and political instability,* which represent risks for investors and threaten the continuity of manufacturing operations
ii. *illegal logging and forest-related corruption,* which undermine the efforts of responsible private sector players
iii. *underdeveloped markets for forest ecosystem services,* which could bring financial benefits to forestland owners and managers
iv. *inadequate financial mechanisms and technical assistance for small and medium-sized enterprises*
v. *debate on the impacts of plantation forests* and where and how plantations forests can be developed
vi. *inconsistent guidelines or lack of consensus on environmental assessment procedures and safeguard policies, independent certification and strategies for the protection of high-conservation value forests (HCVFs),* which also create an uneven playing field for the responsible private sector which make it difficult for responsible industry players to engage in environmentally-sensitive markets

These conferences and previous analyses have generally been global in scope. Analysis of finance and investment issues in enterprises based on natural tropical forests has been lacking. This study updates the findings of the World Bank and UNFF, but limits the focus to tropical regions and more specifically, to *natural* forests and the industry that depends on natural forest management. It also highlights the different opportunities and challenges that arise for different sized and structured operations.

The purpose of this paper is to begin to address this gap with the ultimate aim of assisting ITTO member governments attract increased levels of investment for sustainable forest operations and related processing operations. The paper wishes to bridge the language and taxonomy used by official organizations and economists, with the terminology and analyses currently used by private sector lenders and investors – and thus starts off with Chapter 2 devoted to an introduction to terminology and the investment decision-making process. It also reviews emerging trends that will likely have a significant impact on investment in these tropical countries. It begins with a look at the complex nature and diversity of the tropical forest industry and the issues and challenges that it faces. We do this to help highlight the diverse and distinctive needs of each segment and business type (or investment opportunity) and how each can be affected differently by changes

in policy investment climate and governmental policy changes (Chapter 3). We identify the status of investment in these countries and show the challenges in identifying where the investment has been coming from (Chapter 4). Chapter 5 and 6 highlight how investment opportunities and constraints differ. Risk management tools are reviewed (Chapter 7). Finally, a summary of our findings and policy recommendations for ITTO member governments and international institutions can be found in Chapter 7.

CHAPTER 2. THE INDUSTRY BASED IN TROPICAL NATURAL FORESTS

2A. TROPICAL INDUSTRY IN THE GLOBAL CONTEXT

Globally, the forest products industry is a relatively large sector of the world economy, with the formal share of forest sector trade averaging 3% (FAO 1998). The value of international trade in wood products reached US$150 billion in 2003 (FAO Website, 2005). In terms of values, the gross value of world sales of the paper and pulp sector alone was estimated in 2000 to be about $900bn (Risk Transfer Magazine, 2003). At the national level, the forest industry can provide up to up to 13-15% of GDP in countries such as Gabon and Cameroon. Sub-nationally, it can be even higher: Malaysia's forest products exports are valued at between US$3.5-4 billion annually, and account for almost 30% of the total government revenues in the provinces of Sabah and Sarawak (AF&PA 2004).

Global demand for wood products, pulp and paper continues to grow. The Food and Agricultural Organization of the United Nations (FAO) forecasts from 2000 to 2010 a growth rate in industrial forest fiber consumption of 1.7 per cent annually from about 1.5bn m^3 to 1.9bn m^3. Global wood demand grew by over 50 percent from the 1960s to the mid-1990s, although consumption per capita was roughly stable (Gardner-Outlaw and Engelman 1999). Developed countries presently consume about 75 percent of industrial roundwood production (solid wood and panels), but demand in these countries grew by only 0.6 percent per year between 1961 and 1997. By contrast, consumption grew by 3.2 percent per year in developing countries during the same period (Victor and Ausubel 2000).

Global figures, however, tend to focus on the major internationally traded commodities. They mask the fact that the majority of global timber production never enters the international market, but are produced for the domestic market. Of the annual production of timber from tropical forests, an estimated 85% is for fuel[7]; 10% is for local timber needs and only 5% is for export (FAO, 2000). For example, 85-86% of the wood harvested in the Brazilian Amazon is consumed within Brazil. Log exports from west and central Africa account for only 20% of the 25 million m^3 harvested that year. Domestic demand for forest products in developing countries is projected to continue to rise dramatically in the next few decades, driven mainly by rising income and population growth. Non-industrial demand—for products such as fuelwood, construction materials, and rough furniture—is expected to be especially high in those countries in the early stages of economic growth (Forest Trends, 2003).

2B. TYPES AND CHARACTERISTICS OF THE TROPICAL NATURAL FOREST INDUSTRY

Particularly in ITTO tropical producer countries, it is important to recognize that the forest product-related "industry" is quite diverse. It spans a broad range of products, services, firms and entrepreneurs, from informal individuals to micro, small and medium-sized enterprises to local manufacturing companies and multinationals. Primary manufacturers can include chainsaw operators or small sawmills, or large corporations that can have annual sales larger than the GDP of many developing countries. All can engage in partnerships

[7] The global estimate is closer to 50% (FAO 2000)

or agreements between each other with arrangements such as outsourcing, outgrower schemes or middlemen situations. ***All have the potential to invest productively, create jobs and expand – thereby contributing to economic growth and poverty reduction.***

An estimated 80% of international forest products trade is conducted by transnational corporations (Gregerson and Contreras-Hermosilla, 2000). However, the majority of global wood products are sold domestically. Reflecting this, the majority of forest operations (excluding pulp and paper) are small to medium-scale. Globally, small and medium scale enterprises represent one of the faster growing industrial sectors in the world.[8] Brazilian small and medium sized enterprises have grown 2.8% and 4.7% annually since 1995 respectively – much faster than medium and larger enterprises. This is despite that fact that they have a higher turnover failure rate than larger companies, with 39% failing in Brazil within the first year[9] (Winrock and IIED, 2003). Logging by small and medium enterprises in Guyana contributes an almost equal amount to the revenue of the Guyana Forestry Commission as large enterprises (GFC, 2003). In China, more than 90% of the total value in wood products has been generated by small and medium-sized forest enterprises (Sun and Chen, 2003). Small enterprises in India are engaged in a wide range of products from simple fuelwood, charcoal, handicrafts and herbal medicines, to processed sawn timber, furniture, veneer, plywood, fiberboard, particle board and paper. Small and medium sized forest enterprises[10] (SMFEs) comprise a significant percentage of the total number of forest enterprises in Brazil, although they contribute less to total employment and production due to small capacity and lower number of employees per enterprise (Table 2.1).

Table 2.1: SMFEs as a Percentage of Total Brazilian Forest Enterprises, Production and Employment

	Share of SMFE	Share of SMFE employment	SMFE Total Production
Harvesting operations	98.2%	49.5%	75%
Wood processing enterprises	98.9%	70.4%	
Furniture manufacturers	98.9%	69.9%	

Source: adapted from May, da Vinha and Macqueen, 2003

[8] IIED, in its discussion paper "Small and Medium Forest Enterprises in Guyana," lays out a framework describing the characteristics of many small and medium-sized forest enterprises and the challenges that they face compared to their larger competitors:

- local ownership and management without access to a larger body of corporate protocols, expertise and advice (social isolation)
- heavy reliance on immediate financial resources of owners, usually without substantial financial reserves (financial vulnerability)
- little influence over the market (due to low market share) and little influence over those who govern the market (political marginalization)
- expediency – driven by immediate needs without the reserves or scale efficiencies to implement long-term sustainability (corporate expediency)

[9] A 39% failure rate for start-up companies is a relatively average figure across all sectors globally. In the United States, 90% of all start-ups fail within three years (Small Business Association, 2004). Approximately 12% of year-old businesses who are clients with Barclay's disappear within 6 months (Financial Times, 2005)

[10] Defined as having fewer than 99 employees

2C. CHALLENGES AND OPPORTUNITIES DIFFER ACROSS THE SECTOR

Each type of business (or investment opportunity) can be affected differently by changes in international and domestic markets, as well as changes in governmental policies and general business environment in-country (country investment climate). We attempt here to describe some of these challenges and opportunities and how they differ according to a firm's characteristics.

Foreign vs. National

Foreign firms often face regulatory barriers intended to protect local or state firms and are vulnerable to nationalization or expropriation, but usually have greater access to financing and are able to relocate in response to adverse changes in the investment climate or events of civil strife. Several large international companies have annual sales larger than the GDP of many developing countries, and in many countries are likely to have significant influence within the business and policy-making communities.

Foreign firms are more likely to be export-oriented,[11] which is important to governments which place a high priority on export earnings. They therefore rely more on longer transportation connections from forest to port and are more vulnerable to variances in the international market, and relations with customs agencies.

Foreign firms typically appear to have greater access to financing at better interest rates, and have more options for dispute resolution (either through an international body, or using their own government's embassy to intervene). Foreign firms are most likely to be innovative and rely on technology. CIFOR's surveys of 30 concessions[12] in central Africa highlighted an important difference between national and foreign capital-based concessions: while employment figures do not differ, productivity (amount of timber produced per worker) is significantly higher for the foreign firms (CIFOR, 2003).

Small and Medium Sized versus Large Enterprises

A sub-set of small and medium-sized enterprises consists of forest communities or indigenous groups – a growing group of legal owners or managers of the world's forest. In many respects, they face the same challenges and constraints common to small domestic firms

Large firms will share many of the characteristics of international firms; with more business and assets they have better access to capital and can better absorb fixed administrative costs such as permits, licenses, certification costs or even bribes. Large firms are also more likely to be export-oriented towards higher value markets. In Brazil, for example, while 63.7% of exporters (across all sectors) were small sized enterprises, these exports were only 12.4% of the total value of exports (Table 2.2).

[11] Transnational corporations, conduct an estimated 80% of international forest products trade. (Gregerson and Contreras-Hermosilla, 2000)

[12] This sample of 30 concessions cannot technically be considered completely representive

Table 2.2: Exporting Medium-Sized Enterprises and export value as a proportion of all exports

	Number of Exporters	Value of Exports
Micro enterprises	34.2%	5.4% (US$2.97 billion)
Small Enterprises	29.5%	7.0% (US$3.87 billion)

Source: FUNEX 2000

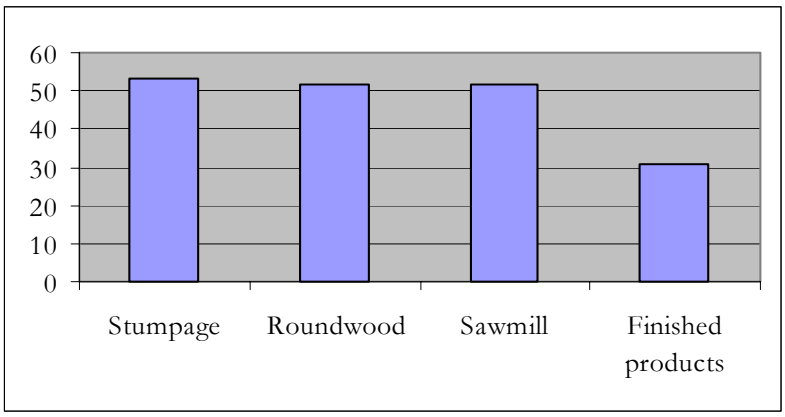
CIFOR's study of 30 concessions in central Africa finds that larger firms are able to more easily withstand or mitigate difficulties in the overall business environment, possibly indicating that very large concessions have better expertise, capital and other resources to meet the challenges. Smaller concessions can focus on local markets and therefore avoid international competition and many of the challenges that require international-level skills. Medium to large concessions have the worst combination: too small to benefit from significant access to capital and other resources, but large enough to have to compete internationally.

Many of the smaller enterprises – in particular those which are community-based – have only recently been able to register and move from the "informal" to "formal" sector. As new enterprises, they had to quickly gain experience and resources to comply with existing regulations or quality criteria for the export market. SMFEs have less capacity to implement social and environmental standards for sustainability, and are more likely to be producing "chainsaw lumber" which is generally preferred for the domestic market as it is cheaper but more wasteful. Lack of capacity in governmental extension services has in many cases led to a situation where local or international NGOs substitute for state forest extension services available in many developed countries. A recent review found that most indigenous groups filing forest management plans usually required subsidized assistance (SF and MDSP 2001, as reported in CIFOR Boscolo and Vargas Rios 2004).

SMFEs face higher constraints to entering the certified market due to certification costs, difficulty in marketing small volumes of certified wood, access to buyers, and product quality issues. International certification schemes are now beginning to find ways to alleviate the higher burdens that smaller and community-based forest enterprises bear when entering the certification process. Associations can play a strong role in countering the disadvantages of scale for small enterprises.

Some SMFEs have successfully overcome these barriers and are showing significant profits. Figure 2.3 shows the incredibly high profit margins of some community groups in Oaxaca, Mexico (in this case vertically integrated). However, it is not just the profit ratios but also the absolute amount of profit available to shareholders that raises significant (especially international) investor interest in manufacturing operations.

Figure 2.1: Community Enterprises in Oaxaca, Mexico: Profit Margins of 4 Stages of Vertical Integration



Source: Antinori, 2001

Informal vs. Formal sector

Many of the smaller forest operations operate in the informal economy and are usually considered illegal. Some are avoiding paying taxes; others cannot cope with the complexity or legal requirements to register as a formal business. Many have no incentive to formally register to become "legal." They may or may not be involved in unsustainable or illegal harvesting operations. Because of their high numbers, they can employ large numbers of rural people: an estimated 17.4 million people (full-time equivalents) earn their living from formal sector forest-based employment (i.e., enterprises with over 20 employees) in forestry, wood industries, furniture, and pulp and paper, but another 30 million are estimated to be employed if informal employment is also included (ILO, 2001).

Informal firms face many of the same constraints as other small firms, including insecure property rights, corruption, policy unpredictability and limited access to finance and public services. In fact, they are often more vulnerable to these problems. In the domestic markets of Cameroon, "informal taxes" levied by corrupt law enforcement officials represent between 30-50% of total expenses for the seller.

Rather than simply banning these operators, some countries are proposing measures to progressively encourage legal registration (Plouvier et al, 2002). Allowing these operators to become "legal" increases revenue generation for the local and national economy, and benefits the local entrepreneur by facilitating access to better credit to expand their activities. In Bolivia, law changes in the mid-1990s made commercial forest use accessible to previously disenfranchised and "illegal" groups such as indigenous communities, small timber extractors and private landowners. By 2002, these groups were actively managing more than 1.6 million hectares and actively contributing to the local economy.

Rural vs. Urban

Rural areas, where the majority of forest operations are located, face unique challenges, such as increased costs of infrastructure, human resource and labor, and often public service expenses. Many forest operations find themselves providing health and education services to their workers and their families, or local

communities. In general, rural areas face greater policy uncertainty, and greater concerns about corruption and crime. For investors and lenders, rural operations are more expensive to analyze, monitor, and in the case of failure or default, liquidate the assets of the firm.

Box 2.1. Summary of Some General Characteristics of Enterprises

Foreign firms

- Often face regulatory barriers intended to protect local firms
- Vulnerable to expropriation
- Greater access to financing
- May be able to relocate in response to adverse changes in investment climate
- May have more options for dispute resolution
- Greater reliance on infrastructure due to greater likelihood to export

Size of firms

- Fixed costs (licenses, permit fees, generators, bribes[13]) a smaller percentage of total costs. While large firms may make higher payments, bribe payments as a share of sales can be 50% larger for small firms
- Greater access to finance, usually with lower interest rates
- Small firms stand to benefit more from investment climate improvements

Formal and informal firms

- Informal firms operate free to many tax and regulatory requirements
- Informal firms have less secure property rights, more difficulty getting public services and obtaining financing (400% of formal firms of similar size)

Rural vs. urban firms

- Rural areas increase cost of infrastructure and public service provision. Rural firms may need to provide health and education services to local communities or workers.
- Less access to finance
- Greater concerns about corruption, crime and policy uncertainty in rural areas

Source: Adapted from World Bank Investment Climate Surveys; WDR Survey of Micro and Informal Firms

2D. FINANCE NEEDS OF TROPICAL FOREST ENTERPRISES

All forest enterprises, regardless of their size or origin require capital: long-term capital costs for assets such as forest land, equipment, and then operational and fixed costs. Costs increase as the sophistication of the equipment rises, as the labor force is better trained and less temporary and as standing inventories increase.

Much of the attention on the investment needs of forest enterprises has focused on the acquisitions of major assets, with little attention going to the temporary financing needs to overcome temporary working capital problems.[14] In an ideal setting, cash reserves in bank accounts would be able to cover cash shortfall periods when costs temporarily exceed revenues or there are shortfalls caused by delays in receipt of sales revenues. Firms with cash shortfalls find their liquidity problems turning into solvency problems when they cannot pay

[14] Within the regular business cycle itself, there are periods of cash inflow (realized at point of sale) and cash outflows (purchase of raw materials, productive assets, operational costs such as transport and shipping, and recurrent costs such as inventories, forest management, payroll, maintenance, etc.).

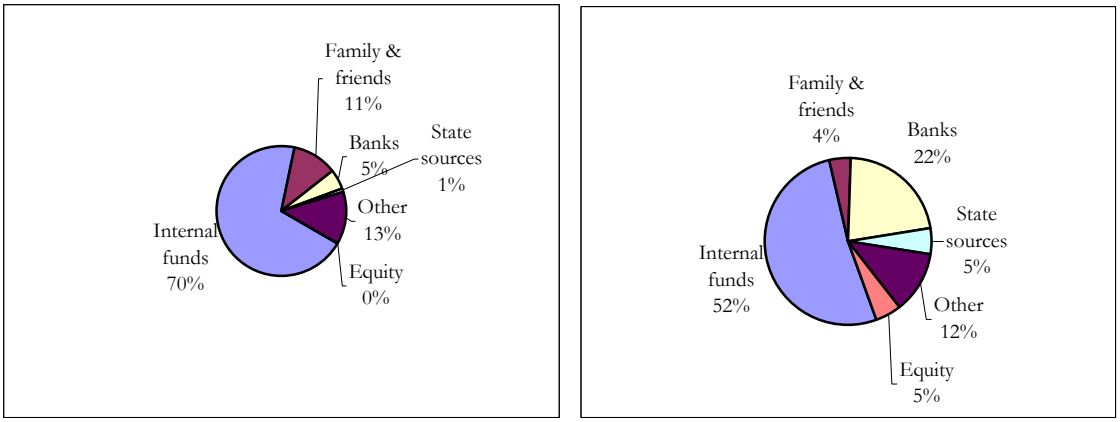
expenses or take on new orders while they wait to collect on the last sale. The inability to take on new orders or orders larger than usual places a severe constraint on a firm's ability to expand.

In economies with more developed and competitive banking sectors, commercial banks are used to bridge cash shortfalls or to fill a large order that would otherwise have to be declined for lack of liquidity or working capital. But in lesser developed financial sectors, it is common for banks to avoid retail credit risks. This creates a major operations capital barrier to small and medium operators in particular.

Borrowing for working capital only makes sense as long as the cash generates a return higher than the borrowing rate, which may be difficult in many developing countries where interest rates are high. Banks in many tropical countries, however, do not provide working capital to producers or medium-term equipment loans or access to capital for small and medium-sized forest enterprises. Many banks will only provide cash flow support if the company has property, real estate assets or other solid collateral. It is rare to find developing country banks providing lines of working capital based on the sales and inventory of the company (Fuge, 2005). Many smaller enterprises may access informal money lenders but face high interest rates, which makes this unsuitable for everything except emergencies. Multi-lateral institutions such as OPIC have programs to provide assistance to exporters, but often only for those with large sales (in excess of US$25 million annually for OPIC). In the absence of bank credit, companies are forced to pursue other options like supplier credit. Venders and laborers are sometimes, but not always, willing to accept delays in getting paid. Buyers may also be willing to make significant deposits or advance payments.

A recent report from the World Bank documents that large firms (across all sectors) get 32% of their funding from banks, government programs, and equity compared with only 6% for small firms. Small firms depend on internally generated cash and family to fund 81% of their business, compared to 56% for large firms. Equity for small firms is close to zero.

Figure 2.2: Small Firms' Sources of Financing & Large Firms' Sources of Financing



Source: World Bank Development Report, 2004

CHAPTER 3. GLOBAL TRENDS INFLUENCING INVESTMENT IN NATURAL TROPICAL FOREST INDUSTRY

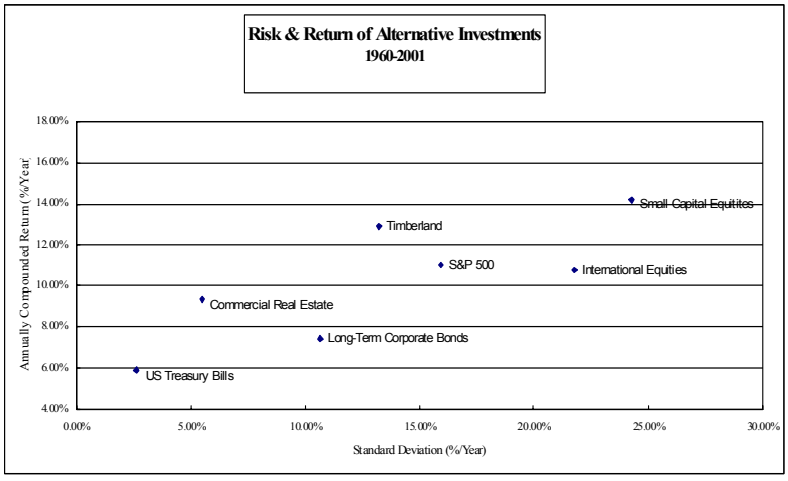
There are several emerging trends that will likely have a significant impact on investment in natural forests in tropical countries.

