

Timberland in Institutional Investment Portfolios: Can Significant Investment Reach Emerging Markets?



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Report of a Survey of Institutional Investment Decision-makers

for

The Food & Agriculture Organization of the United Nations, Tropenbos International, and
Natural Resources Canada - Canadian Forest Service

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The Forest Economics, Policy and Products Division works in the broad areas of strengthening national institutional capacities, including research, education and extension; forest policies and governance; support to national forest programmes; forests, poverty alleviation and food security; participatory forestry and sustainable livelihoods.

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Foreword

In recent years the question of how to broaden and diversify the financial basis for sustainable forest management (SFM) has received increasing attention in policy, research, and development fora. The growing recognition of forests' contribution to economic growth, social development and environmental health is motivating public and private sectors alike to increase their investments in SFM.

Private investors, pension funds and other institutional investors (banks, insurance companies, endowment funds, timber funds) are already investing substantial financial resources in forestry and wood processing. Forestry assets fit well in their diversification strategy of the long term asset portfolio as they can help hedge against inflation and offer returns that do not correlate with fluctuations in the stock market. Consequently, these investors represent a potential and interesting additional source of forest finance to meet the United Nations Forum on Forests' fourth global objective on forests.

This survey, commissioned by FAO, the National Forest Programme Facility and Tropenbos International and supported by Natural Resources Canada - Canadian Forest Service, aims to improve our understanding of the current investment patterns in forestry and downstream wood processing by institutional investors and of the frameworks within which such investments are made. It tries to assess the realities, trends, perspectives, challenges and opportunities regarding the greater involvement of institutional investors in forestry, including REDD+ and biodiversity, in emerging markets.

While past investments have primarily focused on developed countries, this report shows that there is a growing interest by institutional investors to look at the potential of forests also in developing countries. It also identifies some specific problems or bottlenecks that appear to impede further interest and investments.

This report includes practical guidance on how to facilitate successful partnerships between institutional investors and sound forestry enterprises in order to increase investments in forestry in developing countries. We hope it will provide a useful contribution to the analytical work and international dialogues on forest related financing within UNFF, CBD, UNFCCC, UNCCD, UNEP (Finance Initiative), ITTO, World Bank Group, WTO and others.

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Table of Contents

FOREWORD	3
ACKNOWLEDGEMENTS	5
EXECUTIVE SUMMARY	9
1. INTRODUCTION	10
OBJECTIVES	10
SCOPE AND LIMITATIONS	11
STRUCTURE OF THE REPORT	12
2. INSTITUTIONAL INVESTORS AND TIMBERLAND: A BRIEF OVERVIEW	13
3. DEVELOPMENT OF FORESTLAND AS AN INSTITUTIONAL INVESTMENT	15
1981-1995	15
1996-2000	16
2001-2004	17
2005-2009	17
POST-2009	18
4. METHODOLOGY	20
RESPONSE RATE	20
5. RESULTS	21
6. DISCUSSION	25
7. RECOMMENDATIONS	26
FOR DEVELOPMENT AGENCIES	26
FOR PROJECT DEVELOPERS	27
FOR INVESTORS	28
FOR INVESTMENT MANAGERS	28
8. CONCLUSIONS	29
REFERENCES	31
ANNEX 1. KEY TERMS	33
ANNEX 2. RESPONSES	35
INVESTOR RESPONSES	35
INVESTMENT MANAGER RESPONSES	41

LIST OF FIGURES

<i>Figure 1:</i> Results of a KPMG survey (2011) to the question "In which countries do you have significant timberland interests outside North America?"	15
<i>Figure 2:</i> Historical performance of institutional timberland and equity investments in the USA, 1987*-2010.	16
<i>Figure 3:</i> Investment performance of timberland over rolling 10-year periods, compared to large-capitalization equities in the USA.	18
<i>Figure 4:</i> Industrial roundwood export price history for selected emerging markets	19
<i>Figure 5:</i> Indexed tropical timber prices, 1998-2011.	19
<i>Figure 6:</i> Proportion of survey participants by country	20
<i>Figure 7:</i> Contacts and participation by category (investor or investment manager)	21

LIST OF TABLES

Table 1: Institutional investment in various asset classes of 206 investors.	13
Table 2: Forest investment by selected investment managers and geographic regions	14

Executive Summary

A survey was carried out to improve our understanding of current investment patterns in forestry by investors and of the framework in which such investments are made. It also aimed to reveal barriers and opportunities to investments in forestry assets in developing countries; to identify key issues and pathways to enhance forestry investment in developing countries; and to guide the support work of Tropenbos International, FAO and others in this respect. The survey primarily covered investment decision-makers in North America and Europe. The survey was commissioned by FAO and Tropenbos International, with support from Natural Resources Canada - Canadian Forest Service.

The study focused on forestry for timber production as the investors' primary reason for investing. This focus was justified by preliminary discussion that took place before the survey itself that revealed that processing, manufacturing, water quality, biodiversity, carbon sequestration and other ecosystem services may well be emerging sources of potential value, but are still considered secondary outcomes.

This study is part of a broader effort to improve communication and mutual understanding between forestry and finance professionals and to identify additional sources of finance for desirable forestry initiatives. For the survey, 78 investors (institutional investors and high net worth families) and investment managers were contacted. We obtained 42 responses, which collectively represent about USD 36 billion of forestry investments¹. Highlights of the survey results include:

1. Diversification and inflation hedging were the primary reasons for investing in forestry
2. There is scope for attracting further interest by investors in forestry in the developing world
3. Investment policies and conditions at the country level are of paramount importance to attract foreign investment capital
4. Investors generally seek forest investments that can be certified as sustainably managed
5. Investors generally do not invest in forest-based businesses (processing and manufacturing)
6. Forest investment could be significantly enabled by filling information gaps relevant to investors
7. The outlook on forestry investments in emerging markets is positive, but with challenges and question marks

¹ Surveyed investment managers outside of Europe represented a collective US\$33 billion in forest value under management with a median amount under management of about US\$1 billion. Surveyed investment managers in Europe represented a collective US\$3 billion forest value under management with a median amount under management of about US\$100 million.

1. Introduction

Pension funds, endowments, foundations, insurance companies, and high net worth families are increasingly finding forests and forestry as attractive assets in which to invest. According to DANA (2011), the number of timberland owners/investors/managers participating in the institutional arena has grown to over 1,000. The value of forestry assets held by institutional investors has also increased significantly since the early 1980s, when the current episode of institutional forest investment began, to over US\$50 billion today. This growth can be attributed to a gradual transfer of ownership from the forest products industry to institutional investors, but also to higher asset value per unit area. The size of "investable" forest assets has also grown as land in more regions and countries has been deemed investment-worthy.

Such trends raise important questions for professionals, organizations and agencies with mandates that include promoting good forestry in developing countries. What is the current extent of such investments and what are their characteristics? What are the main motivations, concerns and requirements for these investors? Are there specific bottlenecks or problems that may impede further interest by investors in developing countries? Finally, for agencies like the Food and Agriculture Organization and Tropenbos International, an additional question is: How can such information link to our efforts to promote better forestry in developing countries in support of higher-quality livelihoods, food security, and better governance?

OBJECTIVES

Such questions provide the rationale for this study, which seeks to improve understanding of current investment patterns in forestry by investors in both developed and developing countries and of the frameworks in which such investments are made. This improved understanding may also, either directly or indirectly, reveal barriers, opportunities and development pathways to enhance and facilitate investments by institutional investors in sustainable forestry in developing countries relevant to the mission of FAO.

Investor (in the context of this study, institutional investor)

Specialized financial intermediaries that manage funds collectively on behalf of small investors toward a specific objective in terms of acceptable risk, return maximization, and maturity. Institutional investors are constituted mainly of pension funds, insurance companies, and mutual funds (Davies and Steil, 2001). Foundations, endowments and family offices are also very often grouped in and treated under this category. For the G-7 as a whole, the value of institutional claims has risen from the equivalent of 23% (in 1970) to 108% (in 1998) of GDP.

Davis, E. Philip, Benn Steil (2004): *Institutional Investors*. MIT Press, Cambridge

Specifically, the study aims to:

- Assess the state of forest investments, their breadth, main characteristics and expected trends;
- Assess institutions' main motivations, concerns and requirements;
- Identify problems that appear to impede further institutional interest in forest investing, including investments in developing countries, and examples of solutions;
- Identify issues and activities that members of the Collaborative Partnership on Forests could support to facilitate successful connections between institutional investors and sound forest investment opportunities that support sustainable forest management and provision of ecosystem services.

SCOPE AND LIMITATIONS

The focus of the study is forest investment managers and investors in North America and Europe who already invest in forestry or have investigated the asset class for investment. These two categories were chosen because their representatives are key decision-makers regarding the timing and structure of institutional forest investing. Similar surveys were used for managers and investors, with differences reflecting their different roles and expertise in the investment process.

Given the narrow universe of timberland investors and investment managers, selection of participants was based on their relationships with the authors. All participants were familiar with timberland in developed markets, and the authors believe that they were most likely to seek further opportunity in emerging markets as a result, subject to risk-adjusted return constraints. Because selection was non-random, results cannot be statistically extrapolated to the institutional investor universe as a whole.

Investment manager

A firm that controls an investment portfolio on behalf of a client. Investment managers make investment decisions on behalf of clients according to the parameters set by the client. Some investment managers have more autonomy than others, depending on the client's needs and desires. Unlike brokers, investment managers are not paid on commission, but generally by a percentage of the value of assets under management. This gives the investment manager an incentive to work for the client's profit, as the more money the manager accumulates, the more he/she/it makes.

Source: <http://financial-dictionary.thefreedictionary.com/>.

Although respondents were free to cite interest in timber processing, the survey focused on forest management and timber production as the primary reason for investment. Likewise, while ecosystem services may be emerging sources of potential value, they are considered by current investors to be secondary outcomes. Investors were likewise open to express interest in ecosystem services.

STRUCTURE OF THE REPORT

The report is structured in seven sections. The next two sections provide an overview of current timberland investments as well as a historical review of timberland as it has developed into an asset for institutional investment. These two sections are based on available literature in part developed by the authors.

The following three sections summarize the methodology employed for the survey, results obtained, and brief discussion and interpretation of the results based on the authors' own experience. Survey responses are presented in more detail in Annex 2. The final two sections provide concluding remarks as well as suggestions for follow-up by development agencies, project developers, investors and investment managers.

2. Institutional Investors and Timberland: A Brief Overview

The value of the global investable universe of timberland has been variously estimated at USD 300 billion (O’Conner, 2010) to USD 480 billion (International Woodland Company, 2009) distributed over 165 million hectares of managed or manageable timberland, nearly 50% (by area, a higher proportion by value) in North America.

Since the 1980s, when the current trend of institutional forest investment began, the investable universe has grown through 1) increases in investable land area as more regions and countries have been deemed investment-worthy, and 2) in increases in the market value per unit area of forest. Market value increase, can, in turn, be attributed to higher price of timber, lower interest rates, lower risk premium, higher forest productivity, and other variables.

Approximately USD 50 billion of forest value is currently held by institutional investors, most of it indirectly via entities established by investment managers specialized in forest investment. The balance of the investable universe is held by wealthy individuals and privately held forest products firms. Despite this significant increase in forest assets held by institutions, institutional penetration in the forest sector remains quite modest (Table 1). Timberland investment penetration is low among smaller institutions that lack sufficient research staff.