3A. GLOBALLY, INDUSTRY IS FACING LOW PROFIT MARGINS:

The forest industry is situated within the global economy and is vulnerable to fluctuations that have little to do with the forest sector. Over the past forty years, the global forest industry in general has been faring relatively poorly, which has resulted in low firm valuations. Globally, the sector has seen a decline in commodity prices, increasing global wood supply, a decreasing supply of low-cost energy, marginalization of the forest products industry in the capital markets, and declining management or analytical effort, especially in the public sector (Roberts, 2004).

This has been to some extent countered by a healthy return to risk performance of investments in timberlands in developed countries (Figure 4.1). Timberland assets have exceeded the return to risk ratio for other long term assets, such as commercial real estate, and are considered an excellent special alternative-asset whose biological growth properties fit the long-term risk/return and diversification needs of many institutional investors. The Harvard Endowment, for example, allocated approximately 12% of its $19.3 billion portfolio to timberland, reflecting its confidence in the returns to timberland.[15] However, timberlands in developed countries differ from the capital intensive industry itself, where there have been poor profit margins.

Figure 3.1: Returns on timberland compared to other investments



Source: Brand 2003

[15] In North America, many timber investment management organizations (TIMOs) have established partnerships to acquire and manage the forestlands sustainably and in a growing number of cases, with certification.

If globally profit margins are thin, they are thinner in developing countries. The capital markets have shown volatility in the stock returns of listed emerging markets companies. The Morgan Stanley Capital International Emerging Markets Index (MSCI) produced losses in eight of the last 15 years, including declines of 27.5 percent in 1998 and 31.8 percent in 2000. Even after a 51.6 percent gain in 2003, the index shows a net loss over the past seven years (Bloomberg data).

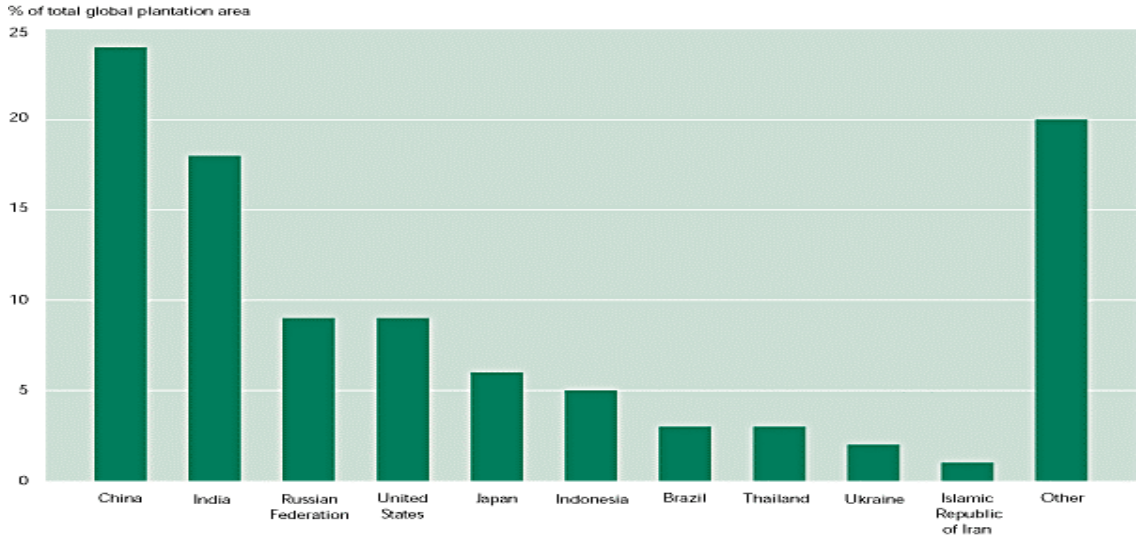
The benefits of lower costs in labor and raw materials in many tropical forested countries have been countered by factors related to an overall poor investment climate: the added costs of poor infrastructure and telecommunications, the high cost of capital, power outages, bribes and other inefficiencies. The World Bank's Investment Climate Surveys and other expert polls attempt to quantify the cost of country-level governance failures to the firm-level bottom line. Surveys of Cambodian businesses across all sectors report that 18.9% of their annual sales are lost due to 3 sub-indicators alone: percentage of sales lost for bribes, crime and electricity outages. For these same indicators, Brazilian surveys report losses up to 6.6% of sales, and in Ecuador 14.4% of sales. In expert polls, it is reported that the number of days required to enforce a contract in Brazil is 566. In Guatemala and the Democratic Republic of Congo, these numbers soar to 1459 and 909 days, respectively. This is compared to the average 280.2 days reported in high income countries, and the world average of 388.3 days.

With profit margins and risk perception as the driving forces behind investment decisions, opportunities in tropical forest operations do not look appealing to the general investor.

3B. PLANTATIONS DOMINATE INVESTMENTS

The tropical timber trade has undergone dramatic transitions in the last decade, with a significant shift *away* from the use of natural forests and expanding the role of plantation forests for commodity-type projects as native forests are depleted. Globally, ten countries now account for 80% of the global forest plantation area, with China (24%), India (18%), Russia and the United States (9% each), Japan (6%) and Indonesia (5%) taking the lead (FAO 2000). It is estimated that by 2050, 40-50% of the world's industrial wood production will come from plantations compared to 15% five years ago (Bull et al, 2004).

Figure 3.2: 80% of global forest plantation area in 10 countries



Source: FRA, 2000

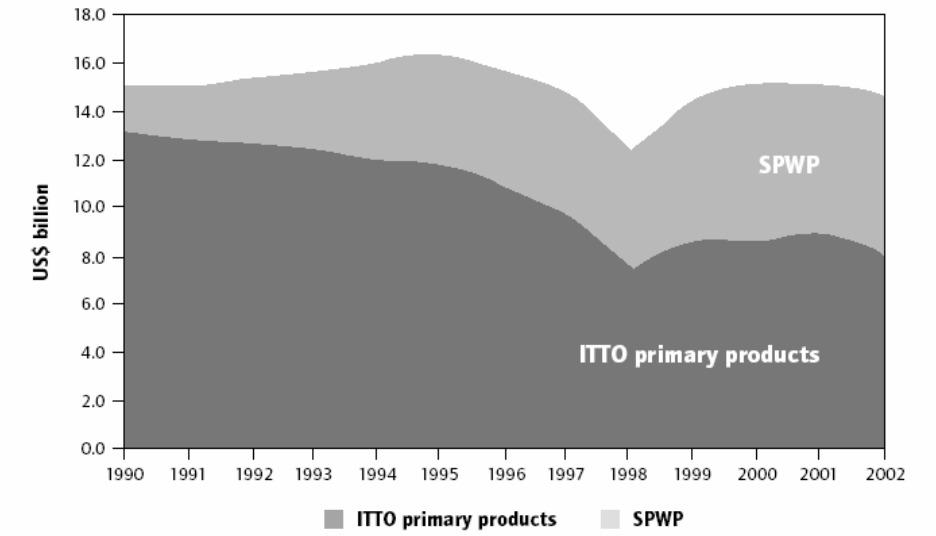
Rightly or wrongly, governments justify large subsidies for plantations – usually about 75% of total costs – in order to increase domestic timber supplies, provide low-cost wood to industry so they can be competitive, and to "decrease pressure" on natural forests. Government subsidies of US$35 billion went into the industrial forest sector between 1994-1998, with US$30 billion invested in non-OECD countries (van Beers and de Moor 2001). Malaysia alone had direct payments of average annual subsidies of US$263 million in 2002. China had US$78.6 million in average annual subsidies between 1974-1997 and plans a total of subsidies (direct and indirect) of US$1 billion per year for the next 10 years (Barr and Cossalter, 2004). Countries are also using more indirect subsidies (e.g. tax breaks for companies) which are harder to track (Bull et al, 2004). Some international investors see plantations as a stable investment with less uncertainty than natural forest investments. Others cite the controversial nature of plantations on social, economic and environmental grounds.

Given their market share, plantations affect product prices. Between 1980 and 2003, prices have increased for plantation wood but decreased roughly US$4.50 - 18 m^3 for wood from natural and semi-natural forests (Bull et al, 2004). The export value of primary products (logs, sawnwood, veneer, and plywood) from natural forests in ITTO producer countries has declined some 40 percent – from US$13 to US$8 billion per year since 1990 *(see figure 3.2, ITTO)* At the same time there has been rapid growth in the secondary products exported – up some 200% since 1990 and in the amount of land in ITTO member countries dedicated to plantations – up from 28 to over 60 million hectares. Plantation products are the majority basis for the secondary product industry and plantation products (including pulp, paper and reconstituted panels) now constitute the majority of the value of the aggregate tropical timber trade (Scherr, White, and Khare for ITTO 2004).

At the same time that plantations are expanding rapidly, supplies from natural forests are dropping. In some countries, reliable sources of raw timber from natural forests have simply disappeared as forests dwindle. The Philippines, for example, no longer has a natural forest industry, as their forests were depleted by the early

1990s. In Mexico, while forest area has been maintained, the availability of large-diameter trees is rapidly shrinking – forcing several sawmills which relied on natural forests to close (Fuge and Martin, 2004). In many tropical countries, unclear guidelines for certified forest production operations or environmental concerns about harvesting activities in high-conservation value forests (HCVFs) could be having a "chilling effect" on investments.

Figure 3.3: Tropical Timber Export Trends



Source: ITTO, 2003

Investment of many types is flowing into industrial plantations around the world, particularly in the stable tropical OECD countries such as Australia and New Zealand where country risk is low (Brand, 2004). In 2000, officials were anticipating more than US$2.5 billion in private investment in the forest sector, mainly in plantations by 2010 (Castellanos, 2000). Generally private investors tend to prefer investing in plantations over natural forests due to the predictability of plantation operations, and, if a large company, to supply their raw input demands. The attractive properties of plantations are predictable output and short rotations which reduce risks. Sustainably managed natural forests and plantations in developing countries are more difficult to fund (Brand, 2004).

3C. LAND TENURE HAS BEEN A HISTORICAL PROBLEM BUT HAS BEEN GETTING BETTER

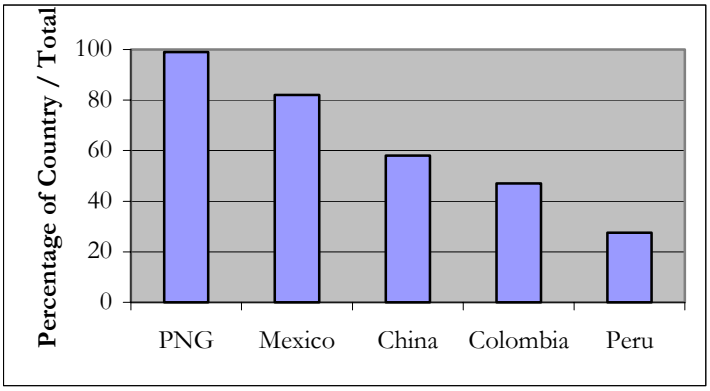
Secure property rights have long been recognized as a precondition to private sector investment. It brings confidence to buyers and their lenders involved in the property transaction. The reduced risks usually result in higher prices offered once land has been titled: price increases between 43-81 percent for rural land were reported after titling in Brazil, Indonesia, the Philippines and Thailand (World Bank, 2003). Investors interested in land for forest operations recognize the risk associated with unsolved land or rights-to-use

claims from indigenous groups and others, and will consider this unassumbable risk.

While 75 percent of forests in developing countries are still controlled by governments, indigenous and other rural communities now own or control a quarter of all natural forests in tropical developing countries because of public forest tenure reforms worldwide. This share is projected to double by 2020 (White and Martin 2002). Papua New Guinea and Mexico have the highest rates of national forest held privately by communities or indigenous groups – 100% and 80% respectively (Figure 3.4). While still low compared to traditional industrial concession regimes, the number of groups with the right to commercially use forest resources in Bolivia has increased since 1997 from one (industrial concessionaires) to more than four – now including local community association groups, and indigenous groups (Figure 3.5). Cameroon opened the way for community and family forest operations in the last decade, starting with a new 1994 Forestry Law.

These steps to clarify land claims and secure tenure rights begin to give investors confidence in property transactions and investment, and give local peoples the incentive to start investing in their own enterprises.

Figure 3.4: Percentage of Forest Privately Held by Communities or Indigenous Groups



Source: White and Martin, 2004

Table 3.1: Bolivia forest access by right (hectares managed according to authorized plans)

Year	Industrial Concessions (new regime)	Industrial concession (old regime)	Local Community Associations	Indigenous territories	Private Property	Total
1997	5,498,017	361,721	0	0	0	5,859,738
1998	5,516,615	339,000	0	121,609	93,443	6,070,667
1999	5,330,853	294,002	0	141.150	199,791	6,024,437
2000	5,301,520	294,002	0	238,259	239,670	6,074,862
2001	4,972,447	112,000	407,721	444,406	351,344	6,194,856
2002	4,443,012	112,000	423,203	555,681	561,911	6,102,037

3D. GROWING RECOGNITION OF IMPACTS OF ILLEGAL OPERATIONS AND CORRUPTION

There are no data to show that illegal logging and associated trade has increased in recent years – it has likely always been high. However, there is increased recognition of the cost that illegal activities in the forest sector

are imposing on legitimate business operators by undercutting the market. The G8 nations put the topic of illegal logging, corruption and associated trade on the agenda in 2005 under the UK Presidency, and the Russian G-8 presidency in 2006 has kept the issue high on the agenda.

Using a conservative definition of "illegal forest activity" and a conservative methodology, a recent paper commissioned by the America Forest Products Association (AF&PA) estimates that illegal wood fiber flows within and between selected producer and consumer countries represents between 15% of the global industrial hardwood produced for both domestic and export markets (AF&PA, 2004). Other reports with different data sources and methodologies show higher figures, with figures often shooting up to levels such as 90% in selected countries. The AF&PA analysis continues on to show that as much as 23-30% of hardwood lumber and plywood traded globally could be considered "of suspicious origin."

The World Bank estimates that governments alone lose up to US$15 billion per year in lost tax and royalty revenues due to illegal felling, but this does not show how much legitimate businesses are losing. An economic model used by the AF&PA report estimates that illegal material entering the markets depresses world prices by 7-16% on average.

Illegal operators have lower costs than legally organized companies. This competition is apparent in the domestic sawnwood market where legally established entities in Bolivia have been displaced almost entirely by small illegal operators and "motosierrista" (Boscolo and Vargas Rios 2002, USAID 2002). Originally affecting the large concessions, this is now beginning to affect the new legal Bolivian forest users – the local communities and indigenous groups which are in much more direct competition with these small illegal operators and which are more dependent on the domestic market than the larger concessionaires (Boscolo and Vargas Rios, CIFOR 2004).

Corruption also has high costs. Over 80% of all firms operating in Cambodia (not just forest sector) report paying bribes to individuals in authority, with the total cost representing up 6% of all sales. 60% of firms operating in Ecuador and Guatemala pay bribes, costing them 5.4% and 75% of total sales, respectively (World Bank Investment Climate Surveys, as reported in World Development Report 2004).

Unfortunately, many of the solutions often suggested to address the problem of illegal operations, corruption and associated trade impose additional costs on not only the illegal operation, but also the legitimate operator. It has been difficult to identify solutions which reduce the spread between the costs and risks of operating illegally and the costs of operating legally. Unless regulatory and law enforcement efforts are designed carefully, both legitimate and illegal operations will suffer, driving down margins and investment prospects.

3E. THE GROWING DEMAND FOR LEGALLY VERIFIED WOOD PRODUCTS

Many of the world's leading buyers of wood products are increasingly moving towards purchasing policies that favor sustainably certified or legally verified wood products. Due to intense NGO and media pressure, one of the largest retailers in the UK, Woolsey, was forced to announce it would suspend all purchasing of Chinese plywood due to their suppliers' inability to prove the legal provenance of the product (Woolsey, 2005). Exporters who want to maintain their market share in Europe, for example, will soon likely need to show adequate due diligence in the sourcing and supply chain tracking of their products. Financial premiums

for certified or legally verified woods have yet to be systematically proven.

Trade intermediaries, particularly do-it-yourself (DIY) retailers in western Europe such as B&K UK, Kingfisher, Home Depot, and IKEA have been the major catalyst to move markets towards certified products. At the minimum, supply chain tracking is usually required. Most require certification, but are accepting a phased approach that at a minimum verifies legally-sourced products. National[16] and local governments in Europe are also launching public procurement policies requiring all public purchasing of wood products to meet minimum criteria of legality, or in some cases, sustainability. The European Union launched the EU Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan, which covers technical assistance for producer countries to address illegal logging and trade, measures to address trade in illegal timber, an EU public procurement policy, and initiatives on financing and investment safeguards. Voluntary Partnership Agreements (bilateral cooperation agreements) under the EU FLEGT Action Plan would include joint EU and producer country commitments to only trade legally sourced wood products using a certificate system issued by the producer country. 3rd party verification would be expected, at an estimated cost of US$0.80 to $2.60 per m^3 – but this cost could be recouped with improved tax collection.

Industry is alert to the increasing attention paid to illegal logging and its associated trade. The Sarawak Timber Corporation finances microchip log tracking system for Sarawak industry. Congolaise Industrielle de Bois (CIB), a timber company, has a 1 million hectare concession in the Democratic Republic of Congo working with the Tropical Forest Trust towards FSC certification. Community-based forest operations are also working to get certified, such as three communities in SouthEast Sulawesi in Indonesia where farmers have organized to form a cooperative with guidelines for certified sustainable teak management on smallholder farmers' properties – expected to cover more than 8,000 ha in the next 5 years (TFT, 2005).

The increasing demand for legally verified or certified sustainable wood products will affect investments in those enterprises that export to environmentally sensitive markets, primarily in Europe, North America, Japan and Australia. Retailers in Europe are reviewing their entire supply chain to verify the legal-sourcing of their wood products, and are beginning to eliminate those that refuse or cannot comply with requests for proof. Sawmills in Indonesia which could not pass an audit demanded by traders in the UK and Netherlands were asked to improve their situation or lose future contracts.

Enterprises in Vietnam and Indonesia which committed to a Tropical Forest Trust Action Plan towards FSC certification within 5 years are gaining guaranteed long-term orders from buyers in Europe and gaining market access to better prices. Guaranteed and increasing market access is attractive factors to investors; the certification and verification movement is affecting who has and who does not have this market access.

Since 2003, more than 28 leaders in international financial business signed on to the Equator Principles (EP), committing all loans greater than US$50m to adhere to the environmental and social safeguard policies of the World Bank Group's International Finance Corporation (IFC). This represents more than 75% (more than

[16] In 2004, the UK government commissioned an assessment of the 5 major certification schemes used in the UK, to identify how well their claims of legality and sustainability aligned with the UK government's definition of "legal" and, separately, "sustainable." All 5 schemes (FSC, PEFC, MTCC, SFI and CSA) qualified under the UK legal, but only CSA and FSC under the UK definition of sustainable. It is important to note that the UK definition did not include any socially-related parameters, and that most of the schemes would be able to qualify for both with minor modifications.

$55bn) of global project financing funds, and is becoming a de facto standard for foreign direct investment in emerging markets. For many of the EP banks, adopting the Principles is mainly about managing social, environmental and reputational risk, and avoiding potentially costly litigation that could damage their bottom line when financing projects of all kinds, including forest projects. Above and beyond the Equator Principles, 4 large banks (Citigroup, ABN AMRO, Bank of America and HSBC) have adopted specific forest policies. These policies apply to all financial (not just lending above US$50m) operations and call for "no financing of projects or companies [which are] involved in, collude with, or purchase timber from illegal logging operations." In the future, it is possible that financial interactions with these banks (plus the Equator Principle Banks) will require some independently verified proof of legally and/or sustainable operations on the part of their clients. In early 2005, Citigroup publicly declared that their client, Rimbunan Hijau – a Malaysian logging company that environmental groups had targeted for alleged human rights abuses and illegal logging activities – would henceforth be required to obtain credible, independent third party (FSC) certification for its Papua New Guinea operations (Citigroup website, 2005). At this point, however, these initiatives only directly affect international operators working with the largest financial institutions such as Citigroup. Most locally-based banks are not signed on to the EPs and do not have forest policies. Forest policies could have the unintended impact of "squeezing" even good operators to other lending institutions with fewer due diligence requirements.

To date, very few certified wood products on the market have been sourced from natural tropical forests. Export industries which cannot show legal origin will likely lose European markets, and the certified industries mainly located in developed countries will likely use this as an opportunity to expand their market share.

3F. EMERGING MARKETS FOR NON-TIMBER FOREST PRODUCTS AND ECOSYSTEM SERVICES

The past decade has seen the widespread emergence of markets for non-timber forest products (NTFPs) and other payment schemes for forest ecosystem services – such as watershed protection, biodiversity protection and carbon sequestration – around the world. At a global scale, these activities are nascent and still limited in scope and scale, but they may have the potential to be scaled up to regional, river basin or national levels with further developments.

The total value of direct ecosystem service payments in tropical countries is presently modest, but has grown dramatically over the past decade and is significant particularly to low-income producer countries. The total value of international trade for NTFPs is estimated at $7.5-9 billion per year. (Simula 1999). Domestic markets for NTFPs are many times larger; for example, domestic consumption accounted for 94% of the global output of fresh tropical fruits from 1995-2000 (FAO 2000). There is no way to know at this time how much total area of tropical forests receives financial benefits from these markets.

Roughly estimated, the annual value of direct payments for forest ecosystem markets in tropical countries is in the order of hundreds of millions of dollars (compared to the tropical wood products trade of approximately US$20 billion). Indirect payments, via ecolabeled products such as certified timber, tropical

tree crop products and other non-wood forest products, is much larger, generating approximately as much as several billion dollars a year (Scherr, White and Khare for ITTO, 2004).