Table 1: Institutional investment in various asset classes of 206 investors

Asset Class	% of Institutions Invested	
	2009	2003
Cash	99	96
Public Equity	95	91
Fixed Income	95	91
Private Equity	78	58
Commercial Real Estate	57	50
Hedge Funds	48	21
Energy	22	17
Timber	8	2

(Source: Houser and Tackett 2010)

Investors seek forests for their competitive risk-adjusted rate of return; lack of correlation to performance of major asset classes such as equity, fixed income and commercial real estate; and tendency to hedge inflation. Although most investments are in North America, there are also significant holdings in Australasia and South America, and increasingly in sub-Saharan Africa, and Southeast Asia (Altwegg and Meier 2008) (Table 2).

Table 2: Forest investment by selected investment managers and geographic regions

Investment Manager	USA	Canada	Latin America	Oceania	Africa South of Sahara	Western Europe	Eastern Europe, Russia	Asia-Pacific
Hancock Timber Resource Group	+	+	+	+				
International Woodland Company	+	+	+	+	+	+	+	+
Global Forest Partners			+	+				
GMO Renewable Resources	+		+	+				
Brookfield Asset Management	+	+	+					
RMK Timberland Group	+		+					
Forest Investment Associates	+							
Campbell Group	+							
Four Winds Capital Management	+		+	+	+		+	+
Cogent Partners	+		+	+				
Catella Real Estate	+		+			+		
Cambium Global Timberland Limited	+		+	+				+
International Woodland Company	+	+	+	+	+	+	+	+

Source: Modified Glauner (2011) cit. Chung Hong Fu (2010)

Despite this growing interest (Figure 1), much potential for sourcing forestry investments, particularly in emerging markets, is likely unrealized due to a number of barriers, including size and scale of the forest business, differences between real and perceived risks associated with forest ownership, inadequate experience and capacity of the forest sector in developing business plans that meet lenders' requirements to extend credit, the defined established-market scope of conventional forest investment programs, risk mitigation systems, and more.

In large (>USD 1 billion) investment portfolios, forests usually represent only ~1% of the total portfolio (Glauner 2011). However, given that assets under management of the largest pension funds exceeded USD 11 trillion in 2009, even minor changes in investment strategy in favor of forestry investments can translate into billions of dollars of incremental capital per year. Moreover, the number of investment managers investing in forests is growing, particularly in Europe.

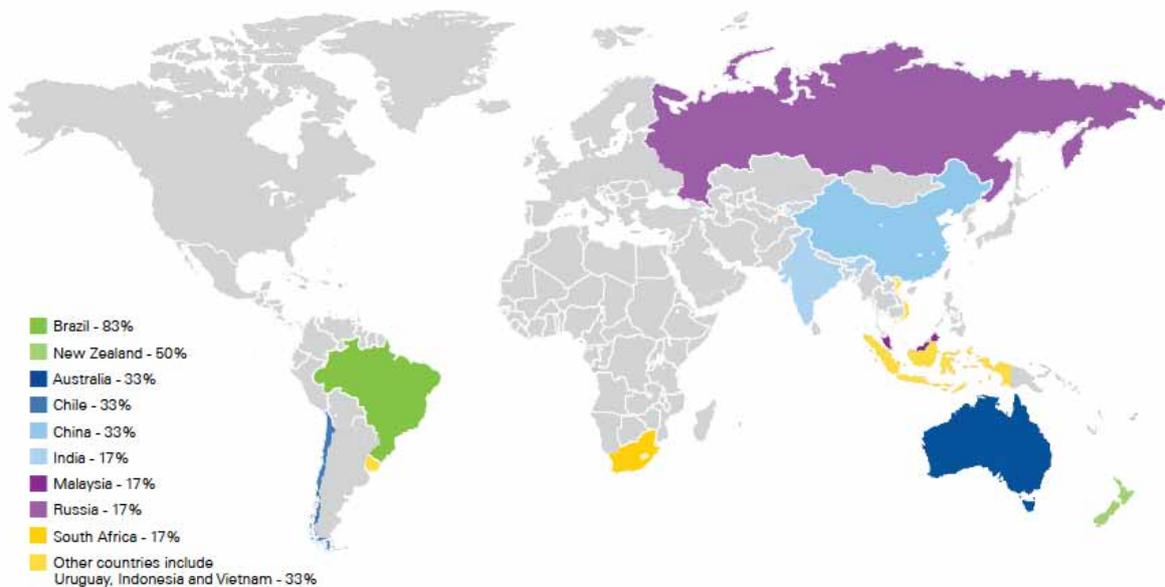


Figure 1: Results of a KPMG survey (2011) to the question "In which countries do you have significant timberland interests outside North America?"

3. Development of Forestland as an Institutional Investment

Forests as held by forest products companies or individuals have historically been viewed as strategic assets, i.e. held in support of core manufacturing business or other strategic activities. As investment assets of institutions, they are relatively new. Forest ownership as an investment began in the USA in the 1980s, facilitated by passage of the Employee Retirement Income Security Act of 1974 (ERISA), which called for corporate pension plans to diversify their investments to minimize the risk of large losses. Beyond fixed income and equities, they extended investment to real estate to diversify. This new interest in diversification was encouraged by managers with specialized expertise in forest investment, including life insurers as lenders and banks as trustees. The forces of diversification and requisite expertise merged in the form of managers who raised capital and acquired timberland on behalf of institutional investors. Government pension plans similarly sought to diversify, and began investing by the late 1980s. Other tax-exempt institutions, such as endowments and foundations, were investing by the early 1990s, followed by taxable corporations and family offices by 2000.

1981-1995

During its initial phase, forest products demand was growing, buoyed by strong export demand from Japan. Standing timber prices were increasing. Competition to buy timberland was low, and values other than timber value were not considered. Expected real (net of

inflation) long-term rates of return were 6-10%, depending on region and perceived risk. Timberland increased in value, in part due to endangered species, whose protection removed USA National Forests as a source of supply. Timber prices spiked and annualized rate of return from 1987 to 1992 averaged 26.8%, as measured by the NCREIF² Timberland Index (Figure 2). For institutional investors seeking high risk-adjusted return, portfolio diversification, and a hedge against inflation, these were attractive assets and interest began to grow (Rinehart 2010b).

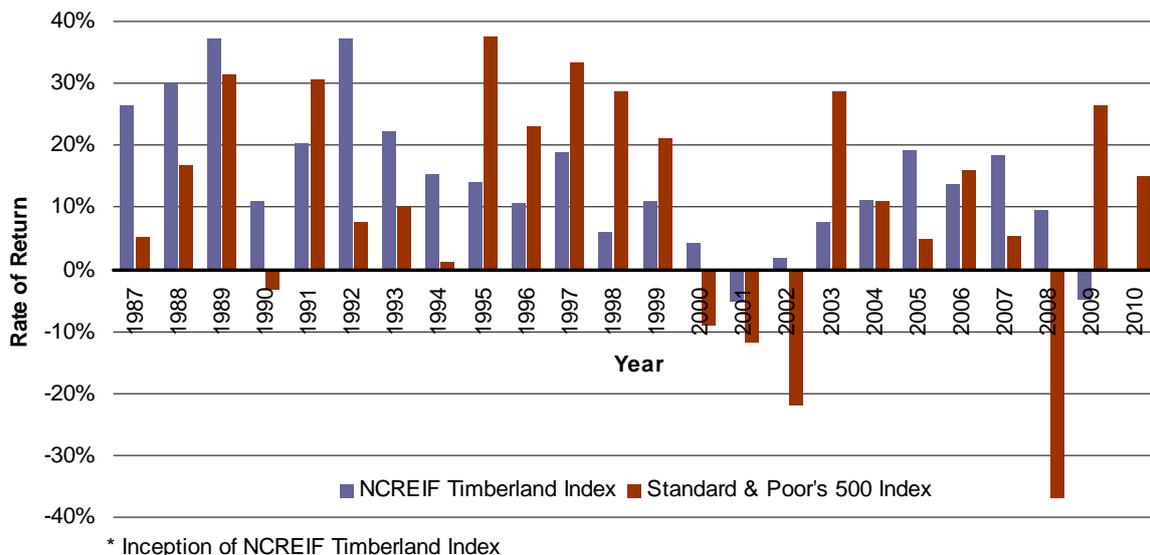


Figure 2: Historical performance of institutional timberland and equity investments in the USA, 1987*-2010.

Non-USA timber investments began in New Zealand in the early 1990s, as several managers, sensing increased competition and higher USA prices, turned to new markets with higher prospective return, and higher forest growth rates. Soon, investments in Canada and Chile followed, and by decade's end, in Australia. One of the largest European forest investment managers was founded in 1991. European investors themselves would not enter the market until the 2000s.

1996-2000

By the latter 1990s, supply of timber was ample, as adjustment to the western USA contraction normalized and enhanced productivity through technology and maturing plantations was realized. Increased timberland values began to turn some forest owners to sellers. At the same time, forest products demand began to diminish, due largely to the retrenching Japanese economy, exacerbated by the broader but short-lived Asian currency crisis.

Meanwhile, as awareness of its investment attributes spread, more investors were drawn to forestland, putting upward pressure on prices. Timberland supply was largely met by the

² National Council of Real Estate Investment Fiduciaries

USA forest products industry, which was in a divesting mode encouraged by financial analysts seeking increased shareholder value through the sale of assets undervalued in a firm's share price. That per-unit-area values continued upward in the face of increased supply may attest to the magnitude of capital available from institutional investors, forest-specific attributes, and other factors. From 1996 to 2000, the forest products industry downsized their holdings by USD 2.5 billion, mostly sold to investors through investment managers. Some forest economists feared that the market was becoming overheated. In 1998, rates of return for the NCREIF Timberland Index began a multi-year period of below-average performance, including its first negative return (-5.2%) in 2001. Non-U.S. timberland supply continued to grow as Australian states began to privatize their pine and eucalyptus plantations.

2001-2004

In the early 2000s, just as pressure to "cool down" began, the technology bubble burst, global stock prices fell, and institutions continued to allocate capital to alternatives such as timberland, accelerating the transfer of assets from industry to investors. Projected returns declined to 5-6% in real terms, pressuring managers to increase them through post-acquisition management. Valuations began to assume re-sale of land, non-timber values and focus shifted to minimizing costs. Global attention on forest investment turned to South America, chiefly Brazil, and the first European managed forest funds emerged. By the end of 2004, investment performance turned upward, especially for existing owners on the basis of valuations driven by new high-priced transactions, beginning a four-year string of double-digit rates of return.

2005-2009

During these years, USA forest industry sold another USD 18.7 billion of timberland, representing 6.3 million hectares, 70% of which was acquired by investment managers. This essentially completed a marked exit of many US forest products firms from owning timberland, while the few remaining with publicly traded shares elected to become real estate investment trusts (REITs).

From 1983 to 2009, 17.6 million hectares valued at USD 39.7 billion changed ownership type. Publicly-traded USA forest products companies sold 15.3 million hectares valued at USD 33.1 billion, while investment managers and REITs gained 11 million hectares valued at USD 30.4 billion.

Over this period, the investment community also had available a lengthening data series of rates of return from forest investments. These data indicate that over a long-term investment horizon of 10 years or more, perhaps the minimum period that forest investors should adopt, timberland has generated an annualized return of nearly 7% or more, with less volatility in performance than benchmark indices of publicly traded stocks (Figure 3).

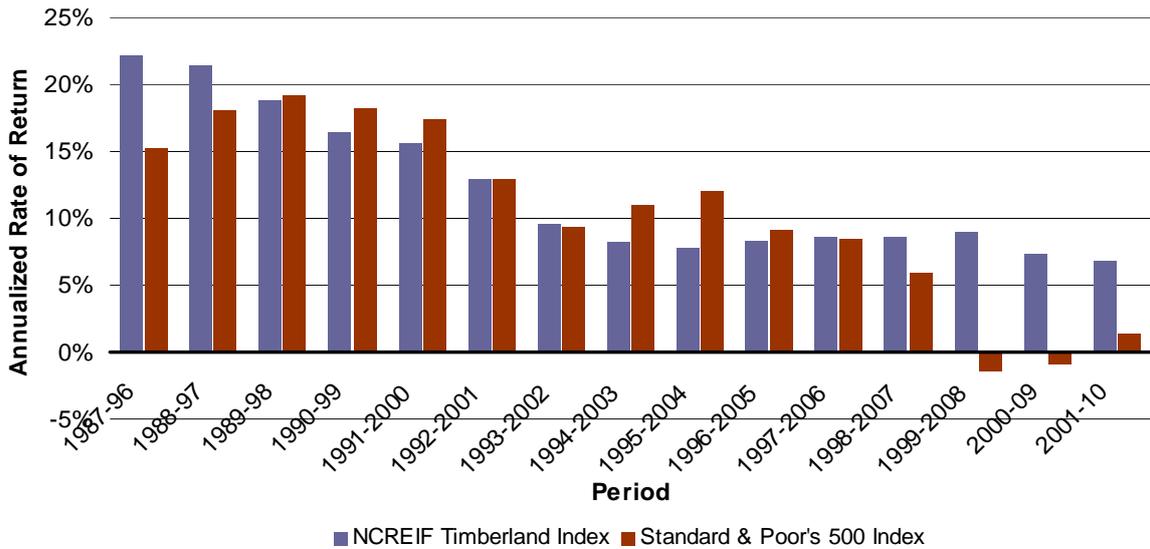


Figure 3: Investment performance of timberland over rolling 10-year periods, compared to large-capitalization equities in the USA.

POST-2009

With the publically-traded forest products industry out of the business as a primary seller, transactions have been few and primarily reflect trading among investment managers. In addition, on the heels of the 2008 financial crisis and extended USA housing slump, apparent timberland rates of return have averaged less than 0.5%. Declining values have led to low transaction volumes and a broad "bid/ask spread," i.e. a gap between what sellers require and what buyers are willing to pay.

Nonetheless, while US investors have retreated, European investors, with differing investment criteria, have entered the market in earnest and developing economies have increased as a source of forest products demand and timberland supply. New investment has been facilitated by new information, and several less-developed countries have continuous timber price histories for commercial products (Figure 4). In particular, emerging wood markets in tropical areas show upward-trending prices, as summarized by Zimmermann and Glauner (2010, updated in 2011). Indexed prices show an annualized price increase of 3.9%, although with significant volatility (Figure 5).

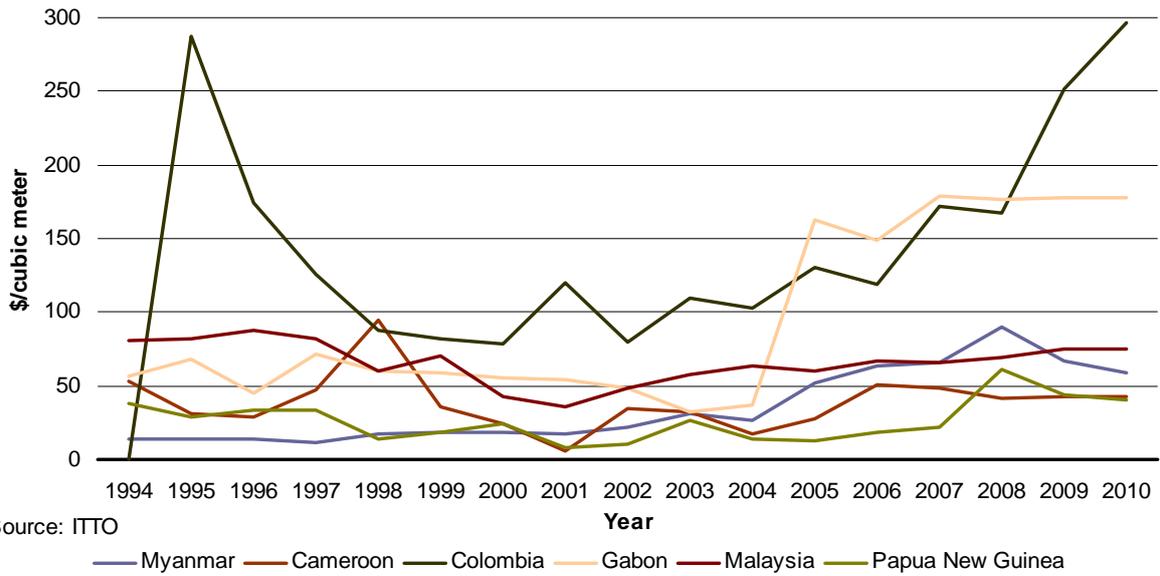
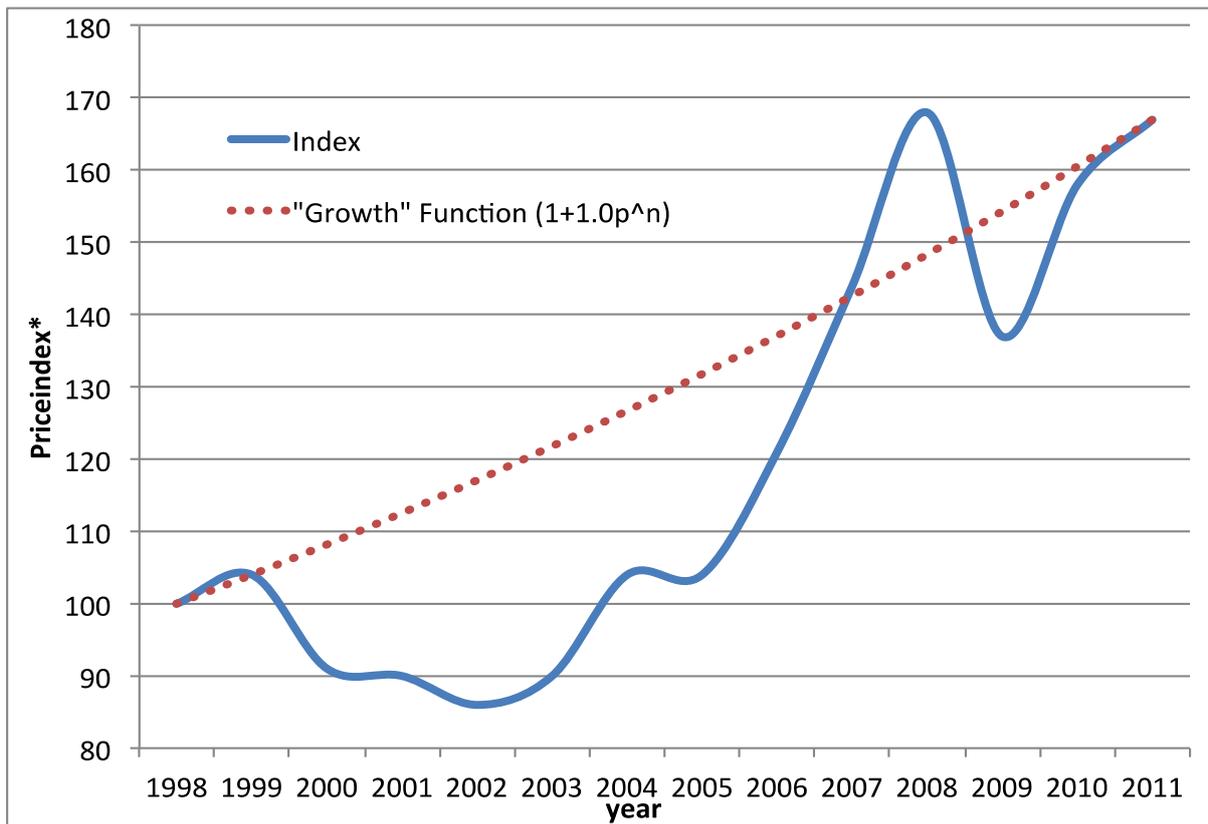


Figure 4: Industrial roundwood export price history for selected emerging markets



*1998 = 100

Figure 5: Indexed tropical timber prices, 1998-2011.

Source: WaKa - Forest Investment Services AG based on data by ITTO (1998 – 2011)

4. Methodology

A survey was conducted of institutional forest investment decision-makers, primarily based in Europe and North America (Figure 6). Interviews were conducted by phone or in person, and an effort was made to respect interviewees' time by limiting conversations to one hour. Participants were promised, and clearly sought, confidentiality and non-attribution.

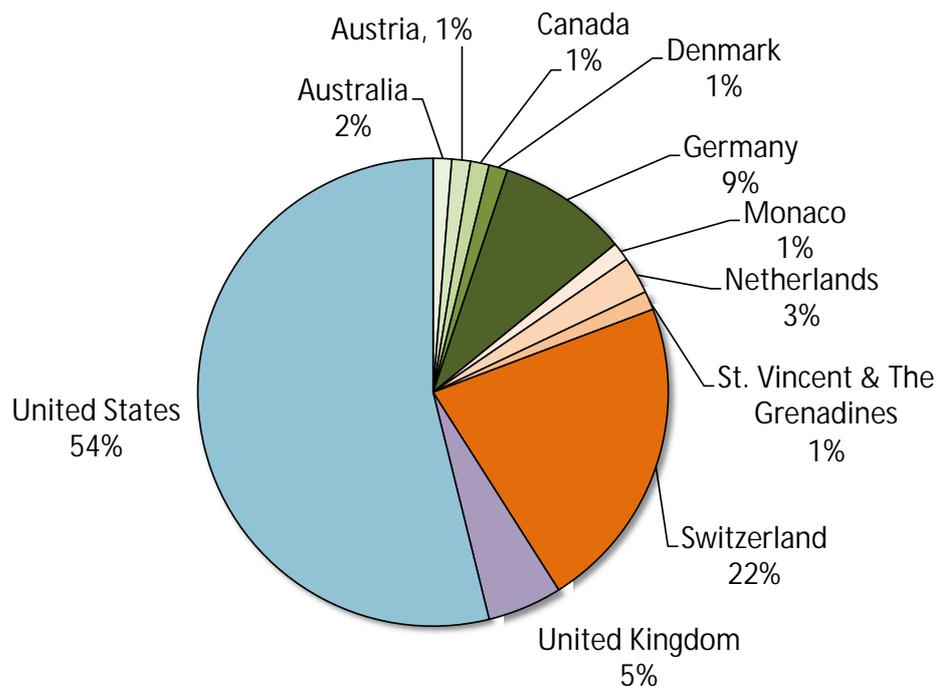


Figure 6: Proportion of survey participants by country

In total, 78 institutions were contacted, based on the professional relationships of the authors among investment managers and investors. Interviewees were not required to reply to all questions.