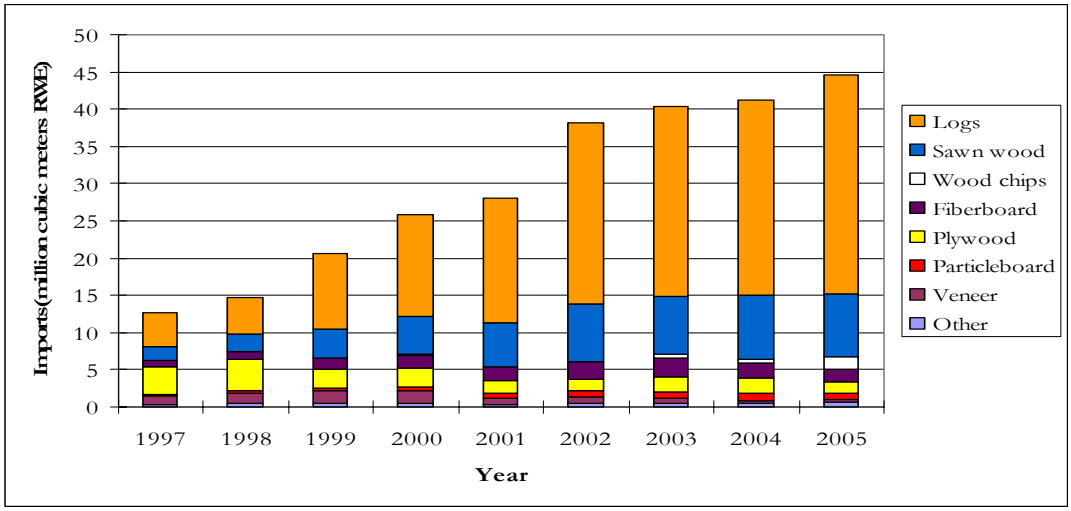
Global figures, however, can mask the critical regional, local or firm-level importance of some of these products or services. In the Vaca Diez province in northern Bolivia, exports of non-timber forest products (Brazil nuts and palm hearts) amounted to US$33 million in 1999 – more than twice the amount of timber exports from this region, and nearly half of Brazil's total amount of forest products exports (US$73 million) (CIFOR Boscolo and Varegas Rios, 2004). Managing forest land for multiple income streams, rather than just timber, can also significantly boost profit earnings at the firm level. In the United States, fees for hunting licenses on private land have become an important source of revenue – sometimes up to US$2,000 per acre.

At the firm level, payments for ecosystem services and products can theoretically multiply the revenue stream from forest lands and raise the return on assets if there is no change in cost structure or capital structure. From an investor's point of view, a higher return on assets is a major component of the overall return on shareholder equity. However, managing these activities may require more specialized management skills, equipment and costs than a singularly-focused forestry operation. Once again, uncertainties raise risk perceptions until a history of successful performance confirms the diversification.

3G. EMERGENCE OF CHINA AS COMPETITOR FOR PRODUCTS AND FOREIGN INVESTMENT

China's flourishing economy, coupled with policy constraints limiting domestic forest production, has resulted in skyrocketing forest product imports over the last several years (although mainly for primary products and not for processed products). In a decade, China moved from a ranking of seventh up to second among all nations in total value of forest product imports and is also now the top importing country worldwide of industrial round wood. China's forest product imports more than doubled in round wood equivalent (RWE) volume between 1997 to 2003, rising from 40.2 million to 95.1 million cubic meters (see Figure 1).

Figure 3.5. Increasing Imports of Wood Products into China, 1997-2005



Source: Forest Trends, 2004

This rapid increase in imports feeds China's expanding timber processing industry, which is being driven not only by growing domestic demand for end products, but also by international demand for exports of China's low-cost finished wood products, such as furniture. U.S. furniture makers, for instance, estimate that U.S. imports of Chinese wooden bedroom furniture have tripled in value from about $400 million in 2000 to an estimated $1.2 billion this year.

While the Chinese import market for primary wood products (logs and sawnwood) has increased, imports of value-added processed wood products (especially plywood and veneer) has decreased as its own processing capacity is developed (Figure 3.6). This could have major implications for industry in historical exporting countries such as Malaysia and Indonesia, which have seen their plywood exports to China decrease in the past few years. 42% of West and Central African hardwood logs in 2003 went to China, compared to 34% which went to the EU-15 – although the EU-15 accounts for nearly 90% of West and Central Africa's sawnwood exports (AF&PA 2004).

Due to the large demand for products as well as increasing competition from Chinese processing, industry and governments worldwide will need to re-think their positions vis-à-vis the Chinese market. Those that can capture the Chinese market and successfully compete with Chinese goods will survive.

The high domestic demand for Chinese wood products and the high demand for its end products has had another impact on the global industry: China has absorbed much of the foreign investment available globally. 80% of all new investment in pulp and paper in the world has been in China in the past few years (Don Roberts, 2004).

CHAPTER 4. TYPES OF INVESTMENT AND INVESTORS AND KEY RECENT EXPERIENCES

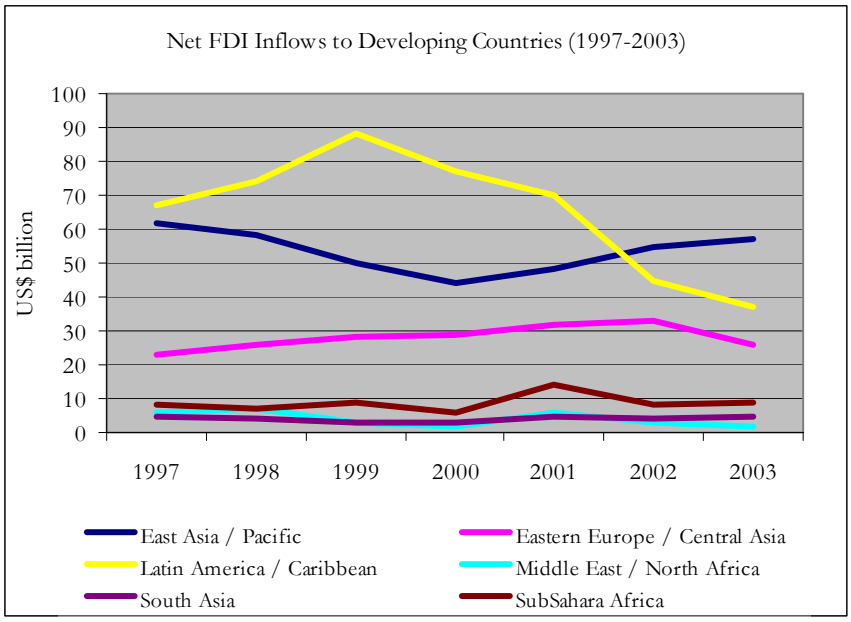
4A. TYPES OF INVESTMENT

Sources of financing can be broken down into several important categories, public versus private, equity versus debt financing, and cross-border versus domestic programs. This paper focuses specifically on private sector investments[17] and does not address the public Overseas Development Assistance (ODA). Neither does the paper deeply explore domestic public programs such as tax incentives or subsidized investment or loan programs.

Foreign Direct Investment

Globally and across all sectors, net private flows of finance continues to be the largest source of financial flows to developing countries, dwarfing official net flows of financing. Total ODA across all sectors has dropped by more than half since 1990. The majority of investments from ODA programs such as the World Bank focused on the development of policy and regulatory frameworks and institutional development rather than direct investment in forest management operations. This being said, however, the World Bank Group's International Finance Corporation (IFC) portfolio in forest and industry increased dramatically to US$348 and $400 million in FY2004 and 2005 respectively – mainly in three or four major countries such as China and Russia – a massive increase from the average US$60 million per year since 1992 (Olé Sand, 2004 and Spears, 2005).

Figure 4.1: Foreign Direct Investment (FDI)



Source: World Bank, 2004

[17] FDI and ODA can overlap if ODA funds are used to guarantee or co-invest with private sector funds.

Global flows of FDI have grown phenomenally over the last ten years. FDI figures in developing countries, however, remained relatively constant since 1997, but then rose 48% between 2003 and 2004 (to US$255 billion). FDI flows to Asia and the Pacific rose 55% over 2003 (to US$166 billion), with economic policy environment, higher corporate profitability and a rise in mergers and acquisitions fueling the growth. Strong prices for commodities helped FDI inflows to Africa increase to US$20 billion.

FDI figures, however, are of limited value to analysis of the forest sector. The data submitted by central banks is notoriously poor. The UNCTAD data for forest operations and industries (wood products, pulp and paper or forest management) has major gaps, is inconsistent or is inappropriately aggregated with other natural resources sectors such as agriculture or fisheries. Forestry investments may only be a segment of a large multilevel manufacturer or conglomerate and will therefore not be listed under the forestry sector. FDI figures track only equity investment with at least 10% control of the voting stock in the company, and ignore domestic finance, minority participation, loans and other non-equity cross-border flows. The figures also ignore foreign remittances to the families of expatriate workers, which now represent US$232 billion (almost double the flows of ODA) and might support investments in informal or small-scale operations (Financial Times, November 16, 2005).

It is important to note that FDI figures also exclude remittances from individuals living overseas to their families at home. According to a 2005 World Bank report, migrant remittances were recorded at US$93 billion for 2003 (Ratha, 2004) and estimated at US$200 to US$300 billion a year (Migrant Remittances, 2004). Remittance flows are second only to foreign direct investment and are significantly larger than official development assistance[18] in most developing countries. While studies tend to show that remittances are usually used to finance consumption, they in theory could form an important source of cash for family-owned micro- and small- sized forest enterprises.

From the tropical forestry point of view, FDI, therefore, covers exclusively the first tier of performing industrial firms and corporations and does not apply to the development of middle market and the small-medium sized forest enterprises. The best data is likely to come *ad hoc* from forest ministries or industry associations. For example, in 2001, Argentina reported current investment in forestry-related projects worth US$2 billion to be completed by 2011 with major participation by multi-national companies from the UK, US, NZ, Germany and Chile (UNFF, 2001).

Even without perfect information, it is generally assumed that while the forest industries may not have been the forerunners in the global trend of increasing FDI, there has also been a steep increase in FDI in the forest sector (Uusivuori and Laaksonen-Craig, 2000).

[18] "Measuring Migrant Remittances: From the Perspective of the European Commission," Mushtaq Hussain European Commission Eurostat. International Technical Meeting on Measuring Migrant Remittances, January 24-25, 2005, World Bank IFC Building, Washington D.C.

4B. TYPES OF PRIVATE SECTOR INVESTORS

There are many private sector investors that participate in the equity or debt financing of the forestry industry. The developed financial markets have many types of lenders and investors providing their chosen market customers with a large variety of credit and equity products and financial services. At this time, however, only a few of these choices are provided to forestry and forest product operators in developing country tropical markets except for industrial investment, plantation operations, and special venture capitalists. In the tropical emerging markets, only a few types of investors and lenders are relevant at this time due to country risk factors and investment climate problems.

In general, higher risk capital requires higher returns, or a "risk premium" of added return over more secure investments. Higher risk, earlier stage capital pools are also smaller in volume compared to lower risk, later stage pools (see figure 5.x). Capital flows most easily to investments that provide the highest risk-adjusted returns. Therefore, innovative or early-stage businesses have the most difficult access to capital, although the inertia of business and investment as usual should not be under estimated, especially in a tradition-laden sector like the timber industry (Best and Jenkins, 1999).

Investors

Domestic Investor: Given that tropical countries consume locally over 90% of forest production from small and community projects, and that the largest ownership is by small holders or communities, most enterprises will be mainly owner-financed.

International or Domestic Industrial Investor: Industrial investors invest strategically in forestry operations to use the wood as raw material inputs in their pulp & paper and manufacturing operations. Industrial investors gain harvest rights to forestlands through concessions from national and regional governments. Agreements give the companies the right to cut but seldom convey ownership of the land. Industrial investors may set up listed companies where stock exchanges allow companies to include these concession rights as qualified assets. The stock market listing gives the corporation access to large capital markets. The operations can be highly leveraged,[19] thereby permitting the corporation to control an enormous magnitude of forestry assets with very little of its own capital at risk. Banks lend the companies money, or investment banks issue fixed income bonds that find their way into wide public ownership and the portfolios of individual small investors. These highly-leveraged operations are very risky.

Investment Funds: Investment funds generally take minority stakes in the marketable securities (stock and bonds) of qualified forestry and forest product companies. They market shares in the fund to retail and institutional investors. This excludes their direct participation in non-listed private companies, which would include the middle market companies and informal forestry operations. Some investment funds, however, are specialized and deal with a private placement arrangement, marketing their partnership shares to a limited set of investors.

Hedge funds are specialized investment funds that take large undisclosed debt and equity positions in

[19] Leverage is the proportion of debt-to-equity in a business. Where debt funds a large proportion of assets, the company becomes exposed to fixed debt service obligations.

undisclosed companies. Regulations allow them to operate outside the same level of regulation and disclosure as public funds because they limit their investors to high net worth investors and qualified institutions. They are therefore sheltered from the scrutiny of the public and limited partners. GMO's Forestry Fund, which invests in certified forestry operations in select countries, is an example of a hedge fund partnership.

Timber Investment Management Organization (TIMO): TIMOs are investment funds that actively manage forestland assets on behalf of other investors, such as pension funds and wealthy private investors. The rapid growth of TIMOs has been attributed to institutional investors' attraction to forestland with long term bond-like patterns of returns and high returns-to-risk. TIMOs are found in countries where investors feel comfortable taking 20 to 30 year equity positions. Hancock Timber Investment Fund is a good example.

Pension funds: Retirement funds have grown to be important players in long-term timber investment in developed financial markets. Pension funds are often partners (shareholders) in TIMOs that manage their forestry assets. The purpose of a pension fund portfolio is to provide coverage of future retirement liabilities. Therefore, pension funds seek long term assets to match the timing of cash inflows against long term liabilities to retirees. Analysts consider pension funds to be perfect candidates for forestland investment, but not in high-risk, emerging markets. Some are constrained by their guidelines from owning any foreign equities, but others such as Calpers (California) Management have a small emerging markets forestry asset allocation in their portfolios within the major asset class, "alternative investments."

Foundations, Endowments: Foundations and endowments (like pension funds) have long term or perpetual investment horizons. They are conservative and seek to maintain the purchasing power of their portfolios and generate current income to support their grants and mission objectives of a charitable or educational organization. In certain cases, foundations can lend on concessional terms to projects that have purposes consistent with the non-profit mission of the foundation. These program-related investments (PRIs) might be suitable for small operations and community operations that do not have access to affordable credit. The MacArthur and Forest Foundations have been particularly active in forest investments and sustainable forest investment issues. Endowments of educational institutions are long term investments. The Havard Endowment has a small emerging markets forestry asset allocation in its portfolio.

Private Equity Investor: Provides equity and debt to enterprises. Their strategy is to earn capital gains from the appreciation in value of their investments. They might buy a company, grow a company, sell it or take it public, recouping their principal and releasing their gains. Private equity investors may be organized as investment funds, hedge funds, or partnerships. They typically make smaller investments and take larger risk exposure in new ventures than public funds because they are less concerned with the liquidity of their investment. Private equity investors have participated in tropical forestry operations.

Venture Capitalist: Provides equity and debt to enterprises, particularly young firms that have significant growth prospects and little or no access to regular capital markets. They may be general partners in forest management companies, majority shareholders, joint ventures strategic partners, private equity investors or hedge funds. Like private equity investors, their strategy is usually to grow a company, sell it or take it public and make returns from capital gains.

Venture capitalists can be active managers and take controlling management and governance. They bring value to the company through supplying "missing ingredients" such as strategic management, product

development, marketing and technology. Venture capital portfolios contain only a limited number of investments because VC investors are extremely cautious in selecting investments and are looking for high growth prospects. Well-established large, tropical forest firms with modest growth would not fit a high-return VC profile. However, it is possible that inventors of new forestry technology, large merger and acquisition candidates, or privatizations of state owned enterprises and other high-growth, early-stage ventures could fit the VC profile.

The Socially Responsible Investments (SRI) Market: A total of $2.16 trillion in assets are in professionally managed portfolios using socially responsible investing screens in the United States (Social Investment Forum, 2004). The growth in global SRI matches the public's mounting awareness of social and environmental abuses among companies in conventional asset classes and benchmark indexes, such as Forestry and Forest Products. SRI portfolio managers have risk and reward targets similar to conventional managers; in more than 21 countries, investment institutions, pension funds and a diverse variety of investment vehicles provide a wide array of socially responsible investment products.

During 2002, socially responsible mutual funds attracted net inflows of $1.5 billion while conventional U.S. diversified equity funds posted outflows of nearly $10.5 billion. The Asia SRI Association (ASRIA) estimates that in 2002 SRI funds under management (excluding shareholder activism strategies) amounted to US$ 10 billion in Australia, $1 billion in Japan, $32 billion in Canada, $2.5 billion in funds plus $250 billion in institutional portfolios in the UK, and $3 billion for the rest of Europe.

In most cases, SRI investors do not typically seek individual investments but rather screen out companies that violate good governance, environmental and social standards. One of the inclusive screens used with forestry related assets is certification. Certification is the "ticket to the game" according to one investor. Even within the SRI investment community, tropical forestry investments face a challenge. "Managers avoid complicated, risky sustainable forestry investments in emerging markets and developing countries. Portfolio management intelligence focuses on northern hemisphere forests not tropical forests, which are unknown and carry emerging markets risk. Our investment managers just do not have the time or expertise to analyze tropical forest," says Rachael Crossley at Insight Investment. "Money managers find the research woolly and wobbly."

Some environmentally dedicated investment funds have invested in certified sustainable forest operations, most with substantive environmental or biodiversity prospects (Terra Capital and Global Environment Fund). Some special credit intermediaries provide medium and small enterprises with access to affordable short term credit (Ecologic Finance, the Sarona Fund, etc.). Special purpose non-profits (Shared Interest in South Africa) provide international guarantees to commercial banks to induce them to lend to community owned projects.

Lenders

Most of the international discussions around tropical forestry have concentrated on foreign equity investment for operations, when what growing companies need is working capital through revolving credit on affordable terms. Equity provides a capital borrowing base, but most operations mainly need simple, affordable working capital and equipment finance. Currently, only a few major types of capital providers have significant relevance for the majority of tropical forestry operations. Where local banks ignore the middle market and small companies, local government programs such as FIRCO in Mexico provide affordable medium term

credit to forestry companies denied access to commercial bank credit.

Project Funding and Commercial Banks: Banks provide credit, working capital lines of credit, and equipment leasing, all of which are relevant to forest enterprises. Commercial banks and other debt providers expect to be repaid their principal and interest from the earnings and cash flow of the company, and therefore their analyses focus on the enterprise's cash flow to measure debt service capacity and the probability of repayment. They require collateral and security as secondary sources of repayment.

Currently, only a few major types of capital providers have significant relevance for the majority of tropical forestry operations. Where local banks ignore the middle market and small companies, local government programs such as FIRCO in Mexico provide affordable medium-term credit to forestry companies denied access to commercial bank credit.

Commercial banks look to the "cash conversion of short-term, self-liquidating assets" to repay loans. Self-liquidating transactions are core to commercial banks, which lend against low risk transactions that represent account receivables or inventories which have sound contracts from brand-name buyers. Revolving credit facilities serve to bridge cash flow shortfalls and timing delays for customers. As a rule of thumb, asset-based lines of bank credit will provide up to 70% of the value of uncollected customer invoices (accounts receivable) and 30% of the value of unsold inventories.

Banks customarily refrain from making long-term unsecured loans because risk is considered to increase with time. In tropical countries, banks often shun all but the largest corporate players in the forestry industry. With credit guarantees in place, banks may be willing to relax some of their requirements. Local loans backed by bank guarantees are the first window of commercial finance open to forestry enterprises in most developing countries.

Equipment manufacturing and distribution companies*:* In a lease, the customer has the rights to the use of the assets, but the ownership of the assets reside with the lessor. In many places, equipment leases finance about 85% of the equipment value, with 15% put up by the firm as its equity stake. Equipment leases are particularly valuable to new forest operations or expansions as they give an asset-based access to medium term financing (which banks rarely provide in developing countries).

Box 4.1: SCM

SCM, an Italian company, sells wood processing equipment built in Mexico. Their goal is to be the long term equipment vendor of choice by providing a complete range of machinery for all aspects of secondary processing – from basic table saws to computer controlled machines capable of replicating complex designs. SCM also provides customers with technical assistance and training for machines.

SCM provides financed leases with terms to 12 months for creditworthy clients, retaining title to the machines and all documentation for security. They do not use credit bureaus and the banking system, which are ultra conservative, lend only to the top credit-worthy banks and involve extra time and money without reflecting the true risk presented by the client. They look for a strong company and require a guarantee. In payment delinquency situations, SCM works with customers on rescheduling payments if they have trouble paying. They have the ability to repossess machinery, but do not let the situation deteriorate to that point. During the past five years, SCM reports no losses or repossessions. SCM does occasionally give terms to less credit worthy clients, but generally prefer to get payment in full prior to delivery and do not think that high interest rates can compensate for dubious credit worthiness.

4C. CRITICAL FACTORS TO INTERNATIONAL INVESTORS

Direct investors such as industrial groups and pulp and paper companies value natural forests as a source of low cost raw materials. They are not necessarily looking for profits on the forest management side, but are looking for the cheap fiber which gives them higher margins downstream and low prices to conserve cash flow. Forestry product companies issuing securities have large capitalization, market liquidity, investment research coverage, and a long cycle of market history. Liquidity in investments is a key factor for most investors, particularly in cyclical investments. Forests like real estate may have low liquidity as they cannot be sold quickly without taking very large discounts. 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 increasingly flows into forestland liquidity will rise. This has been the experience in the US, New Zealand and Australia.