The survey distinguished between investors, i.e. those actually investing their institution's funds, and investment managers, i.e. those managing these funds. Examples of each are:

Investors	Pension funds, endowments, insurance companies, family offices
Investment Managers	Affiliates of large investment managers, independent firms, large investment managers using forest asset sub-advisors

RESPONSE RATE

Of the 78 individuals/organizations contacted, 42 (54%) participated in the survey (Figure 7). Within categories, the response rate was 56% for investment managers and 44% for investors. Reasons mentioned by respondents for non-participation included lack of time, lack of perceived expertise, and internal policy.

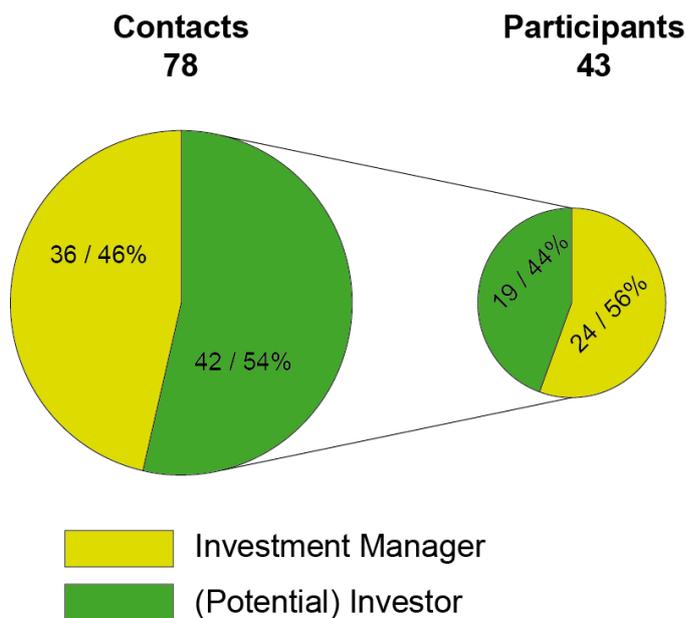


Figure 7: Contacts and participation by category (investor or investment manager)

5. Results

The following summarizes the responses obtained. Detailed answers, organized by question and respondent type, can be found in Annex 2.

1. **There is scope for attracting further interest by investors in forestry in the developing world.**

The number of investors interested in forestry is growing (DANA 2010). The survey revealed that several are in the process of developing forest portfolios, particularly Europeans. North American and European investors differed in their responses. Few North American investors anticipated major new investments in forestry, while European investors had plans for new or additional forest investments.

2. **Scope for increasing forestry investments may come through new investors.**

While several investors cited potential forest allocations of 5-10% of their total portfolio, actual allocations rarely exceeded 2%. While there is potential for expansion of existing portfolios, the larger potential lies with new investors.

3. **Diversification and inflation hedge were the primary reasons for investing in forestry mentioned by respondents.**

Respondents consistently cited research, indicating low to zero correlation between timberland and mainstream assets, providing the opportunity for higher risk-adjusted

returns to portfolios containing timberland. Respondents also frequently cited positive correlation between inflation and timberland investment return as contributing to their decision to invest in forests.

4. Sound policies and investment conditions at the country level are highly important to investors.

This result is consistent with other studies. In order of importance, the most important country factors cited were:

- Political stability,
- Established private property rights,
- Well-functioning legal and banking systems,
- Strong domestic consumption of forest products,
- A stable tax system,
- Acceptable currency policy/risk, and
- Proven management.

As a "rule of thumb," 10 years of relative stability was mentioned as a pre-condition for investing in a developing country. Investment managers also mentioned the critical importance of active, competitive markets for the primary forest products they grow. The most prominent "no go" condition noted by managers was the prevalence of corrupt business practices.

5. Investors generally seek forest investments that can be certified as sustainably managed.

Survey respondents seldom address sustainability explicitly in documented investment policy, but they do cite it as an important requirement of their managers. The majority of respondents expressed a requirement for acceptable certification, although they expressed no preference for a specific certification standard.

6. Corporate Social Responsibility, institutional image and concerns over the legality and good governance of forest operations affect investment decisions.

CSR concerns were mentioned more frequently by Europeans than by North American investors, a pattern not considered unique to this survey. Here, approximately half of respondents, presumably those involved or most familiar with FSC certification of their forest management, replied that consideration of Corporate Social Responsibility was addressed as part of gaining their sustainability certificate. Several firms noted that they contribute to local community entities or conservation organizations as part of being a responsible corporate citizen. Most European managers have documented internal social and environmental criteria in place, in some cases extending to sustainability. Level of detail varies greatly. Some managers are signatory to the UN initiatives, such as the Principles for Responsible Investment.

7. Investors generally do not invest in forest-based businesses (processing and manufacturing).

Investors cite lack of expertise in managing operating and labor risks, and seeking the investment attributes of forests themselves, rather than value-added returns from processing.

8. Planted forests are preferred.

The survey revealed that none of the North American investors have allocated investments by forest type, although some were concerned for forest type diversification and intended to monitor forest type allocation and performance going forward. In contrast, nearly all European investors considered natural tropical forests uninvestable. Management of natural tropical forests was seen negatively as "forest clearing," "illegal logging," and "conversion," although they would consider investing in natural forests in temperate regions. In general, planted forests are more likely to be institutional quality, especially in regard to history of professional management and requisite forest information availability (inventory, maps, silvicultural treatment, etc.). Plantations are seen as more manageable, more predictable, and thus a better investment.

9. Investors' satisfaction with the performance of their forestry investments has been mixed.

Rate of satisfaction has been very much related to investment timing. Investments made between the two most recent recessions of 2001 and 2007-09 have not yielded anticipated return. Respondents investing in emerging markets were more satisfied with investment performance.

10. Intermediaries with specific forestry investment and country knowledge are of particular importance in emerging markets.

Specific means of gaining expertise included

- established relationships with local partners,
- internal in-market staff,
- local industry consultants with known reputation,
- professional networks

European investment managers preferred personal relationships with consultants, friends, and professional networks. Some large institutions hire established forest investment consultants to develop and analyze investment opportunities.

11. Knowledge of forest investing among investors remains low.

Development agencies, like FAO, and research organizations can play a key role in informing the investment community. Specific recommendations made by respondents include:

- Advocate financial instruments that serve to reduce risk for investors

- Support research and publication of market and technical information in emerging markets to enable investment decisions. Specific needs for up-to-date information include regular reports on timberland and log prices, timber products supply/demand, information on forest management costs, and reporting on timberland transactions
- Report successful silvicultural regimes
- Discuss timber attributes and product uses in emerging regions
- Particularly among European investors, a need for reliable site-specific growth rate information and "positive examples" at the country level
- Support open and stable markets
- Improve property rights and land tenure systems
- Support log tracking systems and other impediments to illegal logging
- Improve ability of governments in emerging markets to respect and attract capital
- Enforce laws and limit corruption
- Promote consistent legal and tax environments
- Support and extend surveys, such as this, that encourage communication among governments, managers, and investors

12. **The outlook on forestry investments in emerging markets is positive, but challenging.**

When asked about their outlook on forestry investments, respondents indicated:

- An increasing orientation toward the southern hemisphere, and Asia, especially China and India, as additional drivers of demand growth.
- Greater awareness in general and promotion of emerging-market investments. There is a sense that, over time, wood usage follows wealth development and that processing will move closer to end-use markets.
- A sense that emerging markets have greater potential for forests for energy, particularly in areas like Eastern Europe and Chile.
- Expected returns in developed markets are lower, so some capital sources are seeking higher return in emerging markets. Increasing plantation assets in emerging markets are also a positive trend.
- Investor and management interest in emerging-market forest investments is greatest in Europe.
- Willingness to invest at smaller scale applies to emerging markets.
- Nonetheless, there are doubts that emerging markets will show good results and concerns that risk will not be compensated. Investment demand continues due to a sense that developed markets cannot absorb the demand for "real assets." There is a sense that forest investments in emerging markets are succeeding socially even where they have not performed well financially. Development of emerging-market forest investment will be gradual over decades, as time reveals sustainable success.
- Advances in forest technology are key to the success of forest investments.

6. Discussion

The survey revealed that the attractiveness of forest investments to institutional investors is increasingly acknowledged. Those who have already made allocations are comfortable with forests' risk, return potential and liquidity. Investors also prefer investing in standing timber and underlying land rather than primary processing, which may entail higher return expectations, but also higher risk. In this way, investors are following the pattern of traditional forest owners worldwide. The separation of growing timber from processing it is the current trend in developed regions. Managers prefer to focus upstream, where their expertise lies, where the attributes of the investment are suited to institutional investment objectives, and where the perceived complexities of dealing with plant operations, equipment and labor can be minimized. This separation of forests from processing works well where the processing industry is established and competitive. It may not work well where resource ownership protects investment in large-scale processing facilities, processing capacity is developing out of synchrony with the supply of timber, resource tenure and access remain unclear, or where forest sector governance is questionable.

Investments in forestry by institutional investment managers have existed for 30 years. Nonetheless, the market remains largely USA-based because the majority of large, professionally managed, private forests are located there. This is changing, however, as managers and investors seek further investments and as global forest products demand shifts toward Asia and the southern hemisphere. With the entry of new participants in this market, i.e. investors from Australasia, Europe, Asia, and South America; and assets from Australasia, Europe, Asia, Latin America, and even Africa, new opportunities are emerging.

A major concern of interviewees in this study was confidentiality regarding their answers and participation. While this confidentiality was necessary, in a broad sense, confidentiality is also a concern. Confidentiality can hamper market development described by Savenije and van Dijk (2010) as "bringing together the financial and forest sector" by limiting communication. For example, well-trained and motivated forest specialists in numerous countries and the kind of investment decision-makers surveyed here may mutually benefit from an efficient means of introducing them to each other.

Given the nature of many projects and university curricula in developed countries, training is required in preparing business cases that satisfy the financing criteria of major sources of equity and debt capital. An increasing number of consulting companies and small businesses provide workshops and training opportunities. However, there is as yet no accepted standard for feasible business models, as was the case in the early stages of forest certification. Where investor protection is of increasing importance, standards for investments in forestry are required. National and international development agencies could play a major role in developing such standards.

This survey also highlighted that investors and managers are aware of the potential of emerging-market forest investments, but few screen the market systematically for them, instead reacting to opportunities presented by sponsors of a prospective investment. Investment decision-makers perceive a variety of challenges associated with emerging-market forests that influence their pursuit of such opportunities. Sound country-level conditions for foreign investment in forests and land are of paramount importance to attract institutional capital.

Underlying the survey is the assumption that investors are more likely to seek further opportunity in emerging markets if they are already familiar with timberland in developed markets. The results confirmed the importance for new investors to familiarize themselves with forestry as an investment opportunity. Such familiarity is usually gained in developed countries.

7. Recommendations

FOR DEVELOPMENT AGENCIES

National and international banks and development agencies play a significant role in supporting sustainable forest management in less-developed parts of the world, and an even more important role to support the local people who depend on these forests. Many development agencies have management portfolios that combine forest establishment and conservation with other services forests provide, such as biodiversity, economic stabilization, climate change mitigation, etc. However, investors and/or managers rarely see these agencies as direct or indirect partners in forest investments. Little communication is apparent between business-oriented financial investors and development-oriented donors, lenders or insurers.

In the face of current global economic fragility and the uncertainty of northern-southern hemisphere development cooperation, donor and recipient countries may have considerable opportunity for sustainable forest management if development agencies can devise mechanisms that are compatible with financial investment. Development banks are active in target countries and may provide instruments that reduce risk sufficiently to encourage investment entry.