Despite these constraints, efficient portfolio diversification and successful active management can depend critically on how managers slice the investment universe. Investors customarily conduct a comprehensive exploration of stratification, considering countries, sectors, industries, and companies in their analysis.

However, this trend has apparently not translated into increased large-scale international investment in tropical forests in developing countries, with the possible exception of pulp and paper in a few countries. (As, for example, in Indonesia's pulp & paper industry where more than $15 billion has been invested since the late 1980's (Barr, 2004).) The capital markets, equity and debt markets provide a source of data on financing of the large category of forestry including timber, pulp and paper companies, and forestry products.

In comparison with the world forestry capitalization, the share of non-North American and European forestry companies – sustainable or unsustainable – is only around 28% [excludes Brazil, which is categorized with Australia and New Zealand). In 2001, studies estimated that North American and European investors managed about 73% of the global asset value (Figure 4.3).

Table 4.1: Total Market Capitalization: Global Forest & Paper Sector

($ millions)	Forestry Sector		Paper Sector		Combined Total	
North America	21,025	79%	53,031	37%	74,056	44%
Europe	392	1%	48,390	34%	48,782	29%
Aus, NZ, Brazil	1,212	5%	6,685	5%	7,897	5%
Other	3,823	14%	34,903	24%	38,726	23%
World	26,452	100%	143,009	100%	169,461	100%

Source: Henderson Global Investments, 2004

Concentrating uniquely on firms listed on stock exchanges, these figures vastly understate equity investment, debt finance and loans in tropical forestry because most firms are unlisted, and even listed firms borrow. Although that investment has grown in four years, equity investment is a financing instrument available only

to top performing companies and has little relevance for domestic producers in ITTO countries. The equity figures also do not pick up the amount of non-traded equity in non-listed firms or other non-equity financing. This includes loans, equipment leasing, trade finance, and domestic funding including the contributions by owners and their families. Data on non-equity finance for tropical markets is not collected, analyzed and tracked.

4D. EXPERIENCE OF LARGE INDUSTRY DEVELOPMENT OF FOREST CONCESSIONS IN ASIA

During the 1990's, the performance of forestry companies in Asia tracked a dramatic downward spiral which sent shock waves through the global industry. Direct investment in natural tropical forests during the past decades has concentrated in large, integrated companies where forestry is embedded as an input within a larger, vertical business model. Overly optimistic business plans, high financial leverage and aggressive forestry management plans led to capital markets disasters, particularly in Asia. Conglomerates invested in large natural forests to feed the demand for fiber. To tap the capital markets, they formed corporations that listed the concessions on stock markets. Due to the low costs of emerging markets wood and lower production costs, companies showed strong relative profits and growth, and stock price soared and the companies leveraged equity heavily in the debt markets. With large input needs, industries harvested vast expanses of tropical forest concessions and acquired timber from other operators, some of it illegally sourced.

Table 4.2: Collapse of Share Prices of Asian Forestry Companies 1993-2002

	Value US$		
	Dec. 1993	**Oct. 2002**	**% Loss in value**
Aokam Perdana Bhd. Susp – 25/09/02	1310.63	1.32	-99.9%
Idris Hydraulic Mal.	1642.07	8.11	-99.5%
Pan Pacific Asia	126.95	3.05	-97.6%
Berjaya Group	612.64	59.06	-90.4%
Golden Pharos	129.92	11	-91.5%
Kumpulan Emas	190.57	49.58	-74.0%
U-Wood Holdings	131.85	8.51	-93.5%
Khong Guan Flour	23.94	7.64	-68.1%
Lingui Development	936.93	141.15	-84.9%
CHG Industries	157.2	2.33	-98.5%
Glenealy Plantations	356.21	51.61	-85.5%
Damansara Realty	160.87	17.49	-89.1%
Ayer Hitam Planting	213.01	55.16	-74.1%
Ekran	811.32	40.14	-95.1%
Mechmar Corp.	156.03	19.3	-87.6%
Barito Pacific Timber	4243.93	6.84	-99.8%
Mentiga	210.19	2.17	-99.0%
Advance Synergy	768.21	35.11	-95.4%
Land & General	1005.58	39.61	-96.1%
MGR	123.05	3.17	-97.4%
Minho (M)	269.04	12.14	-95.5%
Total	**13580.14**	**574.49**	**-95.8%**

As debt burdens rose, currency crises and recessions caused sales to falter and business fundamentals deteriorated. The price of shares in these companies toppled in total more than 95% in the decade following 1993 (see table 4.2).

Most of the industry – particularly the paper industry – has thin profit margins. Volumes of sales drive the revenue model, and efficiency (revenues ÷ expenses) gives these companies the return on investment the shareholders demand. Volume translates into acquiring the largest amount of wood and fiber at the lowest possible price. When the demand for raw materials (especially for pulp and paper operations) exceeds the legal allowable harvest, the consequences of this business model are obvious. The *APP's Annual Report 2003* shows sources of legal supply clearly not fulfilling the fiber needs of their operations until well in the future. In other situations, the pursuit of raw materials may venture into cutting forests with high conservation value (Box 4.2).

Witnessing the public outcry associated with the perceived primary forest harvesting and environmental destruction, investors began to consider their reputational risk in the market. Incurring financial losses from the Asian boom and bust, investors backed away from investment in tropical forests. Due to controversy and criticism by NGOs, official lenders retreated from forestry investment as well.

Box 4.2: Asia Pulp and Paper (APP)

The history of Asia Pulp and Paper (APP) may explain some of the reluctance of global investors to invest in forestry in developing nations and the impact of conservation advocacy and research. Incorporated in Singapore in 1994, APP – a giant Indonesian giant of pulp and paper company – grew spectacularly during the 1990s and became a favorite of emerging-market equity investors. APP listed on the NYSE in 1995, raising US$ 311 million, and then a secondary offering raising US$228 million. Altogether, equity issues tapped the US capital markets for almost US $1 billion. Over 300 international financial institutions and export credit agencies participated in financing APP's $18 billion in assets.

To the market, it represented a new breed of Asian entrepreneur. This company would not be confined to a home country or geographic region but would compete globally in the brutally competitive pulp and paper commodity markets. The company also had the competitive advantage of being one of the world's lowest-cost producers of pulp through long-term concession rights to more than 540 thousand hectares of tropical hardwood forests (Lee 2001).

But the market was apparently responding more to momentum (rising stock prices) than to fundamental research. The highly leveraged structure of 3 to 1 debt to equity raised return on equity but increased default (bankruptcy) risk. In 2000-01, when debt reached more than $13 billion, its share price collapsed and trade suspended on the US stock markets. On April 4, 2001, Asia Pulp & Paper (APP) disclosed that it was in default of $220 million of swap contracts that had not been disclosed on its financial statements for fiscal years 1997 to 2000. The stunning announcement followed a steady stream of news reports that Asia Pulp & Paper was facing a strong decline in its business and, as a result, was unable to service its debt.

APP's pursuit of vast quantities of cheap fiber for its pulp & paper operations also got it into trouble with environmental organizations and sensitive markets. APP's use of large amounts of legally questionable wood is another factor in keeping its costs low in comparison to companies that strictly avoid illegal or legally uncertain wood supplies. By 2003, major Japanese importers were planning to reject pulp and paper products produced by APP amid accusations of illegal logging by WWF and local Japanese NGOs that refused to endorse the company's Sustainability Action Plan (Jakarta Post, 31 August 2004). APP's total exports to Japan are worth about US$500 million per year, with 20 percent of the exports destined for one company (Ricoh Co). It was a sign that Japanese companies were aware of environmental issues in exporting countries, a fact that was backed up by the Government of Japan pressing for commitments under the G8.

The financial institutions which supported APP had both a financial and reputational risk on their hands.

Source: adapted from Stanford Law School: http://securities.stanford.edu/1020/PAP01, CIFOR, and others

4E. EXPERIENCE OF SPECIFIC INVESTMENT FUNDS IN TROPICAL NATURAL FOREST ENTERPRISES

In the past 10 years, several regional or global investment funds were developed to target environmentally and socially responsible investments in sectors such as renewable energy and sustainable forest-based operations. Some specifically targeted investments in natural tropical forest-based operations, such as forest management, ecotourism, or companies which sell non-timber forest products or specialty wood products. Most of them required certification for timber operations; all aimed for competitive returns for their investors. Many were launched with significant publicity, often in collaboration with major international institutions or environmental groups such as the World Bank's International Financial Corporation (IFC) or the World Wildlife Fund (WWF). Ten specific funds were followed as case studies (Figure 4.5).

During the late 1990s when many of the listed funds were conceived, venture capital expectations were high globally, not just in the forest sector. The forest sector was seen as a good steady growth investment. Market solutions to reputational risk related to potential associations with destruction of the world's rainforests appeared around the corner: certified wood products were becoming known, and large retailers such as B&Q UK and the Home Depot Inc as well as giant building materials DIY companies had committed to purchasing policies that gave preference to suppliers offering FSC-certified wood. The market for certified wood products, carbon trading and other eco-service payments had a glowing forecast on which project promoters based future sales and prices. At the same time, there were also speculative assumptions about the development of large markets for carbon trading and for eco-service payments (for public benefits such as clean water, biodiversity prospecting, etc.) Environmental NGOs and other groups with an interest in finding market solutions to biodiversity and forest loss (e.g. Global Environment Facility, International Finance Corporation, etc.) were interested in partnering with the funds.

It was a time of optimism, with many groups wanting to take advantage of emerging opportunities to show that environmentally sustainable forestry enterprises were indeed financially viable, and that investment in environment and biodiversity would become a trend in corporate social responsibility.

Table 4.3: 10 Private Funds Investing in SFM

Primary Funds	Est. Value (US$ million)	Comments
A2R Fundos Ambientais	$200	GMO Renewable Resources joint venture
AxialPar, Brazil		Private equity company succeeding Banco Axial
Brazil Sustainable Forest Fund	$100	(GMO takeover) when A2R fails in 2003
Ecologic Finance	$5.5	Short term credit facilities to coffee and other NTFPs
EcoEnterprises Fund	$10	Public private matching: Nature Conservancy, IFC
Environmental Enterprises Assist Fund (EEAF)	$85	Non-profit: target sustainable investment
GEF (Global Environment Fund)	$300	2 private equity funds
GMO Renewable Resources (forestry)	$1,000	Special funds for SFM and tropical timber
Kijani Capital Fund (never set up)		IFC and IUCN using GEF funds
Sustainable Forest Fund (A2R)	$100	
Sustainable Forest Systems	$ 12	
Terra Capital	$15	Biodiversity venture capital fund
UBS Global (ex-U.S.) Timber Investors VI	$200	UBS Timber Investments
Verde Ventures Fund	$6	Conservation International , former name CEF
Xylem Fund II	$ 23	

Funds like Terra Capital were looking for things *(Brooks Brown of EEAF[20])* such as:

- Companies whose operations promote biodiversity
- Established companies with an established customer base and track record of profitability
- Start-ups, if the entrepreneur has a successful track record with a previous company
- Businesses with significant near term profit potential
- Good prospects for exit in 5-7 years

Hard Lessons Learned

In general, few investments succeeded in mixing certified timber management with sound financial management. Actual performance of the SFM fund investments after 2000 show lower returns, in many cases because SFM investments were chosen more for their environmental sustainability than for their competitive business factors (Tepper, personal correspondence, 2004). Fund managers had often over-estimated the availability of solid investment opportunities and local management talent. The fund managers had been cognizant of the extra costs associated with forest certification and installing chain-of-custody systems, but they did not expect all the costs and risks associated with improving management in remote rural operations. As the portfolio companies were illiquid, and the costs were cash outflows, the funds had no internally generated revenues to cover the costs. Underperformance had little to do with the certified wood products market: the market for certified wood was still a niche market, and retailers were willing to work with producers and suppliers to fulfill their procurement policies. Instead, the major challenges cited by these funds included:

[20] http://www.usda.gov/oce/waob/Archives/2000/speeches/brooksbrowne.txt

1. High Costs of Management (firm and fund management level): On forest-related aspects alone, many of the investment analyses were emerging strong. However, the financial viability of the operation plummeted once the additional technical and managerial assistance costs were taken into account. The young age of many companies and inexperienced management were all problems. Businesses in developing countries needed a combination of both capital and management/technical services: due diligence and business plan preparation first and then the seed capital. The need for extensive technical assistance, training and management consulting for forest enterprises in the tropics mirrors a global finding across all sectors. In the past two years, the World Bank Group's International Finance Corporation (IFC) found that that the technical assistance needed to support small and medium-sized client enterprises began to eat up a significant portion of the IFC's total operating budget.

2. Pressure to Invest in Good Forestry but Weak Financial Opportunities: Many of the funds were sponsored or dominated by official agencies, foundations and NGOs with environmental or social targets in developing countries. Faced with a dearth of financially viable investment opportunities, these sponsors may have indirectly pushed funds to make investments that would not have passed a conventional investment analysis.

3. Forest Operations Too Small for Many International Portfolio Investors: Managers of emerging markets funds overwhelmingly prefer to invest in relatively large, publicly listed (liquid) companies – capital above $200 million – with a minimum market capitalization of $33m for green/ethical funds. Certified forestry companies, particularly those in developing countries, are generally small and under private ownership, and thus are not attractive to portfolio investors.[21] Except to the large investment managers (i.e., GMO, UBS), specialized funds were rarely large enough to satisfy the requirements of secondary market investors. Therefore, continued investment expectations were not realized.

General Poor Business Environment and Inherent Risk in Developing Countries: From an international investor point of view, the risk/return trade-off of renewable resource funds in developing countries has been mostly unfavorable. Africa tends to be the least favored, South East Asia the most favored, with Latin America intermediate. Factors in this category included:

- *Difficult regulatory and tax environments* which were not friendly to foreign investors. Investment opportunities needed to compete with other countries that have tax incentives for investing in sustainable forest operations (such as New Zealand and Ireland).
- *Difficult legal systems* were seen as a major constraint. Instances of corruption and unethical business practices had few remedies in civil court, nor any other fair or unbiased arbitration system.
- *Illegal logging undercut legitimate businesses* with lower costs, making it difficult for producers to sell certified or even legal wood at a price sufficient to cover costs.

Poor Access to Commercial Finance: Revolving lines of credit were never readily available from local financial institutions. Banks were only willing to lend against hard collateral and their terms were uneconomic for most forestry enterprises.

[21] R. Gullison, T. Westbrook, et.al., "The Potential For UK Portfolio Investors To Finance Sustainable Tropical Forestry," (1998) a discussion paper produced for IIED.

Payments for Ecosystem Services Not Yet Widely Available: Many of the vehicles for payments for ecosystem services did not come on-line until several years after SFM funds came into being. The early funds were not able to realize ancillary revenues from new financial vehicles, such as carbon offset trades. New financing mechanisms for sustainable forest management had the disadvantage of being very new, unknown and in some cases experimental in the 1990s.

In sum, institutional investors perceive serious risk and uncertainties with the chance of losing everything, and fewer real opportunities to earn spectacular returns. Fund failures show that risks tend to converge and to compound catastrophically during times of stress, while investors fear that the chances of realizing great leaps of value are much less. Even investors supportive of sustainable forestry management, such as socially responsible investors, often have difficulty with the embedded country/political risk/novelty in most developing countries. Green/ethical socially-responsible investment funds say that they rarely invest outside of North America and Europe, and they are unlikely to invest in tropical sustainable forestry companies under any conditions.

Successful Investments

Several well-managed funds have managed ways in which to go forward. The Global Environment Fund continues to invest successfully. It was able to merge forest expertise with developing country experience with strong investment analysis. Other successful renewable resource fund managers are UBS Timber Investors and GMO Renewable Resources, which had the deep organizational talent and resources to select good investment prospects and to manage risk effectively.

Today, on a different scale, several organizations are pursuing marketing and credit finance solutions. Tropical Forest Trust is solving both market and finance problems for certified producers by brokering relationships between committed producers and importers. EcoLogic Finance brokers trade finance relationships between producers of non-timber forest products and specialized, committed buyers.

Other noteworthy initiatives include:

- IFC's LAC Small and Medium-Sized Enterprise Facility, jointly with WWF's Global Forest and Trade Network (GFTN) are teaming up to develop environmentally responsible wood trade in Latin America, with a special focus on Bolivia, Honduras, Nicaragua, and Peru. Part of this project is to improve business management and production of project participants and to promote financing and investment opportunities within supply chains.
- Multilateral Investment Fund of The Inter-American Development Bank will combine investments from private and public sectors. It also approved the investment of up to $5 million in an expansion capital fund designed to provide financing to technology-oriented small and medium-size enterprises in Mexico.
- The Latin Idea Venture Capital Fund II is expected to have a first closing of $15.5 million, including the MIF's resources and commitments from Mexico's NAFIN development bank, Mexican private investors and the fund's managers, Latin Idea Ventures LLC. The fund will be managed by Latin Idea Ventures (a partnership formed by Humberto Zezati and Alexander R. Ross). The managers will provide strategic support and guidance to the companies in the fund's portfolio.

CHAPTER 5. FACTORS INFLUENCING INVESTMENT IN TROPICAL FORESTS

All investors will, with varying degrees of sophisticated analysis, first systematically assess the nature of the prospect and its perceived benefits and risks. They will identify the sources of value in the investment and the factors that pose risk to profitability and asset value. Different investors place emphasis on different aspects of the investment, and their assessments will reflect this.

Professional investors usually have a systematic screening process to screen large numbers of prospects before progressively narrowing down the qualified selection pool ("deal flow"). The first screens are fast and inexpensive, but become progressively timely and expensive as prospective "ideas" emerge from the pool. This approach quickly eliminates all prospects that do not fit investment guidelines or risk/return targets.

The first screen often eliminates tropical forestry investment in developing countries simply on the grounds that it is in emerging markets in countries with poor investment climates (governance problems, political instability, etc). As country level risks rise, either investors avoid the country entirely or require high risk premia at the firm level to compensate for these risks.

5A. LEVELS OF INVESTMENT ANALYSIS

Factors which influence investment opportunities and constraints to investment in sustainable forest management in natural tropical forests can be broken down into differing levels of risk/return[22] such as:

1. **Country Investment Climate factors ("Country Risk" or "General Business Environment")** consider broad economic, legal, regulatory, political, and social factors that could affect an investment. International investors may consult several of the many "investment climate indicator" analyses published by international organizations, specialized research organizations, or industry publications. Examples include Euromoney's "Country Credit Ratings," the Economist Intelligence Unit's "Country Risk Service" and the World Bank's more detailed Investment Climate Surveys. These indices all consider criteria such as government and currency stability, infrastructure provision, levels of corruption, crime and law enforcement, and adequate legal systems as major factors affecting the investment climate in a particular country; these are therefore weighted heavily in the final calculations of country risk indicators.
2. **Forest Industry factors ("Industry Risk")** measure the commercial viability and behavior of an industry, supply and demand conditions, level of industry maturity and growth, the level of competition, technology change and other factors that could affect sales and margins for a business in the industry. These can be broken down into global industry risk and country industry risk (for risk specific to the country).

[22] In this terminology, "risk" is just the inverse of "return"; therefore "risk/return" can be thought of as "opportunity/constraint."

3. **Company (firm level) factors ("Company Risk")** assess the asset quality, competitive strategy, products, growth prospects, production, marketing, management, operating, financial performance and funding capabilities of an investment prospect.

Box 5.1: The Role of Investment Climate Indicators to ITTO Producer Countries

Many financial institutions tend to look at the macro-level indices and rankings of investment climate developed by international organizations (Table A). These rankings shape investment decisions throughout the capital markets – and are an important litmus test for many developing countries.

The extent to which these macro-indices are used by all international investors to assess the business environment of any potential investment is unclear. Investors tend to weight heavily the firm-level bottom line adjusted for risk. However, the factors which contribute to the macro-country indices all affect the financial bottom-line (see World Bank Doing Business Report and Table B below).

Table A: Investment Climate Indices

Index	Publisher	Methodology	Assessment
Business Risk Service	Business Environment Risk Intelligence www.beri.com	Country risk in 50 countries based on evaluation of 3 sub-categories. Updated each trimester	In-house experts
CalPER's Index	California Government www.calpers.ca.gov		
Country Credit Ratings	Euromoney Institutional Investor www.euromoneyplc.com	Credit ratings of 151 countries based on nine areas of country risk. Updated semi-annually	Surveys of outside financial and investment analysts
Country Risk Indicators	World Markets Research Center www.wmrc.com	Country risk in 186 countries based on evaluation of 6 risk factors. Updated daily	In-house experts
Country Risk Service	Economist Intelligence Unit www.eiu.com	Country risk in 100 emerging economies and 6 regions based on evaluation of 13 risk attributes	In-house experts
Economic Freedom of the World	Fraser Institute www.freetheworld.com	Freedom from government regulation in 123 countries covering 8 areas. Updated annually	In-house experts and existing surveys
FDI Confidence Index	A.T. Kearney www.atkearney.com	Attractiveness of 62 countries to FDI. Updated annually	Surveys of 1,000 multinational company CEOs
Global Competitiveness Report	World Economic Forum www.weforum.org	Competitiveness of 102 countries. Updated annually.	Surveys of executives of local global companies
Global Risk Service	Global Insight www.globalinsight.cm	Country risk in 117 countries based on an evaluation of 51 risk attributes. Updated quarterly	In-house experts
Index of Economic Freedom	Heritage Foundation www.heritage.org	Freedom from government regulation in 142 countries, based on evaluation of 10 factors. Updated annually	In-house experts
International Country Risk Guide	Political Risk Services International www.prsgroup.com	Country risk in 140 countries based on evaluation of 22 variables in 3 sub-categories. Updated monthly.	In-house experts
World Competitiveness Yearbook	International Institute for Management Development www.imd.ch	Competitiveness of 51 countries, 9 sub-national regions. Updated annually.	Compiled from international and regional organizations and private institutes, executive opinion surveys.