Additionally, development agencies and project developers play a major role in developing business plans that can facilitate institutional investment. The development of solid business cases with a strong assessment of their long-term economic viability is crucial to avoid project failure after institutional financial sponsorship ends.

Specifically, issues and activities that the Collaborative Partnership on Forests member organizations could support to facilitate forest investments in developing countries include:

1. *Combining in-country financial and forestry knowledge to prepare and present a country's attractiveness to foreign investors*

Forest investments emerged in North America and are only slowly extending to other countries. Thus, experience in developing countries is still limited regarding how to structure and place forestry opportunities. This task is a multi-disciplinary one, where financial and forestry knowledge must be combined in a joint effort. Consequently, with support of, for example, FAO, in-country know-how can be built up based on a) local forestry, financial and legal knowledge, combined with b) investment know-how of advisors that offer development country experience and investor requirement details.

2. *Disseminating detailed technical information through publications and sponsorship of forest investment events*

Once in-country know-how has been developed and sound forestry business cases are available, this information can be made public. FAO may support in-country workshops for investors and projects. Opportunities might also arise when forest investment summits are attended and cases are presented. Less successful or unsuccessful forest investments may be described as well as successful ones to help investors feel fully informed and able to price the risk they are taking.

3. *Developing credibility criteria for countries and projects to back up in-country approaches*

Many investment decisions are based on indices developed by rating agencies. Forest investment indices are practically non-existent, although some guides have been developed. Price and transaction collection is also poorly developed. FAO can bring transparency and publicity to this market by regularly reporting information on these variables.

In general, FAO has opportunity to contribute to the knowledge and training base that could help bring about increased forest investment in developing countries.

FOR PROJECT DEVELOPERS

Intermediaries and consultants often link project or forest owners and investors or managers. Some have a specific development aid and forestry background, but often lack knowledge of the particular interests of investment managers. Others provide sophisticated investment and financial skills but lack forestry proficiency. Moreover, project developers are small in number and size and are thus often not visible to prospective owners or investors and managers. Still, this group of intermediaries has a distinct role to play to narrow the gap between investment opportunities and investors.

Very few forest consulting companies provide a systematic guide to forest investments to project sponsors/forest owners. Some financial audit and consulting companies provide toolkits on forestry finance, and smaller consulting companies or individual consultants have developed internal guidelines, but most are proprietary and not known either to investors or managers.

Project developers, not usually bound by political frameworks or restrictions, are a flexible and potentially effective community for the development of business cases. In contrast to development agencies, they can readily adapt to new and changing markets and ideally supplement the long-term strategies of development agencies.

FOR INVESTORS

Investors are heterogeneous, even when limited to institutions. Requirements are diverse regarding size, liquidity, cash flow, risk-return considerations and investment horizon. Moreover, few investors and managers employing competing strategies for asset acquisitions make their requirements publicly available. Further, investors, in contrast to managers, are inclined to expend few resources on an asset class that typically comprises less than 2% of their investment portfolio. Investors should be cognizant that categorizing forest investments under an umbrella with assets possessing dissimilar investment attributes, like private equity, infrastructure or other natural resources, has unintended consequences for optimal asset allocation. Less-constrained allocations may justify devoting incremental resources to forest investments, in the best case leading to better results as new and better strategies and investments result.

Some investors also seek resource security through ownership of underlying land, excluding countries where foreign land ownership is not allowed. For investors seeking the investment attributes of forests, exclusion of land leases, forestry rights, and timber deeds may be unduly limiting.

FOR INVESTMENT MANAGERS

Investment managers, those focusing solely on forestry and those where forests are a part of their broader investment management services, are presently the bridge between investors and project/forest owners. Managers are well positioned to grow in the long run, as many institutions have yet to make any allocation to forestry. Compared to other once-rare investment sectors, forest investment may have another generation or more before reaching its potential penetration in institutional portfolios. Due to institutional scale, managers seek large investment opportunities and tend not to support small and medium entrepreneurs and investments in forestry. However, for a diversified forestry portfolio, investments of modest scale can stabilize returns and further socially responsible forestry, particularly in developing countries. A shift away from, or in addition to, very large forest assets also provides opportunities for diversification into specialty non-timber products such as cork, sandal oil,

Brazil nuts and others. These specialty forest products may offer good return opportunities combined with social benefits.

8. Conclusions

Many types of institutional investors, including pension funds, insurers, private banks (on behalf of their clients), churches, foundations, family offices and others currently invest in forests. Investors understand the financial attributes of such investments (Halttila et al. 2010) and appreciate their achieved rates of return, which may consist of a) biological growth, b) timber price changes, and c) land value changes (Caulfield 1998), among other factors. The overwhelming majority of this capital is invested via investment managers, who combine investment acumen with specialized expertise in forestry to execute an investment program. The notable role of investment managers for other real asset investment classes has also been described by Staub-Bisang (2011) and Marshall et al. (2010).

Investments in developing-country forests are mainly based on the risk assessment of the investment manager or investor. Standards for risk assessments of forest investments do not exist. Each manager develops their own criteria, even though, for example, PricewaterhouseCoopers (PWC) has developed toolkits and Zurich Insurance Company offers global risk assessments. The survey revealed that timberland investment in a region, country or market is more attractive when non-forest investments already exist there, with satisfactory results. Forest-related track record, country experience, and local infrastructure were clearly mentioned as criteria for choosing a manager.

The proportion of investment in forestry has changed little over the past 10 years – institutions tend to place approximately 1% of their capital in forests. However, the number of institutions investing in forestry rose, and could potentially increase for many years to come, since most institutions still have no investment in forests. The studies of Fu (2010) describe the growth of institutional forest investment between 1989 and 2009.

There is general agreement among investors and managers that more capital could be invested if suitable investment opportunities were available. The term "suitable" is related to political, social, and legal stability; size of investment; management history; expected returns, liquidity, and cash flow potential. Because the current limited supply of investment opportunities may contribute to higher forestland prices, increases in the supply of suitable opportunities should be received favorably by the investment community. Increased supply would reduce pressure on timberland prices, allowing potentially better rates of return.

Investment managers from North America and Europe show a clear preference to invest in the Americas and in planted forests. Although natural forests are not precluded, at least in

temperate zones, there is some concern that investing in natural tropical forests will damage public perception of the investor. Certification of sustainable management is sought by all investors and managers, generally within a reasonable period of time after investing.

Pathways that lead institutional investors to forestry in developing countries are primarily "word of mouth" or recommendations by investment managers, advisors or peers. This pathway can be attributed to investors who place relatively low amounts of capital (<USD 50 million). These investments are often direct investments, i.e, direct ownership of land and timber rather than participation in funds.

Another primary pathway is a structured approach that typically incorporates a strategic asset allocation study, asset class research, and a manager search process. Larger investors prefer this approach. Moves to new countries are made slowly. Before an investment might be placed, managers or investors may scrutinize a country for a several years to determine whether business opportunities develop as predicted.

Institutions' primary reasons for investing in forests are

1. Diversification, exhibited by non-correlation with stock, bond and commercial real estate market performance,
2. Hedging inflation, as indicated by a positive correlation between inflation and forests' rate of return, and
3. Attenuation of risk, partly through certification that forests are managed sustainably

All fundamentals of forest investments, as described, for example, by Haltila et al. (2010) are represented. Among the "must have" criteria are political, social, legal, and financial stability, ease of funds transfer, and security of title. All of these were in addition to a basic need for attractive returns. For institutional investment in forests in developing countries, the prominent factors are risk-adjusted expected return and organizational choice. In non-specialized asset management offices, relatively few individuals make alternative investment decisions. Decision-makers rely heavily on personal experience in selecting investment types and countries. Asset managers avoid spending disproportionate time on investments that constitute a small proportion of their institutions' portfolios. Forestry investments are frequently based on opportunity and chance. Larger asset managers select countries systematically and preference is given to relatively more-developed countries, such as Brazil.

Institutions promote sustainable forest management and the preservation and enhancement of ecosystem services through the manager, nearly all of whom seek recognized forest certification. Open issues that increase perceived risk in developing countries are avoided by managers and investors, so investments must be made as "investment-ready" as possible by investment proponents. Investment alternatives that require low levels of due diligence therefore have an advantage.

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Annex 1. Key Terms

Developing country - States, which in comparison to developed countries are lagging behind, both by the achieved level of welfare and the functioning of the economic system in terms of generating welfare-related services. Indicators to illustrate the low state of development are: low per capita income and existence of broad social layers close to subsistence level, low labor productivity, high unemployment rate, low educational attainment; dominance of the primary sector in agricultural production and exports, inadequate infrastructure. (Source: <http://wirtschaftslexikon.gabler.de>)

Development agency – agency advocating for change and connecting countries or organizations to knowledge, experience and resources to help people build a better life. (Source: adapted from United Nations Development Programme (UNDP) website's Overview)

Emerging market - any area that is taking steps toward developing a market-oriented forest sector economy, and has the potential to provide a viable and significant market for forest commodities or forest products. (Source: adapted from <http://www.fas.usda.gov/mos/em-markets/World%20Bank.pdf>)

Endowment - Permanent fund bestowed upon an individual or institution, such as a university, museum, hospital, or foundation, to be used for a specific purpose.

Family Office - Private company that manages investments and trusts for a single wealthy family

Forest - Land with tree crown cover (or equivalent stocking level) of more than 10 percent and area of more than 0.5 ha. The trees should be able to reach a minimum height of 5 m at maturity *in situ*. Young natural stands and all plantations established for forestry purposes which have yet to reach a crown density of 10 percent or three height of 5 m are included under forest, as are areas normally forming part of the forest area which are temporarily unstocked as a result of human intervention or natural causes but which are expected to revert to forest. (Source: FAOTERM website; country-specific definitions exist)

Investment portfolio - Pool of investments by which an investor or manager tries to make a profit while preserving the invested amount. Investments are chosen generally on the basis of a risk-reward spectrum: from 'low risk, low reward' to 'high risk, high reward'; different income streams: steady but fixed, or variable but potentially growing; and the extent that the returns from one investment are not correlated with other investments, and correlated with inflation. In forest investing,

investment managers seek institutions that can allocate at least \$5 million to forests.

NCREIF - The National Council of Real Estate Investment Fiduciaries (NCREIF) is an association of institutional real estate professionals who share a common interest in their industry. The NCREIF Timberland Index is a quarterly time series composite return measure of investment performance of a large pool of individual timber properties acquired in the private market for investment purposes only. All properties in the Timberland Index have been acquired, at least in part, on behalf of tax-exempt institutional investors - the great majority being pension funds. As such, all properties are held in a fiduciary environment. (source: www.ncerif.org)

REIT - A real estate investment trust or REIT is a tax designation for a corporate entity investing in real estate. The purpose of this designation is to reduce or eliminate corporate tax. In return, REITs are required to distribute 90% of their taxable income into the hands of investors. The REIT structure was designed to provide a real estate investment structure similar to the structure mutual funds provide for investment in stocks. REITs can be publicly or privately held. Public REITs may be listed on public stock exchanges. REITs can be classified as equity, mortgage, or a hybrid. The key statistics to examine in a REIT are net asset value (NAV), funds from operations (FFO), adjusted funds from operations (AFFO) and cash available for distribution (CAD). (source: www.wikipedia.org)

Timberland - Forest land capable of producing at least 1.4 cubic meters per hectare (20 ft³/acre) per year of industrial wood and not withdrawn from timber utilization. (Source: FAO Global Forest Resources Assessment 2010: Micronesia). This term is frequently used in forest investment, and forest classification more generally, and encompasses both forest and land on which forests stand.