Index	Publisher	Methodology	Assessment
Worldwide Governance Indicators	World Bank www.worldbank.org/wbi'governance/data	Governance indicators for 199 countries covering six dimensions of governance. Updated biennially	Aggregation of existing surveys and indicators.

Among the standard references are Euromoney's "Country Credit Ratings" and the Economist Intelligence Unit's "Country Risk Service." These organizations have created "investment climate indicators," which are used to rank countries and often have just one summary index with 4-9 sub-indicators of investment risk. The indicators usually comprise macro-economic, foreign exchange, political, legal, regulatory, sovereign risk ratings and corruption ratings.

Many ITTO producer countries do not fare well according to these aggregated rankings. According to the Euromoney Country Risk Indicator,[23] none of the listed ITTO producer countries fall in the top quartile of ranked countries (Table B), even when adjusted by Transparency International's Corruption Perception Index (CPI). Of the 32 countries ranked, 12 did not move in their rankings once the CPI were taken into account. 14 dropped one to five places (with Cameroon dropping 5 places), and 7 improved by one to three scores (Surinam improving 3 places). More details on the Euromoney and Transparency International indices can be found in Annex 1.

Table B: Euromoney Country Risk Indicator of ITTO Producer Countries

Percentile of All Countries	ITTO Producer Countries (Original Scores)	ITTO Producer Countries (CPI Adjusted Scores)[1]
Top 25%	0	1
2nd Quartile	14	12
3rd Quartile	9	9
Bottom 25%	10	10

[1]*CPI Adjusted Score missing for Vanuatu*

CalPERS emerging markets "permissible country" index is a guideline used by the California Public Employees' Retirement System (CalPERS), the largest public pension fund in the United States and the third largest in the world, with assets totaling $193.8 billion (October, 2005) and investments in both domestic and international markets. In its "permissible country" review process, market liquidity and volatility, market regulation and investor protections, capital market openness, settlement proficiency, and transaction costs accounted for 50 percent of the review. Political stability, financial transparency and labor standards accounted for the remaining 50 percent. With its gigantic presence in world markets, CalPERs has exercised pressure for countries to improve their capital market institutions and other investment industry factors. Malaysia was dropped by Calpers from the index because of security regulation irregularities, but was restated when it quickly corrected the problem.

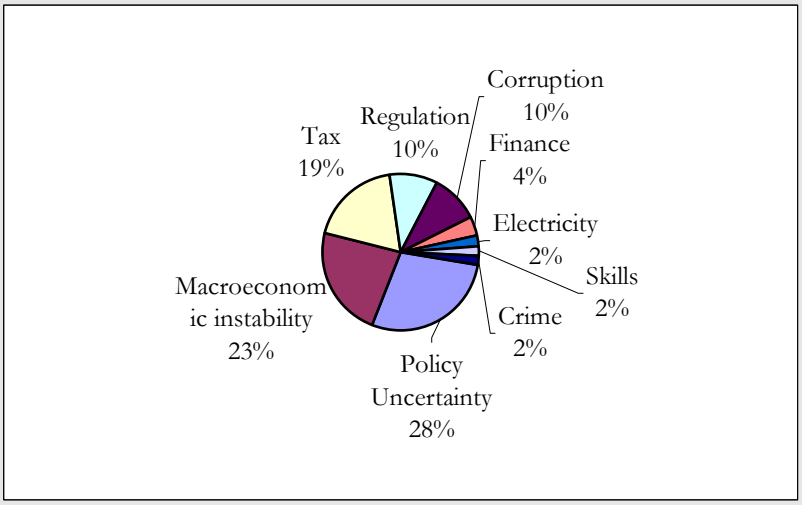
The World Bank's 2005 World Development Report "A Better Investment Climate For Everyone" spells out the major factors affecting overall private investment in countries around the globe. Issues pertinent to the forest sector in general mirror the challenges across all sectors, but especially other natural resource sectors such as oil and gas, mining and to some degree for the domestic market, agriculture. Table A in Annex 1 represents data for ITTO producer from the World Bank's Investment Climate Survey of firms.[24]

[23] The *Euromoney* indicator is a measure of risk for financial investment in 180 countries. The overall score (100%) is a combination of the following factors: political risk (25%), economic performance (25%), debt indicators (10%), debt in default or rescheduled (10%), credit ratings (10%), access to bank finance (5%), access to short-term finance (5%), access to capital markets (5%), and discount on forfeiting (5%).

[24] These surveys were conducted in over 53 countries since 2001, but shown here are only ITTO Producer countries for which data was collected. The World Bank works with partner agencies and national statistical offices in each country to

With a few exceptions (India, Malaysia, Philippines), policy uncertainty is expressed by upwards of 40% of managers as a major challenge to a dynamic private sector. Roughly only one third of respondents express problems with the court system. Crime and corruption are generally high across most countries, with Brazil, Honduras and Guatemala showing the highest, respectively. Regulation and tax administration constraints are highest in Brazil, where along with Honduras and Peru financial constraints are reported most commonly. All other constraints are reported by a relatively low number of managers, with the notable exception of electricity constraints in Nigeria (97.4%). Among the ITTO producer countries, Malaysia has comparatively low rates of constraints across the board.

Figure A: Policy uncertainty and macroeconomic instability the largest concerns of firms



Source: World Bank Investment Climate Surveys, 2005

The World Bank's Doing Business Project assembles information on the cost of doing business and the impact of time and number of procedures necessary to complete various business transactions in each country (including bribery).[25] Annex 1, Table B shows the relevant data for ITTO producer countries.

For most indices in Annex 1, most ITTO countries do not deviate widely from the world average, with a few exceptions. The number of days necessary to register property varies from 2 (Thailand) to 382 (Ghana). The number of days necessary to enforce a contract is particularly above the world average (388) in the Central African Republic (660), Nigeria (730), Democratic Republic of the Congo (909), and Guatemala (1,459). Likewise, a small group of countries are well above the world average (50) for the number of days necessary to start a business: Venezuela (116), Indonesia (151), Brazil (152), and the Democratic Republic of the Congo (155). Another notable country is Thailand, which remains roughly at or even below the world average for every index.

5B. COUNTRY RISK FACTORS

Governments have an important role to play in creating a climate in which forest product-related firms and entrepreneurs of all types – from micro-enterprises to local manufacturing companies and multinationals –

conduct interviews with senior managers of manufacturing establishments with significant contributions to GDP. For each of the 8 sets of variables, the senior managers were asked to rank how much of a problem the issue presented for the operation and growth of their business, on a scale of 1 (no obstacle) to 5 (very severe obstacle). Columns of "major constraint" represent the percentage of managers who ranked each issue as a 4 or above on this scale.

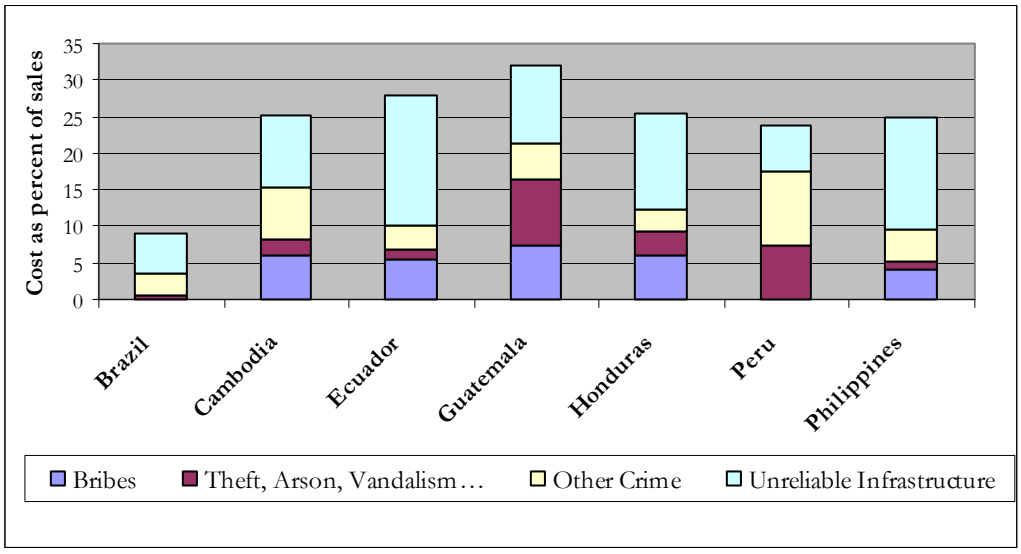
[25] The "investment profile" index comes from the PRS Group's International Country Risk Guide (ICRG), which assembles various components of risk for investment. The remaining indices are taken from the World Economic Forum's Global Competitiveness Report, which surveys on average 76 respondents from 102 countries, scoring answers on a scale of 1 to 7.

have opportunities to invest productively, create jobs and expand, and thereby contribute to growth and poverty reduction. While governments have limited influence on factors such as geography and the natural resource base of the country, they have significant influence on important factors such as the security of property rights, approaches to regulation and taxation (both within and at the border), the provision of infrastructure, the functioning of finance and labor markets, and broader governance issues such as corruption.

Governments must then balance measures to encourage private investment with other broader societal interests, such as ensuring an adequate tax base to finance governmental programs (which bring positive benefits back to the firms in forms of adequate infrastructure or educational programs which produce skilled labor), and safeguarding environmental and social rights.

More governments are recognizing that their policies and behaviors play a critical role in shaping the investment climates for their countries. China and India provide compelling examples of investment climate improvements at the country level that have driven economy-wide growth and have fueled poverty reduction.

Figure 5.1: The Cost of a Poor Investment Climate in ITTO Producer Countries (% of sales)



The major factors affecting country risk, as found by this and previous studies, include:

A. Stability and Security

Firms require an environment of reasonable economic and political stability. In a survey of 48 countries, the World Bank Investment Climate Surveys showed that policy uncertainty dominates the investment climate concerns of firms. Relevant policy concerns include the following:

> ***Verification of rights to land and other property*:** If property rights are insecure, equity investors require higher returns to compensate for the increased risk. Numerous studies show that the more secure the rights, the faster the economic growth. Secure titling to land as well as other equipment can also improve access to credit from lending institutions. The easier it is for banks to legally recover property as secured collateral, the more willing they are to lend.

Recent World Bank surveys show that entrepreneurs who believe their property rights are secure reinvest between 14-40% more of their profits into their own business than those that are insecure; farmers in Ghana and Nicaragua reinvest up to 8% more when their land rights are secure. In Bolivia, the new agrarian law, INRA, among other things, refined the title regularization process, acknowledged the exclusive right of indigenous communities to claim communal ownership of land, and identified mechanisms to resolve conflicts over title land ownership.

Other countries have recently passed laws that will likewise make it easier for other groups to "enter" the formal forest regime. Bolivia, for example, in the mid 1990s passed new forest laws as well as INRA that affected key aspects of forest use in that country. Before the INRA law, most of Bolivian forestland was under unclear land tenure and ownership, promoting insecurity and conflict. While the land tenure clarification process continues more slowly than originally expected, social groups like indigenous peoples benefited most from these reforms since they were given priority in the clarification of territorial claims (CIFOR Boscolo and Vargas Rios, 2004).

Effective Legal System, including effective contract enforcement: Delays or uncertainty in the development or enforcement of contracts discourage investment. Without secure contract law, firms have to take larger risks or limit their interactions with partners whom they know have a good reputation. Firms in Ecuador, Peru, and Vietnam says they would be reluctant to switch suppliers even for a better price because they do not know the firm and cannot rely on a court system to enforce a contract; firms in Burundi, Cameroon, Cote d'Ivoire, Kenya, Madagascar, Zambia and Zimbabwe say they are unwilling to do business with anyone they do not know well. This behavior discourages the expansion of trade and creates a barrier to entry for new firms.

A well functioning court system helps firms to predict the outcome of any dispute and therefore reduces their costs and risk. As courts improve, they have the added benefit of beginning to *deter* dispute from happening in the first place. Larger, more efficient firms in Mexico are found in states with better court systems. Firms in Brazil, Peru and the Philippines report that they would be willing to increase investment if they had more confidence in their national court system. In Bangladesh and Pakistan, the World Bank's Investment Climate Surveys show that firms with confidence in their courts make half their sales on credit, while those with little confidence make only one-fourth of their sales on credit. Being able to make sales on credit gives a firm the flexibility that they need to operate efficiently.

Crime: Robbery, fraud and damage to property increases the costs of doing business – from either damage and repairs or the cost of security. Crime discourages investment in every region around the world, although in Latin America more than 50% of firms judge crime to be a serious deterrent to doing business (World Bank, 2005).

Rent-seeking behavior, corruption and bribery: Corruption – commonly defined as the exploitation of public office for private gain – is rampant in many developing countries. Corruption has been found to be particularly high in countries with an abundance of valuable natural resources such as minerals or timber. The potential to exploit these resources tends to prompt more intense "rent-seeking" behavior by politicians and other stakeholders.

Transparency International maintains the annually updated Corruption Perception Index (CPI)[26] and the Bribe Payers Index. Countries with a CPI score of 9 and above are considered the least corrupt. One ITTO producer country – Malaysia – falls in the top quartile of ranked countries with a score of 5.1, and 13 ITTO producer countries fall into the middle 50%. Approximately 30% of ITTO producer countries fall in the second quartile, 9% in the third, and 49% in the last quartile. The CPI indicators are important indicators as they are used by other macro-level indicators which are widely used by international investors during their decision-making processes.

Table 5.1: Corruption Perception Index of ITTO Producer Countries

Percentile of All Countries	ITTO Producer Countries (CPI Scores)[1]
Top 25%	1
2nd Quartile	10
3rd Quartile	3
Bottom 25%	16

Source: TI 2005 Corruption Perceptions Index
[1]CPI scores lacking for the Central African Republic, Togo and Vanuatu)

Other more indirect forms of corruption include the influencing of policy-development in ways that benefit one's own group to the detriment of society as a whole – such as property rights, taxes or regulatory regimes which favor specific constituencies. Disproportionate influence can occur through informal or formal lobbying, controlling access to information such as national newspapers, or promises of political support or financing.

Uncompensated expropriation of property: Mass expropriations are now relatively rare in most countries around the world. However, there are other forms of expropriation, such as confiscatory taxes or regulations which are progressively raised such that doing business becomes virtually impossible. Cameroon in the 1990s required corporations to pay several years of expected taxes in advance. Large-scale and international forest operations are particularly vulnerable due to their relative immovability and the fact that politically, foreign firms are often the target of political movements. The risk of expropriation figures prominently in many international institutions' weighted criterion for country investment environment rankings. Investors insure against "political risk" through import/export institutions such as ExImBank, Coface, OPIC or the World Banks MIGA.

B. Regulation and Taxation

The ways governments regulate and tax forest sector firms and their transactions – both within and at their borders – will affect business and their investment prospects. Sound regulations address market failures that inhibit productive investment and cause negative externalities (such as environmental degradation). Sound

[26] The CPI measures the extent to which corruption is perceived to exist among public officials and politicians, according to resident and foreign business people and country analysts. It draws on corruption-related data from 16 expert surveys carried out by a variety of reputable institutions – such as Columbia University and the World Economic Forum.

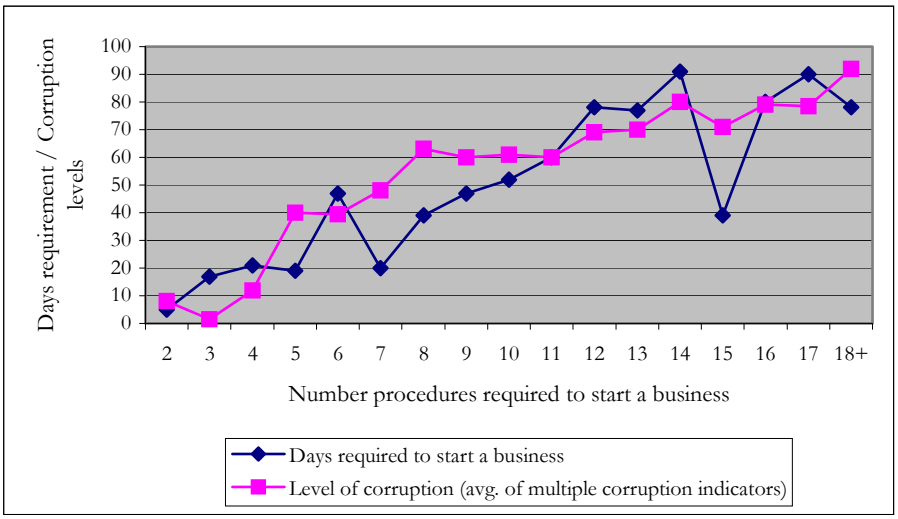
taxation policy generates the revenues to finance public services that meet the needs of not only the forest industry itself, but also the general populace at large. All governments around the world struggle to reconcile the inherent tension in trying to ease the regulatory and tax burdens on firms without compromising broader social interests. Since 1995, at least 60 countries have made regulatory changes affecting foreign investment every year, with the vast majority reducing restrictions (World Bank, 2004). Restrictions which impose requirements on foreign firms to enter joint ventures with other local firms have had mixed success.

Regulatory and tax policies can be poorly designed or implemented and can have unintended consequences, imposing unnecessary costs, uncertainty and risk without effectively safeguarding social interests. Both regulatory and tax systems can be biased towards political objectives and special interest groups and distort competition. Administrations can be complicated and corrupt, thereby increasing the costs to industry.

Regulatory and political risks include the risk of expropriation, regulatory interference (such as unilateral changes in contracts), and abrupt changes in laws. The special attributes of the forest sector – the local and permanent nature of the resource, the need for environmental regulation, and the difficulty in determining the asset value of the forest – accentuate these risks. To mitigate these risks, a basic level of protection is established by a concessions contract, the credibility of which depends on how well it assigns rights and responsibilities and is enforced.

Evidence from 133 countries suggests that countries with more interventions and business regulation also tend to have more corruption (see Figure 5.2). Recent work suggests that developing countries tend to regulate more than richer countries in many areas (World Bank Doing Business Project, 2004). In addition, in countries such as Indonesia which has recently undergone de-centralization processes, federal and local requirements are often inconsistent.

Figure 5.2: As number of procedures to start a business rise, so does corruption and the number of days required to start a business



Source: World Bank (2004b) and Kaufmann, Kraay, and Mastruzzi (2003).

While compliance costs in absolute terms are in principle the same for all firms regardless of size, the reality is that smaller firms are usually the most affected. As unreasonable compliance costs increase, the incentives

to become a part of the informal sector grow.

The ideal goal is "better regulation, not any regulation." Governments need to strike a balance between market and government failure and adapt to local conditions. This requires efforts to address regulatory costs and informality and reduce regulatory uncertainty, risk and market barriers. A growing number of countries are attempting to reduce requirements for business registration, such as Bolivia where a reduction in the number of procedures has led to an increase in registered businesses by 20% (Flores and Mikhnew, 2004).

Box 5.2 The Cost of Environmental Regulation and Investment

The cost of complying with regulations designed to protect environmental or social concerns can influence investment decisions. It is, however, only one factor out of many and will differ among firms, industries and locations. In general, these costs only become a factor when comparing two similar locations. In the majority of developing countries with tropical forests, other variables (such as access to the resource, infrastructure, etc) will tend to vary so widely that differences in environmental regulation will carry less weight. A recent study of FDI across all sectors in developing countries found no evidence that environmental standards significantly affected investment decisions.

Source: Copeland and Taylor (2004), Wheeler (2001)

C. Financial markets

Currency exchange and convertibility risks: A fundamental concern for foreign investors and lenders is the ability of a local project to generate revenue in a currency that maintains value and can be converted to foreign exchange.

Access to Finance: Lack of access to affordable finance may constrain a company's ability to take on new contracts and grow. The relative small scale of forest projects is an obstacle to attracting finance. Small projects attract little interest from commercial banks because they are small. Their credit is often unrated or the credit of the borrower's sponsor is weak, and the transaction costs are proportionately higher than for large projects. Small projects may have to rely on greater equity commitments and credit enhancements by thirds parties and look for "creative financing structuring techniques."

Forest-based production and manufacturing operations require long term assets and plants and equipment which require matching long-term financial facilities. But many financial sectors in developing countries are not developed sufficiently to provide long-term lending. Multilateral institutions and export credit agencies may be the only agencies that are in a position to accept political and regulatory risk and provide the needed long-term lending, but these have not been very active in the forest sector to-date. The fact that little financing of the forest sector has been provided by the capital markets in tropical developing countries may suggest that individual investors are not able to mitigate the risks involved.

D. Quality of Infrastructure

Telecommunications: Modern communications allow firms to communicate rapidly and cheaply with suppliers and buyers. In Bangladesh, China, Ethiopia and India, the Bank's Investment Climate Surveys found that garment manufacturers were more productive, paid higher wages and grew more quickly when their telecommunications services were better (Dollar, Hallward-Driemeir, and Mengistae, 2003).

Energy / Electricity: Access to a reliable electricity supply at a reasonable price is vital for all firms. Temporary losses of electricity and voltage surges are frequent in many developing countries, often causing damage to machinery (estimated cost: 5% of annual sales). In some countries, governments charge industry higher rates in order to hold down prices for households; since larger firms often "escape" by purchasing their own generators, this leaves only the smaller firms subsidizing household consumer costs.