United Nations Principles for Responsible Investment (UN PRI) - An investor initiative, in partnership with UNEP Finance Initiative and the UN Global Compact, stating institutional investors' duty to act in the best long-term interests of their beneficiaries. In this fiduciary role, they believe that environmental, social, and corporate governance issues can affect the performance of investment portfolios (to varying degrees across companies, sectors, regions, asset classes and time), and recognize that applying these Principles may better align investors with broader objectives of society. (Source: www.unpri.org/principles/)

Annex 2. Responses

INVESTOR RESPONSES

Investor respondents included executives of pension plans, endowments and family offices. Their assets were generally \$1 billion or more. Respondents are investment professionals who do not have expertise in forestry *per se*, but are familiar with the investment attributes of a wide range of asset classes and investment opportunities. Some may specialize in private market or natural resource investments, but they are still considering forest investments in the context of the numerous investment alternatives that are available to their organization. Their exposure to forest investments is gained by contracting with a forest investment manager, via a fund or account whose scope, purpose, obligations and other terms are specified in contracts, much the way their investments in other private markets are organized.

1. Are you already investing in forestry (continue with Q 2) or do you plan to invest in forestry (continue with Q 3)?

All North American investors surveyed are already invested in forests, although some are not fully invested yet (some of the capital they have allocated to invest in forests has not been invested yet). European investors interviewed are only partly invested in forests, and those already invested plan to increase their volume. Those not yet invested (potential investors) plan to do so in the near future (<3 years). The authors attribute this partly to the nature of their contacts: since they are forest investment specialists, most of the contacts are at organizations that have invested in forests or plan to do so. Among contacts not yet investing in forests, some used this as a reason not to participate, i.e. they felt that the survey was really meant for institutions already invested in forests.

2. When and how did your organization's investment in forests originate?

In North America, investors' original investment in forests ranged from 1993 to 2011. The idea arose in different ways, including prospecting by investment managers; part of an existing private equity investment program; peers investing in forests; and outcome from the organization's most recent asset allocation study, which established a "natural resources" or "real assets" category that includes forestry. In Europe, the trend is similar. However, investments started slower and only gained momentum recently.

In the experience of the surveyors, the normal course of personnel turnover poses a challenge to sustaining interest in forest investment among institutions. Often, a single person obtains a desirable degree of understanding of the forest investment program's details, but once the investment agreement is completed, allocated capital is invested and the most-informed person moves to another organization, interest subsides. This seems likely to be a perpetual challenge, because forest investment will rarely represent enough of the portfolio to justify hiring someone with a specialized forestry background, and there are usually other priorities for the typical investment professional, who tends to pay attention to the larger asset classes with which they are more familiar and the fund's

current initiatives. As an "old initiative," forestry is often a lower priority as years pass since initial investment.

3. What are your organization's main motivations for investing in forestry?

Diversification was the primary answer to this question, offered by a majority of respondents. The lack of correlation between the investment rate of return for timberland in comparison to mainstream asset classes means that timberland investments should make the overall portfolio more efficient by attaining its intended rate of return with less volatility and chance of loss. This answer was given independently of the region where investors originate – North America or Europe.

Hedging inflation was the next most common response from investors. Research reporting the relationship between rates of general price inflation and returns from timberland investment finds a positive correlation. It may be worth noting, however, that such research typically includes only a single period of high inflation, the 1970s-early 1980s. It seems reasonable to suggest that investors that are particularly concerned about inflation are those who are likely to explore investing in timberland and ultimately do so. Particularly in Europe, where euro stability suffered in recent years, hedging inflation through investments in real assets is the primary motivation.

Excess return due to underpricing of forests relative to their low risk, level of cash flow, value appreciation, and relatively low risk, in no particular order, were other reasons that investors mentioned as motivations. These latter aspects were mentioned as reasons for investing far behind the former two reasons, with no difference between North America and Europe.

Particularly in Europe, investors raised forest-specific reasons, such as additional stability through investing in land, sustainability aspects, possibility of no-cost "storage" of trees in forests when prices are low, and increasing global demand for wood and wood products. The mention of forest-related reasons in Europe suggests that forests are viewed from a different angle than in North America. It seems that in Europe, forests are regarded more strongly as "natural asset classes," which are invested in for reliable long-term rate of return and relative independence from financial markets.

4. What are your main concerns about investing in forestry?

Over-valuation was the most common concern, cited by a majority of investors. This suggests that most investors are still investing their allocation to timberland (whereas if they were fully invested, over-valuation might be viewed as an opportunity to add value by selling and re-deploying the proceeds). It also indicates that investors are not employing cost-averaging, i.e. investing their allocation over the duration of a business or valuation cycle, to reduce the risk of buying at the time when an asset is relatively expensive.

Without regard to frequency or importance, other concerns include i) country risk, ii) illiquidity, iii) opaqueness about pricing and value, and iv) lack of knowledge about how to invest.

Issues typically raised by non-investors or prospective investors, such as natural hazards (storms, fire, insects, etc.), were not mentioned in North America. Of particular concern in Europe was country risk, thus the required close cooperation with, and trust in, the investment manager.

5. Were or are there other key factors in the decision to invest and continue investing?

There was no pattern in the answers to this question. Factors mentioned were i) forest investments are currently generating less cash flow than expected, ii) favorable cost structure is important in making investments, as in many sectors, iii) supply and demand, iv) participation of non-economic buyers, which skews pricing, v) forests have a different key source of return than other investments, in that forests always grow, independent of what is happening in the wider investment universe, and vi) currency risk.

6. What percentage of your total portfolio is allocated to forests?

Approximately 1% or less was the most common allocation in reply to this question, although higher allocations in the 5-10% range were mentioned. First, it should be understood that this often represents the mid-point of an acceptable or target range, such as 0-2%, of portfolio value allocated to forests. Ranges are used such that when values in an asset class change significantly, the change does not move the portfolio too readily out of compliance with the institution's investment policy, necessitating action to regain compliance. Second, caution is urged in repeating or promoting the highest values, which seem to be portrayed as representing the potential, or appropriate, level for institutions to invest in forests. In fact, the most common proportionate allocation seems to have changed very little over the generation since institutions began investing in forests. There are reasons for this: fundamentally, the allocation to any asset class should approximate its share of the investable portfolio of all assets (the combined value of investable equity shares, fixed income, real estate, natural resources, etc. in which institutions can invest). Institutional-quality timberland's (timberland privately owned, professionally managed and of sufficient size to attract institutional capital) value worldwide is in the range of hundreds of billions (USD), while the wider market portfolio is in the tens of trillions (see, for example, <http://corporate.morningstar.com/ib/documents/MethodologyDocuments/IBBAAssociates/GlobalRealEstateWhitePaper.pdf>).

Further, institutions allocate assets by categories, and forests are rarely their own category, given their relatively small representation of the investable asset universe. Instead they are a subset of the real estate, private equity, natural resources, real assets or absolute-return allocations. One or two of these categories might draw a 5-10% allocation of the institution's portfolio (the vast majority is allocated to publicly traded securities), which then is spread across a range of subsets of the category, making it understandable why a subset like timberland often has an allocation around 1%, and why this is unlikely to change.

7. Is your allocation to forests done by geography, and if yes, can you describe it?

Investors were split between i) allocation by geography in a very broad way (such as USA/ex-USA, or North America/other OECD (Organization for Economic Cooperation and Development)/ex-OECD) and ii) primarily focused on best opportunity (with geography potentially a surrogate for helping screen for best opportunity, or a secondary consideration to prevent excess exposure to a geographic category). Because most investors subscribe to a manager's fund or hire managers, who then have discretion regarding investment geography, investors who allocate by geography should have the resources to search for managers and monitor investments accordingly. Investors who retain discretion over investment decisions are a smaller but growing proportion of forest investors. This type of investor is waiting for opportunities in countries where they are invested in other sectors already, or where business partners are invested. A number of countries were mentioned by European investors that would be considered "no go" areas (negative selection). Most of these countries are those affected by war or other social instabilities.

8. Is your allocation to forests done by forest type, and if yes, can you describe it?

None of the investors from North America allocate their investment by forest type. Most of those surveyed expressed their awareness of forest type as softwood vs. hardwood or planted vs. natural (they did not express forest type in terms of mature vs. immature, or temperate vs. tropical). While not allocating along such lines, a minority of investors preferred diversification by forest type, so they intend to monitor such attributes. One respondent expressed a preference for plantations due to the greater variability of natural forests, and the attendant less precise or more costly inventory associated with it, especially in the tropics.

Responses from European investors draw a slightly different picture, which is a similar negative selection as above. As "no go" areas nearly all of them mentioned natural tropical forests. Although sustainable forest management was known to all of them, forest management in the tropics is seen as forest clearing, illegal logging, and conversion, so any investment in natural forest would be in temperate areas.

9. Are you aware of other entities investing in forestry in emerging markets, and can you name them or provide contact information?

Nearly half of the investors surveyed were not aware of others investing in emerging-market forests, which for this purpose can be thought of as countries or markets lacking ability to attract capital. Among those that were aware of such entities, they only mentioned by name some of the firms with which we are already familiar. The investment scope of these firms is multi-national, but may not involve "emerging" markets, depending on how it is defined. One respondent acknowledged maintaining a lengthy list of firms, but would not disclose anything further due to a concern that some of the firms are small, specialized and lack capacity to handle any significant increase in investment demand. It was therefore not in the investor's best interest to identify them.

European investors named a few Europe-based managers, mainly the most established firms.

10. In your opinion, what impedes further interest in investing in forestry in emerging markets?

Political risk was a primary concern in North America and Europe to this question, including such specific examples as concern about the rule of law, regulatory risk, and the often conflicting political forces regarding whether foreign investment is desired or not. These are risks that apply to emerging-market investing in general; they are not specific to forests. Secure title was equally mentioned as an impediment. On the other hand, one person also offered that investing in emerging markets adds diversification to the forest investment portfolio.

11. Regarding investment requirements, what are "must have" conditions or attributes for your forestry investments? What are "no go" conditions or attributes? Are there also "good to have" characteristics that you look for or prefer?

Reinforcing the question above, established private property rights was the most important "must have" condition, or the lack of same a "no go" condition. Other attributes sought were well-functioning legal and banking systems, strong domestic consumption of forest products, a stable tax system, acceptable currency policy/risk and a proven manager with integrated property management. The latter was mentioned numerous times by European investors.

12. Do your forest investments include forest-based businesses, such as timber processing? Why or why not?

Investors generally do not invest in forest-based businesses, but would consider it under certain circumstances. Reasons for avoiding forest-based businesses include introducing operating risk and labor issues. Investors know they lack expertise in these areas. Also, investors are seeking the investment attributes of the forest, not those of essentially a private-equity processing business as well. However, if an attractive forest investment is available, and for some reason there is a vertical integration failure in the associated market, at least some investors are and have been willing to include forest-based businesses as part of their investment. In the European investor universe, investors show a higher tendency to invest fully downstream, however with no clear trend in size or type of investor. This suggests that the main factor for deciding to go downstream is knowledge about opportunities or personal risk preference.

13. Do you take measures to ensure sustainable forest management regarding your investments? If yes, please describe them.

With a single exception, investors in North America and Europe replied that they seek forest investments that can be certified as sustainably managed. Investors have addressed sustainability not by writing it into their investment policy, but by exploring it with their managers and being comfortable with their representations. Investors did not express a

preference regarding the certifying entity or standard, as long as it is accepted or prevalent for the subject country, region or forest type.