In Uganda, those with fewer supply problems invested more in their own productive capacity (Reinneka and Svenson, 2002). In Latin America, a 10% increase in electricy-generating capacity per worker has been estimated to increase GDP per worker by 1.5% (Calderón and Servén). Countries that early on introduced competition, private provision and new regulatory systems in the energy sector, such as Argentina and Chile, have benefited: Chile's wholesale prices fell by 37% between 1986 and 1996.

Transportation: Transport infrastructure links internal to domestic and international markets. Poor infrastructure has been found to account for 40% of the cost of transport in the average country and 60% in land-locked countries. Reducing transport costs necessitates looking at the entire system – from the major nodes (ports and airports) to the roads and railways connecting them. Developing countries often spend too little on maintenance compared with new investment. The correlation of high levels of corruption and spending on new roads and other infrastructure rather than maintenance appears high, and still results in poorer quality transportation infrastructure (Tanzi and Davoodi, 1997).

> *Ports:* For internationally traded wood products, ports become critical since 80% (by weight) of the trade of developing countries goes through ports. In Argentina, a combination of private participation and increased competition has generated more efficient services, cutting the average vessel waiting time from 72 to 33 hours, increasing output per worker from 900 to 4,850 tons and increasing capacity by 500% (Trujillo and Serebrisky, 2003).
>
> *Roads:* All goods are transported by road at some stage. While a 10% increase in the length of roads per worker in Latin America has been estimated to increase GDP per worker by nearly 20% (Calderon and Severin, 2003), one has to ensure that roads are carefully planned in order to avoid "the road to nowhere" and unintended settlement impacts in remote areas.
>
> *Other factors:* Transportation efficiency is also facilitated by other infrastructure, such as telecommunications, which allows for tracking of goods in transit, as well as efficient customs and other regulatory systems. Although global transport costs have been falling over the long-term, they are still a large barrier. For Chile and Ecuador, transport costs to the US are still 2000% higher than US tariffs (Clark, Dollar and Micco, 2002).

E. Human resource, management and labor markets

Firms rate the scarcity of labor skills as a major constraint in many countries. People's skills and health affect their ability to work, to adapt to new technologies and equipment, and to make valuable contributions to the development of their business. As firms expand into value-added processing and get access to new technologies, they demand more skilled workers who can learn how to work the new equipment, but also adapt to new organizational structures and roles that usually come with it. Export-oriented production requires language and marketing skills as well.

The educational levels of all regions has improved in the past two decades, especially in East Asia and the Pacific. In Cambodia, improvements in the investment climate plus higher returns to better trained individuals boosted the demand for vocational training.

Box 5.3: Global Environment Fund's Active Management of Investments

The venture capital firm of the Global Environment Fund (GEF), which has dozens of investments in tropical countries, takes a pro-active management approach to reducing risk in an investment. Additional costs of "active management," which are often necessary in developing countries, factor into GEF's investment decisions as these costs reduce GEF's profitability and the expected contribution to GEF's portfolio.

"Once a company or project is identified, GEF performs extensive financial, technical, operational, legal and environmental due diligence to determine whether it meets our investment criteria. We are not passive investors and generally seek significant minority stakes and structure our investments to ensure strong shareholder rights. We work closely with our portfolio companies and add value through board representation and/or participation in the active management of the companies, assisting management to forge their business strategies, and ensuring a key focus on building long-term shareholder value. We support our portfolio companies in ways ranging from providing capital for new equipment to participating in tactical decision making regarding key issues such as introducing strategic alliances and new markets, recruiting senior management, securing new sources of financing, improving environmental policies and practices, and preparing companies for an eventual sale or listing on a stock exchange. On an appropriate basis, members of our investment team may be seconded to portfolio companies when they have particular contributions to make. Ongoing monitoring and management are also critical elements of a successful investment."

John Earhart, Partner, Global Environment Fund

5C. INDUSTRY RISK (GLOBAL)

Overall supply and demand: In determining the source of global equity returns, many studies have generally concluded that country factors dominate industry factors. However, new evidence in 2002[27] shows that industry factors have been growing in relative importance and may now even dominate country factors. They make the case that over the most recent five years, diversification across global industries has provided greater risk reduction than diversification across countries. These findings suggest that industry allocation may become a more important consideration for active managers of global equity portfolios and that investors may wish to reconsider equity allocation policies that bias conservative domestic investments.[28] Will this result in investment managers seeking exposure to tropical forests?

The underlying economics of the forestry products industry show strong, global demand. Income and population growth are the underlying drivers of forest product demand. Global wood demand grew more than 50% from the 1960s to the mid-1990s (1.4% per year). Demand in industrial countries, which consume 75% of industrial roundwood production, grew only 0.6% per year from 1961 to 1997, while consumption of wood grew by 3.2% per year in developing countries with the steepest population growth. Most wood in developing countries is consumed domestically as fuel or industrial roundwood. The rising ratio of wood to grain prices has been one of the basic drivers behind the expansion of forestry. Timber imports are projected

[27] Brinson Partners, 2000

[28] S. Cavaglia, C. Brightman, M. Aked, Brinson Partners, "On The Increasing Importance of Industry Factors: Implications for Global Portfolio Management," March 21, 2000

to quadruple in India, China and other forest-scarce developing countries over the next two decades, driving industry growth but increasing the pressure on sustainable forest resources. However, a project "wall of wood" from Brazil and New Zealand could impact price stability or prices.

According to Canada's DBRS (Dominion Bond Rating Service Limited), industry factors analysis includes the pricing environment, supply and demand equilibrium, capital intensiveness, and country-specific governmental regulations.[29]

- *Pricing environment*: As cyclicality is inherent in most paper and forest products, is current product pricing adequate for future expectations? What are the dynamics beyond this cyclical environment vis-à-vis historical cycles? What is the exchange rate impact on competitive pricing in global markets?
- *Supply/demand equilibrium:* What is the general trend in global industry capacity? Has capacity been permanently or temporarily closed? Specifically, what is the outlook for demand, both domestically and offshore; what are current inventory levels and operating rates for the industry; and what are the import/export trends for key countries?
- *Capital intensiveness:* What are the size and age of paper machines and converting equipment? Is there potential for new manufacturing technologies that may render current processes obsolete?

5D. INDUSTRY RISK (COUNTRY-LEVEL)

Country-level industry factors may also dominate over project-level factors: a good company in a poor environment may be a poor investment. According to insurance experts the structure of the industry in the country, rather than the type of trees or the products produced determine whether a forestry portfolio will develop actively (Cottle, 2004). The key to insurance demand includes a clear (probably private) ownership structure, a close link between forest management and market penetration, clear legal liability for the effects of forest management strategies (damage to the environment and the impact on local communities), and a realistic pricing of the forestry asset for the companies concerned.

Country-specific governmental regulations: This involves understanding the current regulatory environment including stumpage fees, forest practices codes, environmental regulations and the political power of various stakeholder groups, including conservation groups. Federal, provincial and state roles in regional economic development plans and lumber accords – as well as the outlook for pending legislative changes and renewals regarding import or export restraints – are important to understand.

Box 5.4: The World Bank's Investment Climate Survey

The World Bank surveyed businesses in the wood and furniture industry on their perceptions of informal practices and their access to infrastructure.

[29] Dominion Bond Rating Service Limited, "Industry factors Approach to Rating Forestry Companies," Natural Resources rating methodologies No. 6 (www.dbrs.com)

Many surveyed firms in ITTO producer countries point to anti-competitive or informal practices as an impediment to their venture. Firms in the forest industry, however, perceive this to be considerably less of an obstacle to business, on average by 10-25%.

Infrastructure development in these countries – such as obtaining electrical, water, and telephone connections – is consistently delayed by at least a few weeks longer than national averages – possibly due to remote locations of forest industries. In Guatemala it takes almost 5 months for a firm in the forest sector to obtain an electrical connection – 76 days longer than average.

In ITTO producer members for which the World Bank has data, forest sector firms also perceive telecommunications to be a business hindrance. Forest firms in Ecuador wait an extra 5 months – over 9 months in total – to obtain a telephone line and suffer outages twice as frequently as is normal for the nation. This has become an obstacle to attracting foreign investment, particularly because delayed infrastructure makes it more difficult to start a company and more difficult for existing firms to expand their businesses.

5E. COMPANY FACTORS

Industry factors and country risk factors are clearly important to international investors when they screen for prospective investments, but at the end of the day, investors must select among the investment prospects based on the company's merits. One of the key elements of successful venture capital investments lies in the talent of the entrepreneurs in successfully managing their businesses (Moles, 2003).[30]

In their CIFOR feasibility study of a forestry investment promotion entity, Costa and Kohn concluded that the main attributes in determining the attractiveness of investments to institutional investors are their risks and returns. Investment managers indicated to them that the required rates of return for forestry investments in developing countries ranged from 15% to 30% per annum. In 2000, analysts contended that a large number of forestry deals in the tropics could provide such returns (Costa 2000). For the past decade, however, a growing body of research on SFM/biodiversity investment problems in the tropics have shown the contrary to be true – well managed, investible SFM projects are scarce.

The cumulative failures of portfolio companies in investment funds have strong statistical significance for investors. If so few SFM projects have done well in tropical developing countries and so many have underperformed or folded, not only is the standard deviation of returns high for the sector, but the distribution is asymmetrically skewed negatively.[31] Projects targeting high expected returns tend to have optimistic, positively-skewed assumptions, seldom considering all the uncertainties, risks and costs of managing operations in remote areas. The difficulty in identifying viable projects has discredited the notion of an abundance of well-managed SFM opportunities in developing countries.

Dominion Bond Rating Service, Ltd (DBRS), a private Canadian rating company, lists the company level factors it considers in rating forestry businesses.:

[30] Moles, Patricia, Terra Capital, "Venture Capital as a Financing Tool for Conservation: Finance: Lessons Learned," Vth World Parks Congress: Sustainable Finance Stream, September 2003, Durban, South Africa.
[31] If skewness is negative, the average magnitude of negative deviations is larger than the average magnitude of positive deviations. (Alfusco and Leavy, *Quantitative Methods for Investment Analysis*, AIMR, 2001.)

- *Fiber*: In this category, the following factors are assessed: the company's access to fiber, including ownership of private lands vs. access to public timberlands; the quality and ability to harvest different species; annual cutting rights or long-term contracts with suppliers; the mix of virgin (hardwood versus softwood) versus recycled fiber capacity; the ability of the company to enhance yield on private timberlands; whether the lands are contiguous or remote and separated; and relative location of wood basket or fiber access to mills, including the exchange of fiber with other companies in local vicinity. Does the company enjoy freight advantages relative to its peers? Additionally what is the general trend in the company's harvesting costs and is it expected to deviate substantially going forward?

- *Mill integration and efficiency*: What is the age of the company's machinery and are extensive capital expenditures required for general maintenance, repair or compliance with environmental guidelines going forward? Have the mills been modernized or are there plans for future greenfield or brownfield expansion? The mills' fuel efficiency and energy-sources, including captive or long-term contracts with local area power sources are examined as well as the mills' ability to convert to alternative energy sources. Mill margins, cash cost per ton, and delivered cost per ton are analyzed. Is conversion to higher value added products possible? What are the historical experiences with start-ups of new mills and engineering problems? What is the mill's location relative to market? Are the mills fully integrated?

- *Product mix:* This includes assessment of the company's product mix including diversification, commodity grades vs. specialty higher-value added products, sales by geographic mix, and customer concentration and pricing sensitivity.

- *Pricing leadership:* This assessment relates to questions regarding the level of critical mass and market share by country that the company has in its chosen markets. The maturity of key markets is another consideration.

- *Cost position:* Being a low-cost producer and achieving economies of scale in chosen lines is a key consideration, particularly as it relates to cyclical, commodity products.

- *Selling and distribution:* What are the company's selling and distribution channels for its products? Paul Fuge of Certified Wood, a specialty wood importer, says that even well-known producers of specialty wood products can improve market share, margins, and reputation by improving buyer relationship management.[32]

- *Labor relations:* Historically what has been the company's relationship with its workers? Is the company's labor force unionized? If so, what are the dynamics of the contract (i.e., collective bargaining agreement, length, wage escalations, pensions)? Are the negotiations made on a company or industry basis? Is there work-rule flexibility?

- *Acquisition and expansion plans:* Assessing the company's ability to build its business. Is the company aggressive in its expansion plans or acquisitive, particularly when growth is in geographic or product areas that are new to the company? Has the company been successful in integrating previous acquisitions and achieving stated goals of revenue and cost synergies?

[32] Interviews with Paul Fuge, Certified Wood, October 2004.

- *Key intangibles*: These include hedging strategies as they relate to commodity products and foreign exchange, and private timberlands (potential monetization should provide financial flexibility).

To gain main-stream investor attention, prospective companies must have a history of successful operations, at least in the key areas of operations and sales. Investors view investment opportunities in start-ups or companies that have fewer than 3 years of verifiable financial statements with a high degree of skepticism.

Good management is scarce. In the developing country "middle-markets," survival requires wits and connections. Few have formal or on-the job professional training in business management. In remote locations where the SFM projects are found, the situation is even more acute. Problems cascade when the owners want the company to grow. If the company pays for the training, the additional costs become a further burden to profitability. If the investor pays – as in the case of some of the environmental venture capital funds – then the return on assets for the investment fund takes a beating. If an NGO pays, where is the sustainability of their funding?

In any case, the fundamentals still apply. DBRS's firm level factors cited above are not independent from country and industry factors, but high management skill is necessary to manage growing companies in uncertain economies and unsupportive business, financial and legal environments. If the DBRS rating criteria were applied against all on-going businesses in tropical forestry, forest product and biodiversity, it might be possible to describe more accurately the investible universe of tropical companies.

CHAPTER 6. PROMOTION OF INVESTMENT OPPORTUNITIES AND MANAGEMENT OF RISK

6A. PROMOTION OF INVESTMENT OPPORTUNITIES

Governments often try to attract foreign direct investment through investment promotion agencies (IPAs). There are at least now 160 national and more than 250 subnational IPAs around the world, compared to just a few a decade ago (WDR 2004). The role of these agencies can include: (a) information dissemination, (b) promoting country image, (c) investment facilitation (helping investors through administrative procedures), (d) investment generation by targeting firms in sectors that might be attractive to the foreign investor, (e) investor monitoring and continued assistance, and (f) policy advocacy – identifying issues that inhibit investment and advocating policy changes.

Table 6.1: Annual Promotion Budget of Selected IPAs

IPAs	US$ million
Singapore (EDB)	45.0
Costa Rica (CINDE)	11.0
Mauritius (MEDIA 1996)	3.1
Dominican Republic (IPC)	8.8
Malaysia (MIDA)	15.0

Source: Velde (2001)

Experience with IPAs over the last ten years shows that, across all sectors, FDI increases by 0.25% for every 1% increase in the IPA's budget. *However, IPAs appear to be most successful in countries that already have favorable investment climates (increases in budgets increase FDI nearly twice as much) (Morisset and Andrews-Johnson, 2003).* Budgets for IPAs, however, tend to be heavily biased towards country image management, and very little on policy advocacy (Morisett and Andrews-Johnson, 2003). A positive example of where a promotion-type activity in the forest sector has worked is in Chile between 1974-1994, when the country was fostering a free market approach and improving its private sector attractiveness. Focusing on promotion policies for the forest sector (the country's second largest industry), the State invested $140m in subsidies for afforestation and management, which catalyzed more than $4b in afforestation, management and industry (Castellanos, Fernando Raga, 2000). However, without that positive investment climate at the time, Chile may not have been able to attract such investments.

National IPAs, however, tend toward be geared to large-scale investments such as telecommunications and other infrastructure projects – and rarely include investment opportunities in the forest sector. To counter this, in 1999, an entity rather similar to an IPA but global and geared toward SFM investment opportunities was proposed to the ITTO in 1999[33] and followed by a feasibility concept.[34] The entity's core activity would be centered on investment packaging and the structuring of financial deals for SFM operators, and it would provide streamlined access to risk-mitigation services and facilities, primarily in the private sector.

[33] Mahendra Joshi, *Financing Sustainable Forestry: Issues Under International Deliberation*, UNDP Programme on forests and the IFF Secretariat, April 1999

[34] Pedro Moura Costa & Gerald Kohn, "Feasibility Analysis For An International Investment Promotion Entity For Sustainable Forest Management," report for the CIFOR, January 2001

6B. RISK MANAGEMENT

Methods of managing company risk

For private sector investors, risk management at the country and industry level consists of portfolio diversity; that is, the portfolio managers compile a portfolio that has offsetting or non-correlated risks. Investors say that the primary method of managing company risk is to choose companies with experienced managers with a successful track record. On a singular company basis, firm level risk/return conditions (opportunities and constraints) are covered by expectations of returns for every unit of risk (standard deviation of returns). If the rewards exceed the risk of loss, then risk is "managed." Otherwise insurance, co financing, and guarantees are other ways of reducing the prospect of loss.

Mechanisms to manage country level risk

With mechanisms to manage country-level risk (e.g. through MIGA or other multilateral agency guarantee programs), it should be possible for a borrower to mobilize funds on terms and conditions significantly better than it could do on its own (including extensions of maturity and lower interest spreads).

> ***Multilateral Investment Guarantee Agency (MIGA):*** Created in 1988 as a member of the World Bank Group, MIGA aims to promote foreign direct investment in emerging economies by providing political risk insurance (guarantees) to investors and lenders for non-commercial risks such as conversion of currency (transfer restriction), expropriation, breach of contract with the government, and war and civil disturbance. Types of foreign investments that can be covered typically include equity, shareholder loads and shareholder loan guaranties, but could also include other forms of investment such as technical assistance and management contracts and franchising and licensing agreements. Coverage is usually available for up to 15-20 years and up to US$200 million. Through these guarantees, MIGA can help reduce a project's risk profile.
>
> MIGA also helps developing countries attract and retain private investment, mainly by helping to develop investment strategies, providing information on investment opportunities, and providing dispute resolution and legal services. As an international organization that acts as an umbrella of deterrence against government actions that could disrupt investments, MIGA can essentially act as an objective intermediary which can enhance investor confidence that an investment will be protected against non-commercial risk.
>
> A portfolio review in 2004 shows that, to date, MIGA has not been used extensively by the forest-products sector specifically. MIGA engagement is always demand-driven – indicating that the forest products sector is either not aware or not interested in the services that MIGA provides. MIGA is generally perceived as only guaranteeing large projects. However, guarantees of US$500,000 can be done, although this may not be worth the transaction cost. Several MIGA guarantees for tourism enterprises (Costa Rica and Tanzania) have been extended to in-country financial institutions which go on to provide loans to small and medium-sized enterprises – and which could therefore enable the financial institution to better reach the forest products sector.

World Bank Sector Guarantee Programs: The World Bank's Guarantee Instrument was formally launched in 1994 to address the growing need to offer political risk mitigation products to commercial lenders contemplating financial investment in developing countries. It recognizes that there are situations where official agencies and the private market do not currently offer sufficient insurance coverage. While MIGA provides political risk insurance primarily for equity, the guarantee program focuses more on debt financing. The Program includes three types of guarantees: (a) partial credit guarantees to cover debt service defaults; (b) partial risk guarantees to cover debt service defaults on a loan to private sector projects caused by a government's failure to meet its contractual obligations related to the private project; and (c) policy based guarantees to cover a portion of debt service on borrowings by the *country* from private foreign creditors in support of agreed structural, institutional and social policies and reforms.

The partial risk guarantee is most applicable to the forest sector, and in fact has already been implemented in the Russia Forest Sector Guarantee Project starting in 1998. These partial risk guarantees, structured for export-oriented foreign exchange generating commercial projects, can cover breach of contract, availability and convertibility of foreign exchange, changes in law, and expropriation/nationalization. It can be effective when key risks include problems with tariffs, regulatory frameworks, rights of way, licenses, expropriation, termination amounts, interference in arbitration processes and rule of law. The use of a partial risk guarantee can result in more bidders, increased upfront investment commitments, increase sale value, and lower tariffs. They could also be designed to cover a series of smaller projects, where an intermediary retails a series of risk guarantees. The PRGs are seen to be the most useful in sectors in early stages of reform, larger or riskier operations, or operations highly dependent on the support or activities of the government.

Other Guarantee Programs: Other multilateral agencies also offer guarantees similar to the World Bank Group's, such as the Inter-American Development Bank (IADB), the Asian Development Bank (ADB), and the European Bank for Reconstruction and Development (EBRD). Some bilateral agencies can also provide guarantees such as the Export Import Bank and the Overseas Private Investment Corporation (OPIC), which helps US businesses invest overseas and complements the private sector in managing the risks associated with foreign direct investment, and supports U.S. foreign policy. In many cases, these agencies can make guarantees jointly with each other.

Independent Third Party Verification or Certification

Chains of custody and independent audits (e.g. through independent verification of certification programs) provide banks and investors with objective documentation of good forestry management practices. They can therefore help to mitigate against both country-level risks, such as concerns about legality of the forest product, as well as company risk. Verification of legality or the major national and international certification programs provide investors with some assurance that the project does not deal in illegally or unsustainably harvested timber – thereby giving them an affirmative defense against reputational risk.

These certification programs also provide assurance of market access. With the recent proliferation of governmental procurement policies, retailer procurement preferences, or voluntary partnership agreements (VPAs) under the EU FLEGT Action Plan, these programs will generate more demand for independently

verified wood products.

In the corporate world, sustainable management methods must pass a basic value test of reducing risk, improving margins and enhancing growth. Several institutions are recognizing the importance of independent verification to ensure that forest products from developing countries maintain their credibility with the environmentally-sensitive markets, especially in Europe.

CHAPTER 7. FINDINGS AND RECOMMENDATIONS

The findings and recommendations from this study include:

1. ***More attention needs to be paid to supporting the growth of small and medium sized enterprises:*** In ITTO tropical producer countries, the forest product-related industry is quite diverse, spanning a broad range of firms and entrepreneurs, from individuals operating in the informal sector, to small and medium-sized enterprises to local manufacturing companies, to large multinational operations. The industry spans a broad range of products and services, from tiny chainsaw operations to large corporations that can have annual sales larger than the GDP of many small developing countries. ***All have the potential to invest productively, create jobs and expand – thereby contributing to economic growth and poverty reduction.***

   When discussing the need to attract investment to the forest sector in many developing countries, however, many organizations and governments tend to focus on attracting large-scale international investors. While most internationally traded goods are produced by multi-nationals, the majority of the markets (excluding pulp and paper) are domestic and produced by small and medium-sized domestic producers. The bulk of private financing also remains domestic.

   Given the relative size of the domestic versus international markets and the potential for improvements in domestic producers' efficiency and their ability to contribute to growth and employment, very little attention has been focused on how to improve their business environment and company productivity. Little attention is given to relieving their constraints to growth.

   Specific recommendations:

   - Development agencies such as the World Bank and IFC create mechanisms to address barriers to growth for small and medium-sized enterprises. While development assistance to support small firms through credit lines and capacity building has had mixed results, donor programs could provide concessional loans or guarantees to support specific transactions. Intermediaries such as WWF's Global Forest Trade Network or Forest Trends' Business Development Fund could help identify where such programs might work.

2. ***There is no substitute for good governance in fostering a positive business investment climate:*** Good governance, including control over illegal activities, will do the most to foster responsible private sector investment and improve its contribution to social and economic development. Many good opportunities in developing countries are being by-passed not because of the investment itself, but because of the poor business environment in the host country as a whole. Policy-related risks dominate many firms' concerns in developing countries and cripple incentives to invest, innovate and increase productivity.

   Specific recommendations:

   - Governments, supported by donor programs, must work to improve the climate in which firms and entrepreneurs of all types invest. Governmental policies and behaviors will play a critical role in shaping the investment climate, by ensuring that firms are not saddled with

unnecessary costs and procedures, stabilizing uncertainty and risk, and eliminating unjustified barriers to competition. Governments need to tackle corruption and other forms of rent-seeking, to build credibility with firms, to foster public trust and legitimacy and to ensure their policy interventions are crafted to fit local conditions.

- International firms can be more proactive in working with governments to make them aware of the negative impact of poor governance, by engaging in processes such as the regional Forest Law Enforcement and Governance ministerial process.
- Retailers and private financial institutions should require certified sustainable or legal wood products, ensuring they do not do business with companies that cannot guarantee legal wood sourcing – thereby helping governments to eliminate the problem of illegal logging which undercuts the profits of legal operations.

3. ***Skilled worker and labor markets are needed:*** Improving an investment climate goes hand in hand with enhancing human capital. Increased funds and modern technology will not improve an enterprise that lacks sound management, good products, sales channels and successful buyer relationships. For domestic and international firms alike, inadequate management and marketing skills of workers are a serious obstacle to tropical forest operations. To be able to participate in international finance markets or trade in the carbon market, many firms will need assistance.

Specific recommendations:

- Governments can foster a skilled workforce through basic education programs, consider labor market interventions that promote higher skills, and help workers cope with change. Tropical Forest Foundation training sessions for loggers in Brazil have been quite successful.
- International firms can invest in local workers – for example, the training that Global Forest Products does in South Africa – rather than importing workers.

4. ***Investment and risk guarantee mechanisms which work in developed countries need to be adapted to the tropical natural forest context.*** Despite the wide diversity of industry operations and a parallel wide range of investment opportunities of different sizes, products, degrees of capital equipment intensity, markets and means of accessing finance – many investment mechanisms in use in developed countries today, such as TIMOs, are simply not useful in the tropical natural forest-based industry due to long term country risk. In most cases, these tools are simply not applicable in the developing country context. Security programs for responsible private investors could be supported.

Specific recommendations:

- MIGA and the World Bank Sector Guarantees could create funds to support the World Bank Groups new forest policy, which recognizes the role that responsible private investment can play in economic and social development in its client countries and helps to reduce insurance premia for sustainable forest operations.

5. ***Sharing the experience of sustainable forestry success:*** There are sustainable forest operations in developing countries around the world with attractive risk adjusted returns, which should be able to

attract larger pools of investment capital. Investors such as GEF and Forest Trends' Business Development Fund (BDF) are working with these types of operations to improve their management efficiencies, as well as enable them to access multiple income streams from several ecosystem products and services, rather than timber alone. The increased returns helps to counter the risk that may be externally imposed by a poor business environment in which they may be situated. Sharing the experience of positive operations will help to expand the model.

Investment promotion (IP) programs have been shown to work only if the overall investment climate in a country is already secure. However, forest investment forums based at the regional level, such as the one hosted by the World Bank, ITTO and others in Fall 2003, can raise the awareness of government about the need to address overall governance issues, as well as make investors aware of opportunities available to them in a particular region.

6. ***Stimulate demand for products made from responsibly-produced wood:*** In the corporate world, sustainable management methods must pass a basic value test of reducing risk, improving margins and enhancing growth. Several institutions are recognizing the importance of independent verification to ensure that forest products from developing countries maintain their credibility with environmentally-sensitive markets, especially in Europe. In October 2004, The IFC's LAC Small/Medium Enterprise (SME) Facilitation and WWF's Global Forest and Trade Network teamed up to launch pilot projects linking manufacturers, traders, and forest managers committed to the business of sustainable forestry. The objective is to stimulate demand for products made from responsibly-produced wood, improve business management and production of project participants, and promote financing and investment opportunities within supply chains.

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ANNEX 1

TABLE A: INVESTMENT CLIMATE INDICATORS: WORLD BANK INVESTMENT CLIMATE SURVEYS

			Policy Uncertainty[1]		Corruption					Courts	
	Survey year	Sample size	Major constraint (%)	Unpredictable interpretation of regulations (%)	Major constraint (%)	Report bribes are paid (%)	Avg. bribe as % of sales	Firms expected to give gifts in meetings with tax inspectors (%)	Value of gift expected to secure government contract (% of contract)	Major constraint (%)	Lack confidence that courts uphold property rights (%)
Bolivia	2001	671	--	--	--	40.5	--	35.2	--	--	--
Brazil	2003	1642	75.9	66	67.2	51	--	--	12.21	32.8	39.6
Cambodia	2003	503	40.1	44.4	55.9	82.3	6	42	5.4	31.4	61
Ecuador	2003	453	60.7	68	49.2	58.9	5.4	1.4	9	34.1	70.8
Guatemala	2003	455	66.4	89.5	80.9	57.6	7.4	17.5	4.3	36.7	71.3
Honduras	2003	450	47	65.9	62.8	50	6	4.4	4.6	21.8	56.1
India	2003	1827	20.9	64.1	37.4	--	--	--	--	--	29.4
Indonesia	2004	713	48.2	56	41.5	50.9	4.6	11.2	0.8	24.7	40.8
Malaysia	2003	902	22.4	--	14.5	--	--	--	--	--	19.1
Nigeria	2001	232	--	55.1	--	--	--	12.8	--	--	--
Peru	2002	583	71.1	78.7	59.6	--	--	--	11.2	--	34.7
Philippines	2003	719	29.5	49.1	35.2	50.6	4	27.6	2.2	--	33.8

Notes: [1] *Economic and regulatory policy uncertainty*

Table A Continued

	Crime				Regulation and Tax Administration					Finance[2]	
	Major constraint (%)	Report losses from crime (%)	Avg. loss from theft, robbery, vandalism, and arson as % of sales	Avg. loss from other crime as % of sales	Tax rates as major constraint (%)	Tax admin. as major constraint (%)	Licensing as major constraint (%)	% Mgt time spent dealing with officials	Avg. days to clear customs	Major constraint (%)	Small firms with loans (%)
Bolivia	--	--	--	--	--	--	--	--	9.3	--	--
Brazil	52.2	22.7	0.65	2.8	84.9	66.1	29.8	9.4	13.8	71.7	51.6
Cambodia	41.7	20.1	2.32	7	18.6	20.7	11.7	14.6	--	9.9	7.9
Ecuador	27.8	36.4	1.3	3.5	38.1	28.5	13	17.7	16.4	42.2	54.6
Guatemala	80.4	42.2	9.1	4.8	56.5	34.8	15.6	17.4	9.4	38.7	43.5
Honduras	60.9	3.3	3.2	3.1	35.6	23.2	21.1	14.2	5.1	55.4	46.9
India	15.6	--	--	--	27.9	26.4	13.4	15.3	6.7	19.2	51.1
Indonesia	22	15.6	0.5	3.1	29.5	23	20.5	14.6	5.8	23	16.7
Malaysia	11.4	19.1	--	3	21.7	13.3	10.9	10.2	3.6	17.8	57.3
Nigeria	36.3	--	--	--	--	--	--	--	17.8	--	11.1
Peru	51.6	21.8	7.4	10.2	--	--	--	--	7.9	55.8	43.6
Philippines	26.5	27.1	1.3	4.2	30.4	25.1	13.5	11	2.8	18.2	16.8

Notes:

[2] *Access to finance or cost of finance*

Table A continued

	Electricity & Infrastructure					Labor	
	Firms reporting electricity outages as major constraint (%)	Firms reporting outages (%)	Losses from outages (% of sales)	Losses due to water supply failures (% of sales)	Losses due to telephone outages (% of sales)	Skills as major constraint[3] (%)	Labor regulations as major constraint (%)
Bolivia	--	--	--	--	--	--	--
Brazil	20.3	40.1	3.8	0.6	1.2	39.6	56.9
Cambodia	12.7	38.6	5.2	1.9	2.6	6.6	5.9
Ecuador	28.3	46.4	5.7	4.4	7.6	22.3	14.1
Guatemala	26.6	60.7	3.7	2.7	4.4	31.4	16.7
Honduras	36.4	58	5.2	2.5	5.4	26.4	14.2
India	28.9	69.2	11.6	--	--	12.5	16.7
Indonesia	22.3	33	6.1	4.4	2.6	18.9	25.9
Malaysia	14.8	40.6	5.2	--	--	25	14.5
Nigeria	97.4	--	--	--	--	--	--
Peru	11.1	30.5	6.3	--	--	12.5	--
Philippines	33.4	41.6	9.6	5.7	--	11.9	24.7

Notes: [3] *Skills of available workers*

Data not available for Cameroon, Central African Republic, Colombia, Congo, Cote d'Ivoire, Democratic Republic of the Congo, Fiji, Gabon, Ghana, Guyana, Liberia, Mexico, Myanmar, Panama, Papua New Guinea, Suriname, Thailand, Togo, Trinidad & Tobago, Vanuatu, and Venezuela.
Source: World Development Report 2005, World Bank.

TABLE B: INVESTMENT CLIMATE INDICATORS: EXPERT POLLS AND OTHER SURVEYS, ITTO PRODUCER COUNTRIES

	Starting a business		Enforcing a contract		Registering property		Resolving insolvency	Investment profile[1]	Intensity of local competition[2]	Transparency of gov't policy making[3]	Regional disparities of business environ.[4]
	Days Jan '04	Proced. Jan '04	Days Jan '04	Proced. Jan '04	Days Jan '04	Proced. Jan '04	Years Jan '04	ICRG 2003	WEF Index 2003/4	WEF Index 2003/4	WEF Index 2003/4
Bolivia	59	15	591	47	92	7	1.8	9.5	3.8	3	3
Brazil	152	17	566	25	42	14	10	7.5	5.2	3.6	2.1
Cambodia	94	11	401	31	56	7	--	--	--	--	--
Cameroon	37	12	585	58	93	5	3.2	6.5	4.1	4.4	2.8
Central African Republic	14	10	660	45	69	3	4.8	--	--	--	--
Colombia	43	14	363	37	23	7	3	9.25	4.6	4	2.8
Congo	67	8	560	47	103	6	3	8.5	--	--	--
Cote D'Ivoire	58	11	525	25	340	7	2.2	6	--	--	--
Democratic Republic of the Congo	155	13	909	51	106	8	5.2	6	--	--	--
Ecuador	92	14	388	41	21	12	4.3	6	3.5	2.5	2.9
Ghana	85	12	200	23	382	7	1.9	7	4.3	4.3	3
Guatemala	39	15	1459	37	55	5	4	11	4.4	2	2.7
Honduras	62	13	545	36	36	7	3.7	8	3.4	2.9	3.5
India	89	11	425	40	67	6	10	8	5.6	4.1	2.5
Indonesia	151	12	570	34	33	6	6	4.5	4	3.6	3.6
Malaysia	30	9	300	31	143	4	2.3	8.5	5.3	5	3.9
Mexico	58	8	421	37	74	5	1.8	11.5	4.9	3.7	2.5
Nigeria	44	10	730	23	274	21	1.5	3.5	4.7	3.5	2.9
Panama	19	7	355	45	44	7	2	9.5	4.5	2.8	3.4
Papua New Guinea	56	8	295	22	72	4	2.8	8	--	--	--
Peru	98	10	441	35	31	5	3.1	7.5	4.6	2.9	2.2
Philippines	50	11	380	25	33	8	5.6	10	5	3.7	2.5
Thailand	33	8	390	26	2	2	2.6	8.5	5.3	4.3	4.1
Togo	53	13	535	37	212	6	3	7.5	--	--	--
Venezuela	116	13	445	41	34	8	4	5.5	3.8	2.1	3.3
World	**50.8**	**9.9**	**388.3**	**31.2**	**81.4**	**6.2**	**3.2**	**8.8**	**4.7**	**3.9**	**3.4**

Low income	65.8	10.8	416	34.5	99.6	6.8	3.9	6.8	4.2	3.6	2.7
Middle income	50	10.6	422.1	32.6	80.4	6.5	3.4	8.7	4.6	3.5	3.1
Lower middle income	50	11.3	424.9	33.1	66.4	7	3.4	7.8	4.5	3.4	3
Upper middle income	49.9	9.5	417.2	31.8	104.2	5.6	3.3	10	4.8	3.7	3.3
Low & middle income	57.5	10.7	419.2	33.5	89.3	6.6	3.6	7.9	4.4	3.6	3
East Asia & Pacific	72.9	9.9	373.8	31	59.4	5.2	4.2	7.2	5	4.2	3.4
Europe & Central Asia	41.7	9.9	389	30.2	120.3	6.7	3.3	9.2	4.6	3.3	2.8
Latin America & Caribbean	73.5	12	471.7	35.1	56.8	6.9	3.6	8.1	4.4	3.1	3.1
Middle East & N. Africa	39.3	10.2	412.6	37.3	48.3	6.7	3.7	8.1	4.4	4.1	3.1
South Asia	46.8	9.3	375	30	55.8	5.8	4.8	6.6	5	3.6	2.9
Sub-Saharan Africa	63.2	11.2	434.2	35.2	114.2	6.9	3.6	7.2	4.2	3.8	2.9
High income	27.2	7	280.2	23.2	49.9	4.7	2	11.4	5.4	4.7	4.4

Notes: [1] *– "combines assessments of contract viability/expropriation and the ability to repatriate profits and payment delays"*

[2] *– "competition in the local market ranges from limited in most industries and price-cutting is rare (1) to intense in most industries as market leadership changes over time (7)"*

[3] *– based on "firms in your country are usually informed clearly and transparently by the government on changes in policies and regulations affecting your industry," on a scale of 1 (never informed) to 7 (always fully and clearly informed)*

[4] *– "differences among regions within your country in the quality of the business environment (i.e. human resources, infrastructure, etc.)," on a scale of 1 (large and persistent) to 7 (modest)*

Data not available for Fiji, Gabon, Guyana, Liberia, Suriname, Trinidad & Tobago, Vanuatu.

Source: World Development Report 2005, World Bank.

TABLE C: ITTO PRODUCER COUNTRY RISK INDICATORS

Rank Mar '05	Rank Sept '04	Country	Total Score	Political Risk	Economic Performance	Debt Indicators	Default/ Rescheduled Debt	Credit Ratings	Bank Finance Access	Short-term Finance Access	Capital Markets Access	Forfeiting	CPI Adjusted Score	CPI Adjusted Rank (change)
			100	*25*	*25*	*10*	*10*	*10*	*5*	*5*	*5*	*5*	*100*	
47	47	Malaysia	64.57	18.67	10.51	9.33	10.00	6.25	0.53	3.17	3.00	3.10	63.97	45 (+2)
49	48	Mexico	62.68	16.99	9.50	9.15	9.99	5.00	0.41	4.17	3.50	3.97	61.45	49 (0)
55	53	Trinidad & Tobago	60.35	16.29	10.92	9.72	10.00	5.00	0.00	3.83	3.00	1.60	59.56	55 (0)
56	54	Thailand	59.89	17.32	8.96	9.20	10.00	5.42	0.56	3.33	2.00	3.10	58.83	56 (0)
60	60	India	56.34	15.33	8.77	9.25	10.00	3.96	0.12	3.33	2.00	3.59	55.03	60 (0)
68	71	Brazil	49.04	12.44	7.91	7.74	10.00	2.29	0.50	3.00	2.25	2.91	48.62	69 (-1)
69	67	Panama	49.03	12.99	8.00	8.73	10.00	3.54	0.36	3.17	0.50	1.74	48.51	70 (-1)
71	75	Philippines	48.69	13.21	7.17	8.61	10.00	2.92	0.32	3.33	1.00	2.13	47.67	72 (-1)
76	77	Peru	46.28	11.99	7.36	8.77	10.00	2.92	0.01	2.50	0.50	2.23	45.81	76 (0)
77	74	Colombia	46.03	11.91	6.75	8.28	10.00	3.13	0.00	3.33	0.50	2.13	45.69	77 (0)
81	87	Fiji	43.08	12.25	5.66	9.71	10.00	3.13	0.00	2.33	0.00	0.00	43.11	82 (-1)
82	83 (tie)	Guatemala	42.99	11.06	5.44	9.49	10.00	2.81	0.00	3.00	0.50	0.68	42.02	83 (-1)
85	88	Indonesia	41.88	10.67	6.59	8.52	9.31	1.88	0.32	2.17	0.50	1.94	40.87	86 (-1)
91	83 (tie)	Vanuatu	40.03	11.33	6.81	9.39	10.00	0.00	0.00	2.50	0.00	0.00	---	---
98	101	Bolivia	37.73	7.86	5.61	8.50	10.00	0.63	0.46	2.58	1.50	0.58	37.01	101 (-3)
99	102	Honduras	37.71	9.19	5.47	8.58	10.00	1.25	0.25	2.50	0.00	0.47	37.05	100 (-1)
104 (tie)	98	Ghana	36.68	8.62	4.13	8.30	10.00	1.56	0.00	2.50	0.50	1.07	36.69	103 (+2)
104 (tie)	116	Venezuela	36.68	7.89	5.44	8.86	10.00	1.04	0.18	1.33	1.25	0.68	36.09	105 (-1)

Source: EuroMoney

Rank Mar '05	Rank Sept '04	Country	Total Score	Political Risk	Economic Performance	Debt Indicators	Default/ Rescheduled Debt	Credit Ratings	Bank Finance Access	Short-term Finance Access	Capital Markets Access	Forfeiting	CPI Adjusted Score	CPI Adjusted Rank (change)
			100	*25*	*25*	*10*	*10*	*10*	*5*	*5*	*5*	*5*	*100*	
107	114	Ecuador	36.27	7.61	6.59	8.42	9.90	0.42	0.78	1.58	0.50	0.47	35.72	109 (-2)
115	110	Papua New Guinea	35.54	8.34	4.03	8.76	10.00	1.46	0.00	2.17	0.50	0.29	35.15	115 (0)
117	120	Guyana	35.15	9.18	6.82	6.98	10.00	0.00	0.00	2.17	0.00	0.00	34.96	116 (1)
124	125	Gabon	33.56	8.01	4.06	8.83	10.00	0.00	0.00	2.67	0.00	0.00	33.57	124 (0)
125	118	Cameroon	33.50	8.58	3.37	8.72	9.70	0.63	0.02	2.50	0.00	0.00	32.95	130 (-5)
140	138	Nigeria	32.00	6.31	4.48	8.92	10.00	0.00	0.00	2.00	0.00	0.29	31.24	142 (-2)
142	131	Cambodia	31.51	5.35	6.04	8.94	10.00	0.00	0.00	1.17	0.00	0.00	31.27	141 (+1)
154	156	Togo	28.35	7.53	1.15	8.51	10.00	0.00	0.00	1.17	0.00	0.00	28.26	153 (+1)
156	154	Myanmar	27.79	3.97	2.89	9.77	10.00	0.00	0.00	1.17	0.00	0.00	27.30	157 (-1)
157	161	Central African Republic	27.63	4.62	3.56	8.28	10.00	0.00	0.00	1.17	0.00	0.00	27.44	156 (+1)
163	160	Congo	25.96	4.45	3.09	7.26	10.00	0.00	0.00	1.17	0.00	0.00	25.83	163 (0)
167	161 (tie)	Suriname	24.88	7.66	4.81	0.00	10.00	1.25	0.00	1.17	0.00	0.00	25.80	164 (+3)
168	163	Cote d'Ivoire	24.85	3.48	1.42	8.61	9.50	0.00	0.00	1.83	0.00	0.00	24.62	168 (0)
179	176	Liberia	18.52	1.92	4.59	1.17	10.00	0.00	0.00	0.83	0.00	0.00	18.69	179 (0)
180	182	Dem. Rep. of the Congo (Zaire)	18.16	4.32	2.67	0.00	10.00	0.00	0.00	1.17	0.00	0.00	18.28	180 (0)

ANNEX 2: LIST OF INVESTMENT FUNDS TARGETTING SFM INVESTMENTS

A2R Fundos Ambientais

Type:Venture capital equity. Investment fund family. The principal aim of A2R is to seek the highest return on investment for its clients and partners in forestry, biodiversity and clean energy. A2R terminated in 2003.