14. How have forest investments performed for you so far – have they shown the attributes expected; have they shown attributes you didn't expect?

North American replies to this question seemed to correlate with the time of initial investment, as is the case in many private-market investment sectors. Some investors began recently enough that overall performance has not been judged yet, but deals that involved distressed sellers have been written up in value. Cash flow in recent periods, however, has been less than expected, and is needed to pay interest expense, which was not consistent with the original business plan. Other organizations began investing in the period between the last two economic recessions, and they have not seen the value appreciation that they sought. One investor characterized their experience as containing few surprises. Those that have invested in emerging markets have been pleased with results so far.

In Europe, where forest investment only gained momentum in sizable quantities recently, responses were relatively vague and varied. In several cases, investments were in greenfield projects, where, due to age of timber, performance is only assessed in valuation reports and not in true cash flow. Unexpected was the lower performance compared to original, probably overestimated, projection. A few investors from Europe expressed their satisfaction with performance, cash flow, and liquidity of their forest investment.

INVESTMENT MANAGER RESPONSES

Ex-Europe investment managers were mainly specialized timberland investment firms, whereas, due to the limited number of such firms in Europe, investment managers there are also asset managers who arrange for a sub-advisor to handle forest asset management.

1. What is the value of the forest assets you manage (this is worded to a) exclude committed capital that isn't invested yet, and b) ignore whether 3rd-party debt was used in addition to equity in financing the forests under management)

Ex-Europe: Investment managers surveyed represented a collective US\$33 billion in forest value under management. The median amount under management was US\$1 billion.

EU: Investment managers surveyed represented a collective US\$3.3 billion forest value under management. The median amount under management was US\$100 million.

2. Do you have (or take into consideration) geographic targets for the investments you manage, and if yes, can you describe them?

Investment managers offer a range of stances when it comes to geographic targets, perhaps to fully serve the range of investor attitudes about geography. A slight majority of managers espouse geographically diversified portfolios as an investment strategy. Particularly in Europe, target areas are often specific. Most of the firms that advocate diversified portfolios have invested in the USA and the southern hemisphere, but some have invested in various forest regions of the USA so far, while expressing a willingness to invest elsewhere if opportunities are attractive. In Europe, the main target investment area is also the USA, followed by South America, and Northern & Eastern Europe. Diversification goals are qualitative for some managers (avoid multiple investments in overlapping market areas); for those that quantify such goals, their targets are broad to accommodate the variability in vagaries of deal flow they experience.

A significant minority of managers limit the geographic scope of investments they offer. In some cases, they manage USA investments only or specialize in managing the forests of a single region of the USA. Some managers operate multi-nationally, but have a more defined geography for any particular fund. It should be clear that between those managers that emphasize geographic diversification and those that do not, there is significant overlap in the geographic breadth of their operations. Across both groups, the majority of managers indicated they had criteria, usually applicable by country, through which forest investing is screened, and therefore formally or informally had an accepted list of countries for investment. Surprisingly, particularly in Europe, the criteria for this informal list are more politically than forest-related.

3. Do you have investment targets by forest type, and if yes, can you describe them?

In speaking about forest type diversification, most managers perceived this as natural vs. planted forests, or softwood vs. hardwood forests, but growth rate and timber market

attributes were other dimensions mentioned. A slight majority of managers affirmatively target forest by type, although often it is in general terms to "diversify" this attribute. More specific examples often related the forest type to end-use markets that the manager considered attractive. Among those answering "no," many still characterized their investments as primarily planted and primarily softwoods. Ultimately, the profile of the forests managed by those answering "yes" vs. "no" is probably not meaningfully different. We would categorize just one firm in our survey as specializing by forest type. This may be a matter of scale: forest managers that specialize in certain forest types seem numerous, but they also may not operate at the scale (able to invest hundreds of million in US\$) that institutional investors and managers typically seek. In Europe, perception of forest types is still vague. However, after describing the background of the question, most answered that preference is given to planted forests, as management of natural forest – particularly in the tropics – is still associated with "rainforest destruction," etc.

4. Regarding investment requirements, what are "must have" conditions or attributes for your forestry investments? What are "no go" conditions or attributes? Are there also "good to have" characteristics that you look for or prefer?

The most frequent attribute managers need for forest investment is active, competitive markets for the primary forest products they grow. Mentioned almost as frequently was a private ownership system for forest land or long-term forest rights, followed by the related need of a reliable legal system that enforces relevant laws. Next in importance were indications of economic soundness of the forest sector, and sufficient prospective rate of return relative to perceived risk. Responses in Europe were identical with those ex-Europe, however clear priority was a stable political and legal system. Discussions revealed that a system would be considered as stable once no negative press was published for more than 10 years.

The most prominent "no go" condition noted by managers was the prevalence of corrupt business practices. In Europe one of the "must-have" conditions was negatively repeated and social, political, or legal instability was always among the first items mentioned. Other items mentioned by multiple respondents were over-regulation (specifically in regard to forest operations, sale of forest products and employment) and risk of assets being taken by government.

5. Under what conditions are institutions investing in emerging-market forests?

Outside Europe, the leading answer provided by investment managers was that the expectation of higher rates of return drives investment in emerging-market forests. Most managers' experience leads them to think that rates of return will ultimately not attain the levels expected by supporters of emerging-market investments. Other conditions facilitating emerging-market investment repeated by managers are i) relevant experience or track record of the investment sponsor, ii) understanding and manageability of political and implementation risks, iii) sufficiency of potential deal flow and ultimate scale, and iv) favorable forest productivity. That said, there seem to be very few managers

who can present a favorable track record, and veteran forest investment professionals suggest that risks are greater than imagined and desired scale may not be achievable. Forest investments in Europe are still at a small scale compared to the USA market and specialized investment managers are subsequently limited in number. Therefore responses were more general. However, uniquely mentioned was the experience and track record of the local forest manager. European investment managers also mentioned the free flow of funds in and out of a country as a pre-requisite. Much less frequently, potential higher returns were mentioned as a precondition.

6. How would investments be sourced in emerging markets?

A majority of institutional investment managers expect that multiple routes would be taken to source opportunities. Identifying a local partner and working with land or business brokers/independent agents/intermediaries would be most commonly used, followed closely by investment banks' deals, establishing own staff in-market, conferring with reputable consultants, and following professional networks. The routes used by ex-Europeans and Europeans would be similar. However, the ranking of the answers suggests that investment managers in Europe prefer personal relationships through consultants, friends, and professional networks.

7. In your opinion, what impedes further interest in investing in forestry in emerging markets?

Collective response to this question was the most varied, although overall themes overlap with answers to questions 4 and 5 above.

One theme was experience and track record, which was uniquely the first answer in Europe. The form this took included

- absence of managers offering investments in emerging markets
- lack of performance track record
- lack of emerging-market expertise among manager personnel
- memory of unsuccessful investments by forest products companies

Supporting this theme is our observation that even among firms that have established operations in emerging markets, investment performance information seems difficult to obtain. Particularly, monitoring and reporting skills of local managers were criticized in the European context. Of course developed-market managers do not make this information publicly available, but a benchmark of performance, the NCREIF Timberland Index, at least provides information from which to start and a signal that USA forests are an established and accepted investment for institutions.

Another ex-Europe theme is whether emerging markets are investable (sufficient scale, transaction activity, quality of assets and management, etc.), from a practical perspective. For European managers, this was of minor importance. Feedback on this theme included:

- investment-grade deals are limited
- sufficient scale is not possible

- many projects are afforestation initiatives ("greenfield"), which have different investment attributes than established forests
- vertical integration of timber processing with forest resources is the prevailing business model in emerging markets, while USA managers are familiar with separated forest and processing operation and averse to integration

This provides a bridge to the theme of investment characteristics, which were manifest in comments by respondents such as:

- projected rate of return is insufficient
- risk is higher than proponents argue; sellers or sponsors want the "dumb money"
- investors are biased against emerging markets, having heard "horror stories," perhaps from other asset classes in which they invest, such as private equity or international debt
- risk profile is not consistent with the intended role of timberland in the portfolio
- manager profitability is not commensurate in emerging markets, considering extra time required, and that such projects can not afford higher fees

Several ex-Europe managers also noted concerns about managing an emerging-market investment, which form a fourth theme:

- technical forestry expertise insufficient
- fire control insufficient
- a market needs multiple local managers, so that alternatives are available

For the ex-Europe firms, challenges associated with the broader economy of an emerging market are considered a separate theme, including:

- logging and hauling are uneconomic
- markets are lacking, including ports that, if present, are not competitive
- other infrastructure, like power, is not reliable
- domestic markets that provide an alternative to exporting are limited

European managers did not mention such details.

As well as general economic issues, the major issues of government and the legal system were prominently mentioned in answering this question, in this order:

- sovereign risk is too great; government stability and transparency of decisions is lacking
- property rights are not convincing or changes are too recent to rely on
- taxes and tax policy have not yet stabilized
- regulatory environment is ambiguous or unstable – multiple departments claim authority on matters (strongest concern of European managers)
- employment obligations are burdensome (particularly mentioned by European managers for Brazil)
- the judicial system is slow and corruption is widespread
- foreign ownership is restricted (particularly mentioned by European managers for Brazil)
- corruption makes business risk too great

Finally, two other matters that institutional managers said impede emerging-market forest investment were:

- difficulty of certifying that forests are managed sustainably
- public relations risk, i.e. perceived harm to rainforests or native peoples' rights (strong concern in Europe)

8. Are there cases in which impediments have been successfully reduced?

While a slight majority of managers responded affirmatively to this question and provided examples, it is as noteworthy that nearly ½ of the ex-Europe managers answered "no" to this question, and a higher proportion of European managers. Multiple managers further suggested that if anything, impediments are becoming greater. Examples cited by managers were:

- privatization, i.e. Australia, with a key being that government ultimately underwrote regulatory and labor risks identified by prospective investors in the sale process
- forest-specific legislation, i.e. Uruguay, which successfully attracted foreign investment in forests via clear legislation that has been stable now for over a decade
- social legislation, i.e. South Africa's ending of apartheid, making the country a newly acceptable investment destination from a social perspective
- macro-economic improvement, i.e. Brazil's control of excess inflation
- infrastructure improvement, i.e. New Zealand via port reform or Brazil via combination of direct government projects and encouraged foreign investment
- improved legal infrastructure, i.e. steps taken by several northeastern Brazil states to clarify land titles, or Chile to minimize corruption in business
- reasonable regulatory environment, i.e. Costa Rica
- improved law enforcement and government stability, i.e. Colombia

More general ideas offered by investment managers included:

- education, which has improved understanding of several markets and improved their acceptance as investable
- technical skills of forestry staff, which affects best-management practices
- appropriate structuring, often to minimize potential taxes
- financial instruments that transfer key risks; development banks may serve as originators
- knowing countries' legal systems well
- having a defined transaction to work on, which can help put some uncertainties aside
- long-term supply agreements with a solid partner can also mitigate perceived risks

9. What could national governments do to make forest investments more attractive in their country?

Two answers came through by a wide majority responding to this question:

- a) Establish, improve, and make more reliable the legal right of private and foreign ownership of land and forests. At the moment, more attention is being attained by opponents of this view. Opponents often express this in a nationalist way, as though individuals, corporations, sovereign wealth funds and governments of a country are all one entity, and should be combined and viewed as a "national" force aiming to control some aspect of the nations in which they invest. Governments that can see past these arguments, that the ultimate "control" is the right to own property and freely convey it to another, will have an advantage in drawing capital that boosts economic well-being. Governments can make forest investments even more attractive by facilitating freehold land ownership rights, rather than the long-term use rights (concessions, leases, etc.) that prevail in some countries. European managers mention this being particularly important in the Asia-Pacific region.
- b) Stabilize tax policy and simplify taxes. It is worth noting that the message was not to lower taxes. The message was that taxes can be a significant cost, and they are a cost that governments can control. If the cost of taxes can be understood, and perceived as unlikely to change markedly, then investors can work it into valuations readily. Multiple respondents cited Brazil as a country with a relatively challenging tax regime. Is it a paradox that Brazil still seems to be attracting substantial foreign investment in forests? Perhaps not, considering how much greater investment might be if a simpler tax system existed there. European managers mentioned the attractiveness of Asian tax environments.