Background: A2R was a joint venture between Banco Axial and GMO Renewable Resources, the forestry investment arm of Boston-based asset manager, Grantham Mayo van Ottherloo & Co. LLC (GMO). A2R was involved in 3 relevant funds:

- Terra Capital (discussed below) was a US$15 million biodiversity investment fund investing in forestry, non-timber forest products, organic agriculture, aquaculture, and ecotourism, with promised returns between 20 and 35 percent.
- Brazil Sustainable Forest Fund (see below) which sought US$100 million in investments to focus on old growth and planted forests throughout Latin America. One of this fund's early portfolio companies was Gethal-Amazonas SA, a one of the largest plywood manufacturers in the Amazon region and an early FSC certified operation.[35]
- Clean Technology Fund was proposed in 2000, but it was likely never launched.

A2R terminated in 2003. According to an IFC report: "*Errors of judgment, not necessarily linked to the sustainability of the target projects, compelled A2R to close shop in 2003, leaving Axial Par as the only company actively involved in the environmentally oriented VC market*." According to other asset managers, "*the biggest problem was their niche and the fact that their projects didn't live up to expectation*." Poor financial management was a major factor. The fund founder, John Fogash summed it up: "*The environmental and social aspects of these projects were good, but financially, these projects were very badly managed*." Underperformance was associated with unexpected, added cost of managing failing projects. Asset managers also point to a fundamental conflict between financial objectives and environmental objectives.

Adding to the problems was excessive optimism about the fund's ability to generate venture capital returns. They were never realized. Also, management had unrealistic optimism about ready exits to sell the projects. These high expectations, however, were not inconsistent with the private equity and venture capital bubble ethos during the later 1990's.

AxialPar

Type: Private fund Equity. Succeeded Banco Axial.

Background: AxialPar succeeded Banco Axial in 2002, one of the investors in Terra Capital. AxialPar is a

[35] Elizabeth Johnson, "Seeing green: investing in the environment can bring more rewards than just helping the planet," Feb, 2001, Latin CEO: Executive Strategies for the Americas.

self-financed, venture capital group focusing on sustainable extractive and energy sectors. AxialPar considers investments in Limited Liability Companies or Corporations in sustainable industries including forestry and carbon with yearly sales up to R$ 10 million. Companies must be located in Brazil and be focused on sustainable development. To be considered, companies must have a three-year business plan addressing financial, social and environmental factors. Priority is given to investments over 30% and below 49% of equity.

Brazil Sustainable Forest Fund

Type: Equity

Background: (See below under GMO Renewable Resources Fund).The investor was GMO for $15 million. 85% stake of Gethal Amazonas. Launched by A2R with a $100 million target. GMO cooperated with Banco Axial (a Brazilian environmental investment bank) and UNDP in developing the funding required for the project. GMO provides the capital for the project, including acquisition of the enterprise and a capital investment program to ensure sustainability and improve production and returns.

EcoEnterprises Fund

Type: Public private matching fund, 50% by private sector

Background: The EcoEnterprises Fund was established by the Nature Conservancy and the Multilateral Investment Fund of the Inter-American Development Bank to offer venture capital to environmentally and socially responsible businesses. The fund seeks return of 18 to 20 percent on equity investments and lower returns on debt instruments.

Investments range from $50,000 to $800,000, with an average investment of $225,000. The Fund invests in companies at all stages of development with sales revenues up to $3 million. Businesses in its portfolio range from new ventures launched by nonprofit organizations to established companies that pay fees to a local conservation partner. Investments: non-timber forest products projects – NatuScience, Ltda.; Sambazon do Brasil Representação Comerical, Ltda. Sustainable Forestry – Interforest, S.A., Jolyka Bolivia, S.R.L., NORAM de Mexico, S.A. de C.V.

EcoLogic Enterprise Ventures

Type: Green small-business loan fund. Lender to exports in certified products (ie. organically grown coffee) in Central and Latin America. Also makes a limited number of fixed asset loans and issues standby letter of credit guarantees.

Background: The ownership is divided non-profit (37% foundations, 32% individuals, 26% faith based

funds and 5% coffee roasters), with products principally short-term trade finance, off-season farm maintenance loans, and long-term financing to purchase farm equipment, expand productive infrastructure, or adopt appropriate technologies.

Although Ecologic Finance makes small loans, the business model is scalable and perhaps relevant to SFM operators that lack access to affordable credit. The key to EcoLogic Finance's social lending model is the fact that it is asset-based lending. Risk management concentrates on short-term working capital and self-liquidating trade transactions. With limited exceptions, borrowers must have an existing sales relationship with one or more international buyers that specialize in certified products, such as organically grown and shade-managed coffee. EcoLogic Finance facilitates and guarantees buyer advances to eligible producers.

EcoLogic Finance advances funds against signed contracts with the importers (purchase orders). When the product is shipped, the importer sells the product and pays the invoice that covers the principal and interest due on the advance. In other cases, EF uses standby letters of credit to guarantee importer advances which conserves cash (collateral funds remain as cash in EF's US bank).

Funding the loan fund are socially responsible investors. StarBucks lent Ecologic $2.5mm in September 2004. EF enhances credit through Development Credit Authority (DCA) of the U.S. Agency for International Development that provides the fund with a 50% guarantee on disbursements of up to $4 million. The size, scope, and concessional funding from agencies and foundations, limit the application of the EF business model to forestry that has much larger working capital needs. It would have to be adapted to the SFM industry which could prove awkward.

Environmental Enterprises Assistance Fund

Type: Non-profit equity investor, investment fund management specialized in the management of Sustainable Development Venture Capital Funds in Latin America.

Background: EEAF was established in 1990 to invest in smaller, private sector environmentally contributive businesses in emerging markets, with funding from Corporación Financiera Ambiental's. Shareholders include: Multilateral Investment Fund, Swiss Office for Foreign Economic Affairs, Stichting Hivos - Triodos Funds, Swedfund International AB, FINNFUND, Environmental Enterprises Assistance Fund, Citizen's Energy Corporation, Global Partners LLC, and a private investor.

It was established as a non-profit organization and brings hands-on venture capital experience to the sustainable development movement. It manages and co-manages approximately $85 million in investment capital and has financed entrepreneurs in 11 countries.

Environmental Enterprises implements sustainable development by investing in smaller, private sector businesses in emerging markets. Established as a non-profit organization in 1990, EE brought hands-on venture capital experience to the sustainable development movement.

Unfortunately EEAF selected investment projects that were not venture capital quality (see A2R, and Terra

Capital). Industry analysts say the long term debt and equity only products ignored working capital needs to leverage the equity. Costs of technical assistance to substandard projects was excessive. It folded in 2003.

GEF (Global Environment Fund)

Type: International investment funds, private equity and fund management

Background: Established in 1989, GEF has completed over 30 investments. In the sustainable forestry sector, it acquired a controlling interest in Global Forest Products (Pty) Ltd. and South African Plywood (Pty) Ltd., two South African-based integrated forest products companies. It concentrates on environmental infrastructure.

GEF has a highly qualified investment team. The asset management teams have specialized skills in private equity, project finance, legal structuring, corporate governance and business enterprise development. The team is comprised of three Managing Directors each of whom has three decades of global investment experience and includes six investment professionals who have completed or are in the process of completing certification as Chartered Financial Analysts (CFAs).

The practice of value-investing is commonplace but is difficult to execute. The GEF investment model identifies undervalued companies with experienced management and a clear vision of how to take advantage of the significant opportunities for growth and value creation. As such, GEF seeks companies with market advantage such as long-term contracts, strategic location, first-mover advantage, recognized market leadership, advanced technology or a unique expertise. Rigorous investment selection process. Active management of portfolio companies.

GMO Renewable Resources

Type: Large investment fund and asset manager. – GMO manages funds for Harvard Management Company.

Background: Relevant to SFM forestry, GMO Brazil Sustainable Forest Fund was created in 1999 to demonstrate the economic value of the Amazon rainforest under SFM by creating a stumpage market. These now use over 30 tropical hardwood species, most of which were considered "uncommercial" before investing (this raises a red flag with some environmentalists). Partnered with Banco Axial to found A2R. (See AxialPar, A2R, Terra Capital, and Brazil Sustainable Forest Fund).

Investments:

- GMO Brazil Sustainable Forest Fund
- Floream – FSC certified land owner & forest operator (Amazonas State)
- Gethal Amazona – FSC specialty plywood manufacturer (Amazonas State)
- Paper file w description of these two investments and the philosophy available (WB Forest Investment Forum notebook, panels 3-5)

Factors of success and distress: GMO has a group of skillful, trained analysts. Selection of investments is a key success factor.

Kijani Capital Fund

Type: African venture capital facility for biodiversity through private equity, debt finance, and guarantees. Investors were to be IFC and IUCN (World Conservation Union) with average investment size of $0.2-8m with 5-10 years terms.

Background: Kijani Capital Fund was never set up. It had been designed to provide private equity and debt finance to biodiversity business projects with capital requirements from $500,000 to $10 million. Its technical assistance partner, Kijani Business Service, was designed to provide technical assistance to entrepreneurs to develop biodiversity business plans. It was intended to stimulate new foreign and domestic direct investments in the emerging African biodiversity business sector..

The Fund was intended to combine the biodiversity expertise of IUCN with the IFC's emerging market investment banking expertise.

Sustainable Forest Systems LP

Type: SFM limited partnership. Management and equity.

Background: The minimum return hurdle was 20% receipt and maintainance of FSC certification. Invested in Yuguarete forestland in Paraquay and operations in Boliva. Acknowledged that management must include comprehensive scientific knowledge of the forest and maintenance of forest integrity.

From SFS publication: "SFS manages tropical hardwood forests in Paraguay and Bolivia where we operate integrated, certified wood products businesses. We control all phases of the operations from producing and regrowing high value hardwoods to manufacturing and sales. Our year 2000 product line will include lumber, dimension products, and rotary peeled veneer."

SFS was initially skillful at investor relations but performed forestry management less well. Corruption problems plagued the venture. In good faith, SFS bought Yagurete in Paraguay as a virgin forest. Later it was discovered that some of the forest had been cut and valuable species removed.

US importers reported dissatisfaction in the quality of SFS exports. The funds terminated after 2000.

The Terra Capital Fund

Type: Equity venture capital or quasi-equity investments

Background: Launched in October 1998 with an initial capital of US$ 15 Million, Terra Capital was launched by a group of environmental and financial institutions such as Banco AXIAL, S.A. A2R (included GMO RR), Environmental Enterprises (EEAF), IFC, plus $5mm operating grant from Global Environment Facility to help reduce the incremental operating costs related to the biodiversity screening and monitoring mechanisms adopted by the Fund. Terra Capital's commercial objective was to realize long-term capital appreciation through equity or quasi-equity investments in biodiversity-benefiting enterprises and thereby demonstrate to entrepreneurs and investors that such enterprises present viable opportunities. Investment sectors included: Forestry, Agriculture (organic), Aquaculture, Tourism, and Non-Timber Forest Products (NTFPs). A2R promised investors venture capital type returns of between 20 percent and 35 percent.

The fund closed in 2002 due to poorly performing investments and escalating management costs. The objective was to invest in certified, private enterprises that generated conservation benefits through sustainable use of biodiversity in Latin American countries.

In March 2003, the investors decided not to renew the management agreement with the fund manager and to stop making new investments after the mid-term review found that most of the existing investments were not performing well. The reasons for this poor performance were: deteriorating macro-economic situation in Latin America resulting in high interest rates, which stifled alternative financing; unsatisfactory financial management by the fund manager; and, the investee companies were in financial trouble from the outset, so biodiversity concerns were largely ignored. ["Projects Cancelled," GEF Reporting Period 1993-2004].

Some factors contributing to distress included unrealistic return targets on venture capital returns. Portfolio company selection may have been less rigorous on business criteria with more attention on the environmental and innovative aspects. Troubled companies not only under performed but required constant attention. Human resources on fund management team were stretched. Investment bankers report that the budget for fund management was inadequate to cover unexpected technical assistance expenses.

UBS Global (ex-U.S.) Timber Investors 6

Type: Closed-in, pooled investment fund in South America and the Pacific Basin

Background: UBS Global (ex-U.S.) Timber Investors 6 is a $110 million closed-end pooled fund focused on investments in South America, Australia and New Zealand, with an emphasis on fast-growing softwood and hardwood plantations.

UBS currently manages in excess of $1.3 billion in assets and commitments on behalf of more than 70 clients. Since 1985, the group has invested in more than 1.1 million acres of timberland located in the southern, northwestern and northeastern regions of the United States, and in Argentina, Australia, Chile, New Zealand and Uruguay. The fund has a minimum portfolio return of 10 percent, net of all fees and expenses.

UBS has three investments, one each in Brazil, Argentina and Chile, in the works that, if closed as expected,

will use about two-thirds of the fund's capital. Its return (IRR) since 1987 is 10.7%.[36] From the bankrupt Fletcher Challenge Fund, UBS Purchased 13 year cutting rights over a combined 8,940 hectares of mature age class trees for USD65 million, to entities managed by the global timberlands investment manager UBS Timber Investors (UBS).

UBS Timber Investors was appointed in 2003 as the new manager of Xylem Fund I. Xylem Fund I holds 43.33% of Evergreen (New Zealand) ordinary shares.

From June 2004 performance reports of USB Timberland Funds that purchased Global Timber 6 for its portfolio, the returns are considered satisfactory: increased in value of 32% (about 9.7% annually) over 3 years.[37] Considering that a large part of the expected return to investors is the exit, these returns at least show that the fund is thriving.

Verde Ventures

Type: Conservation investment fund, debt and equity

Background: Verde Ventures is a $6 million investment fund managed by Conservation International (CI) and including funding from the IFC and OPIC. Verde Ventures is the new name for the expanded Conservation Enterprise Fund (CEF[38]). Verde Ventures has absorbed all of the CEF's portfolio projects and loan obligations. Verde Ventures has invested US$2,084,500 in 9 projects concentrating on biodiversity. $2.5 million of Verde Ventures capital will be dedicated to coffee investments. The fund provides debt and equity financing of $100,000-$500,000 to select businesses in CI's priority areas. Currently, the fund does not provide grants. The fund seeks to receive an overall 12% rate of return on its portfolio.

Verde Ventures investments have supported projects such as protection of biodiversity habitat, support in the protection of 95 IUCN Red Listed Species found in project sites and support to businesses which employ 7,000 people working in project sites in 6 countries.

Xylem

Type: TIMOS Private fund. Co-mingled Investment manager, private equity in plantation-based forest companies.

Background: Forestland Group Xylem Investments Incorporated as an international TIMOS that made private equity investments in international, publicly traded plantation-based forest companies. Xylem was the first company to be successful in attracting United States institutional forest land investors to forestry

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[36] Peter Mertz, "Investing in Sustainable Forestry," Conference Presentation," International workshop of experts on financing sustainable forest management Oslo, Norway, 22 – 25 January 2001.
[37] June 2004 quarterly report of UBS Alternative Portfolio shows their $5 million investment in UBS Global (ex US) Timber Investors 6 constituted 6.7% of the entire portfolio, and showed an absolute increase in value of 32 over 2 years.
[38] The CEF was created in late 1998 with a $1 million investment from the joint International Finance Corporation's/Global Environmental Facility, Small Medium Enterprise Program.

investment in emerging markets. Xylem managed approximately US$235 million in forest assets, comprising six timber equity investments across ten countries and 1.4 million ha of softwood and hardwood plantations that are managed on a sustained yield forestry plan. Xylem Fund II LP was intended to earn superior returns by investing in NTFPs.

Xylem invested widely, not just within the environmentally approved SFM universe. Xylem's operations were suspended in 2002 and UBS Timber Investors was appointed as the new manager of Xylem Fund I. The source of the problem was Xylem's sizable investment in bankrupt Fletcher Challenge fund in New Zealand. Fletcher was brought down by a combination of factors, falling Douglas Fir log prices, major market Korea in throws of Asian debt crisis and the rising New Zealand dollar. Over-borrowed, it was unable to restructure the $1.2 billion debt owed to 12 banks or compensate investors and had to liquidate (see USB Timber Investors, a buyer).

Other portfolio investments lost money. Xylem Fund's £22 million investment in 80% of Britannic, timber distribution and processing operations ran into problems.

Xylem apparently lost millions to investors. The investment selection process may have been flawed or overly optimistic. Xylem was caught by the Asia debt crisis, currency risk, and a collapse of a major market. The fall of Xylem also shows the danger of concentrating on a few investments.

ANNEX 3: NEW INTERNATIONAL ACCOUNTING STANDARDS FOR BIOLOGICAL ASSETS: IAS 41

The International Accounting Standards Board in 2003 ruled that forestry businesses and the ensuing forestry products are biological assets. This newly issued international accounting standard would apply to all international accounting regimes that conform to IAS. This standard will affect forestry companies which have their financial statements formally audited. The costs to companies will be third party valuations of stumpage and product inventories. The benefits will be to make forestry operations comparable long term fixed income securities. Although many companies worldwide began adopting the standards even before they officially came into effect, it is too early to predict how it will affect the investment markets and company valuations.

The International Accounting Standard IAS 41—"Agriculture," is the first international accounting standard that specifically covers the biological resource sector. The objective of IAS 41 is to establish standards of accounting for agricultural activity – the management of the biological transformation of biological assets (living plants and animals) into agricultural produce (harvested products of the enterprise's biological assets). Standard 41 was issued in 2003 and became operative for annual financial statements covering periods beginning on or after 1 January 2003. The accounting standard, which is up to countries to adopt, applies "fair value" methods to "consumable biological assets," such as vineyards that bear fruit but wait many years of long aging before the product of the harvest is bottled and sold as wine.

The "fair value" calculation specified in IAS 41 is the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction. (IAS 41: Agriculture paragraph 8). Biological assets may be sold, mature into agricultural produce or generate additional biological assets. The problem arises in estimating "fair value." Forests, unlike common biological commodities like coffee can rarely be priced in real time in commodity markets. Forests are essentially illiquid assets with fragmented markets. Consequently, determining a "fair value" has become a source of controversy. Some companies complain that their auditors demand a separate fair value appraisal by a qualified and expensive third party.

Here is how the financial statement presentation works in IAS 41. The balance sheet value of forestry assets changes according to changes in "fair value." Changes in fair value are made up of growth, harvesting and price fluctuations as well as asset destruction due to fire, weather and pestilence. The change in asset value shows up in the annual income statement as non-cash gains or losses. To balance the accounting equation[39] the gains (losses) are credited (debited) to non-distributable equity reserves.

At first application the IAS 41 can affect forestry asset values to the extent that historical costs are different from "fair value." The rule will impact forest plantations where expenses and capital outlays begin at planting and continue until the time until the company harvests, processes and sells its finished product at accounting periods far into the future. IAS 41 permits forestry operations to record and present the increases (decreases) in fair value annually. Plantations of course grow and over time become increasingly valuable because of size

[39] Assets = Liabilities + Owners Equity.

and quality of wood. Long-term, income-producing biological assets are expected to have economic lives that stretch beyond one accounting period.

In the example of Swedish integrated paper company, Stora Enso, the effect on company accounts between 2002 and 2003 was significant. The company's biological assets in the form of standing trees, which are fair market valued, doubled from a previous book value of EUR 705.9 million to a fair value of EUR 1 561.3 million. The revaluation reserve amounted to EUR 855.8 million, which resulted in an increase in equity of EUR 615.4 million after the deduction of deferred taxes.

In tropical countries, audited forestry companies are applying IAS 41. It is worth noting that Precious Woods, a Swiss tropical forest product company with operations in Brazil and Central America, began reporting the IAS 41 "fair value" of its various forestry assets in early 2000. It took into account differences in age range, species and state of growth for its various plantations. Precious Woods wrote up its forestry assets to "fair value" and booked this change directly to reserves (equity).

Precious Woods, 2000 annual report ($US)			
Biological asseets	IAS end of 1999	Book value 1999	Difference*
Teak plantations	8,203,200		
Pochote plantations	4,498,965		
Various native species	837,211		
Total plantations, without land	13,539,376	10,607,304	2,932,072
Land at acquisition value	5,275,723	5,275,723	0
Total	18,815,099	15,883,027	2,932,072
*The difference between the book value and the value according to IAS 41 reflects the activities of earlier years and is entered in the balance sheet as shareholders' equity.			

This table shows how Precious Woods accounted for costs in new properties in State of Amazonas in 2001.

($US)	2001	2000
Forest planning, research and development costs	2 529 825	1 726 993
Production project development costs	1 811 928	1 811 928
Roads in forest	2 083 870	1 332 055
Goodwill	215314	–
Subtotal	6 640 937	4 870 976
Accumulated amortization	–1 526 823	–1 200 498
Net	5 114 114	3 670 478
Land	8 887 062	3 841 065
Total	14 001 176	7 511 543

As per IAS 41 and IAS 8, Precious Woods accounts for this non-cash, biological growth as a revenue component of earnings. These "income" gains represent a better fair value of its timber assets accounting to current market appraisal. IAS 41 does not impact the measurement of cash flow available service debt, distribute to shareholders, reinvest in the company, or the auditors opinion.

The audit statement does note that the valuation depends on future company performance, "Without qualifying our opinion we draw to your attention the fact that the consolidated financial statements at December 31, 2001 and 2000 include biological assets and other project costs (excluding land) amounting to USD 24,924,755 and USD 20,028,229 respectively. The ultimate recovery of these costs is dependent upon the Company's ability to complete the forest projects and to generate future earnings."