A significant minority of managers also highlighted these issues that governments could and should address:

- Reinforce the rule of law, including transparent legal decisions and government policies, and effective anti-corruption practices. Managers are aware that local corruption persists even when the problem has been addressed in central government or larger cities.
- Provide stable and reasonable regulations, because a sense of certainty enhances investment prospects. Key areas include labor and forest environment.
- Improve transportation infrastructure
- Adopt credible policies for open timber markets. Related to the issues of regulation and infrastructure, governments are best to facilitate conditions in which owning a forest can be profitable, then allowing sellers and buyers, owners and processors, to develop business terms suitable to each party, if governments want to encourage institutional investment.

A final topic to mention is subsidies for forest investment, particularly for forest rehabilitation measures (the latter by European respondents). This can be done via tax incentives, cost-sharing, or other forms. While one manager suggested governments

should consider forest subsidies, more managers pointedly advised otherwise. They stated that subsidies end up getting capitalized into land values, thus 1) benefiting existing land owners, who may not be the economic target for a subsidy program, and 2) making land artificially more expensive, lowering the prospective return for an investor, and ultimately repelling institutional investment rather than attracting it.

10. What activities could international bodies (like UN FAO) undertake to facilitate institutional investment in forests?

There were two primary themes in managers' responses to this question: 1) advocate financial instruments that reduce risk, and 2) support research and publish additional technical information to educate and build a foundation from which investors can potentially operate.

Regarding financial instruments, suggestions included coordination with the World Bank, development banks, government insurance providers, and perhaps private banks as well. European managers suggested to split risk for greenfield projects between development banks (early stage) and financial investors (later stage). Areas for coordination included education about the forest sector, financing instruments customized for forest assets, and assurance/insurance against relevant risks.

Regarding research and information, many managers were aware of FAO's country reports. Though the reports are of interest, they are superficial for investment purposes. Information that would assist managers and help educate investors might include regular reports of timber and log prices for markets lacking them, timber products demand and supply, and databases of forest transactions and forest management costs in regions lacking them. In the realm of forest research, successful silviculture regimes and timber attributes are potential areas for support, so that managers can better understand prospective uses, and therefore attract appropriate value-added processors to the resources. Particularly in Europe there seems to be demand for reliable growth figures, site-species matching examples, and, more generally for "positive examples" at the country level.

Other answers to this question further emphasized answers to, for example, question 9, such as:

- Continue surveys such as this one that encourage communication of successes by neutral parties, including to governments as well as managers and investors
- support open and stable markets
- enhance property rights and improve land tenure systems
- discourage illegal logging; support log-tracking systems, so that legal sourcing can be documented and illegal sourcing discovered and stopped
- teach governments how to respect and attract capital
- enforce rule of law
- help limit corruption
- promote consistent legal and tax environments

11. Do your forest investments include forest-based businesses, such as timber processing?
Why or why not?

A significant majority of managers replied "no" to this question, with the most common reasoning that forest-based businesses 1) possess different investment characteristics (higher risk for poor return) than forests, and 2) require different expertise, which the manager lacked. In Europe, answers were supported by the wish to have clear exposure to the commodity timber and not to downstream products. Labor issues were another concern, as was the conflict with optimal forest management. However, some of these respondents also indicated that they would consider including a forest-based business in their investment, even if it's not their preference or they do not have any such investments currently.

It can be inferred that most managers probably had emerging-market investments in mind when addressing this question, because none of them mentioned avoiding the USA's Unrelated Business Income Tax (UBIT). Probably all of these firms have pension funds, endowments or foundations among their clients. These investors are exempt from U.S. taxes as long as their investments do not constitute actively engaging in a USA trade or business that is unrelated to their tax-exempt purpose. Basically, USA law does not allow a tax-exempt entity to actively compete with taxable corporations as a matter of fairness. While investment structuring and legal opinions may be able to address this challenge, it is also fair to say that such arrangements are rare. If the investment is outside the USA, however, these same investors are not exempt from tax, so investment in forest-based businesses can be considered.

Among those that do invest in forest-based businesses or would consider it, the dominant reason was if it was necessary to provide a market for the timber in which they were investing. Other considerations cited were i) requirement of an acquisition's terms (which might reflect a government's demand to secure jobs), ii) partnering with a processor (may improve utilization, and a strong domestic partner can aid in dealings with government), iii) investor interests and iv) separability of processing from the forest investment. Single responses cited investing in processing as taking advantage of favorable costs or unique management expertise.

12. Do you take measures to ensure sustainable forest management and conservation of ecosystem services that forests provide? If yes, please describe them.

All managers responded affirmatively that they take measures to ensure sustainable forest management, and all but one do so by getting independent certification of their management. Managers seem to take a pragmatic approach to certification, pursuing Forest Stewardship Council in situations where it is reasonable or required, Sustainable Forestry Initiative in many cases, Australian Forestry Standard, and IFC (International Finance Corp.) Sustainability. Managers felt that it was important to meet an accepted standard, such as ones accepted by PEFC (Programme for the Endorsement of Forest Certification schemes) or the relevant locality, rather than seeking a particular organization's certificate. Managers also noted that certification is sought for all

investments that can be certified, noting that certification programs do not necessarily cover the full breath of investment situations, such as when an investment involves standing timber but not underlying land, the investment is for a limited duration, or responsibility for some elements of forest management, such as reforestation, rest by contract with another party.

One manager has an internal policy that over a 10-year period, logging should not exceed growth. Another manager has an environmental management system that takes effect prior to acquiring a forest. Few managers spoke specifically to ecosystem services, perhaps because their subscription to certified sustainability should suffice as evidence that they conserve ecosystem services. Some managers actively screen potential investments for attributes of interest to conservation organizations. European managers were aware of the vocabulary, such as ecosystem services, climate change, REDD, etc., however as forestry is rather new to them, the aforementioned by-products are even further away.

13. What measures do you take to consider Corporate Social Responsibility and institutional image in investment decisions, and ensure the legality and good governance of forest operations (Please provide examples)?

Half of respondents, presumably those involved or most familiar with FSC certification of their forest management, replied that consideration of Corporate Social Responsibility was addressed as part of gaining their sustainability certificate. Several firms noted that they contribute to local community entities or conservation organizations as part of being a responsible corporate citizen. One firm noted that they have a written social policy that considers relationships with local communities, indigenous people, etc. A couple mentioned initiatives such as constructing or funding bus shelters, education programs, nutrition, and health clinics as part of their serious responsibility as a significant local landowner, and to help attract the best labor for their forest investment. One firm published a sustainability report annually. Most of the European managers have internal social or environmental, in some cases even sustainability, criteria in place, however the level of detail varies greatly. Some managers are signatory to the UN initiatives, such as the principles for sustainable investment.

Regarding governance, several managers noted that they have investment, risk or other management committees whose responsibilities include this function.

14. What trends do you see regarding investment in forests and/or wood processing in emerging vs. developing vs. developed markets?

A composite view of managers would be:

- There is an increasing orientation toward the southern hemisphere for investments, and Asia (especially China and India) as an additional driver of demand growth. A subset of this is greater awareness and promotion of emerging-market investments. Over time, wood usage follows wealth development; so, more processing will move

- closer to end-use markets. Emerging markets also have more possibility for forests for energy (eastern Europe), including places where energy is expensive (Chile).
- Expected returns in developed markets are not impressive, so some capital sources are looking elsewhere for higher rate of return. Emerging markets attract interest because of higher prospective rate of return. Increasing plantation assets in emerging markets are also a positive trend. In the 2000s, the number of countries that investment managers are exploring has expanded tremendously.
 - Investor and manager interest in emerging-market forest investments primarily emanates from Europe. Those willing to invest at smaller scale are investing in emerging markets.
 - There are doubts whether emerging-market investments will be worthwhile. Investors may not be receiving compensation for the risk involved, but there is still more activity in higher-risk markets in the last few years in an effort to place more money, because developed markets can not absorb the "real assets" demand. Recent emerging-market forest investments, so far, are not doing well financially, but may be succeeding socially. Development of emerging-market forest investment will be gradual – over decades – as time reveals whether investments succeed or not. Success will include demonstration of forest sustainability. For institutions to adopt the practice significantly, investment performance (including for timberland in developed markets) has to be adequate.
 - An important ingredient for success of forestry in emerging markets is harnessing forest technology.
 - There can also be a backlash to increasing foreign investment by institutional managers. While the negative response seems primarily directed at food production resources, forests may be swept up in it.

15. Are you aware of other entities investing in forestry in emerging markets, and can you name them or provide contact information?

Managers mentioned in passing a wide range of entities that they have heard may invest in emerging-market forests. However, they generally were not following the activities of such entities closely out of a sense that they do not significantly overlap, or compete with, well-established institutional managers. Managers follow the spread of their established competitors into new markets, whether New Zealand, Chile, Brazil, etc., but it is generally accepted that the subject investments in such countries are not in emerging markets. Investments in emerging markets are 1) small enough in scope and size, and 2) capitalized by investors (mostly European, some Canadian) not interested in subscribing to established managers' typical offerings, such that they do not pose major competition to established managers.

The list of entities that seemed well-known by managers included:

- International Woodland Company – investing in emerging markets globally; December 2010 newsletter summarized managers and funds:
http://www.iwc.dk/newsletters/1673_IWC_news32_web.pdf

- New Forests – investing in Asian emerging markets
- Resource Management Service – investing in China
- RMK – investing in southeastern Europe and Uruguay
- Nordkapital – investing in southeastern Europe
- Precious Woods – investing in Brazil, Costa Rica, Nicaragua and Gabon

Additional resources suggested included the consulting firms DANA and TimberLink, who provide information or advise institutional investors about forest investing.

As it may be useful, other entities or geographies mentioned in replies to this question are listed below. These items have not been further researched, so names could be mistaken, businesses changed or misunderstood, etc.

- Brazil-based funds, supposedly with USD 1-3 billion to invest
- Cambium -- UK listed
- China's sovereign fund (CIC)
- Colombia investment or fund
- Congo investment or fund
- Couloir - Africa
- East Africa - Green Resources
- Eastern Europe fund
- Ecobosque
- European utilities (eon, RWE) starting to fund forest establishment
- Forestland Group - Belize
- Futuro Forestal
- Global Environment Fund - most funding from development-finance agencies
- Green Millennium
- Greenwood Resources - China
- Guatemala and Panama - firms raising capital for teak investment there
- Japanese trading companies continue to be active, including in Brazil
- Phaunos timberland fund
- RMK - South Africa
- Swedish church and APG - Mozambique