Forest-Backed Bonds Proof of Concept Study

ISSUE BRIEF

In partnership with the U.K. Department for International Development
Introduction

To support the growth of sustainable capital flows, IFC’s advisory services seek to influence, support, and enable capital market stakeholders to better integrate environmental, social, and corporate governance (ESG) factors into capital allocation and portfolio management processes, using IFC’s own investment practices as a model. IFC is playing its part to support the growth of the market by funding the development of enhanced stock market indices, financial instruments, and through targeted market research.

Natural Forest Assets: Over 30 percent of the world’s land area – about 40 million km² – is covered in forest, of which 96 percent is classified as natural forest. In addition to providing an economic and cultural backdrop for the lives of 700 million of the world’s poorest people, this vast global estate delivers an array of essential local and global environmental services, including water storage and filtration, soil stabilization, and carbon storage.

Loss of natural forests has been a core issue for environmental non-governmental organizations (NGOs) and civil society groups (CSOs) for some time. Their call for action has gained new potency among global policymakers in the context of the climate change agenda. The Stern Review underlines the case for action by identifying avoided deforestation as the most effective and economically attractive action available to the global community to start addressing climate change.

Ownership & Management: Around 86 percent of forests are under government ownership, and 79 percent under the direct control of central governments. Governments allocate the right to manage these resources via concessions to a range of commercial and community groups, and NGOs. Globally, about 34 percent of forests are managed in some way. However, the existence of clear and enforceable property rights – central to effective ownership – remains a contentious issue in many tropical countries.

Investment in tropical forestry, both plantation and natural forests, is actively promoted by regional and local development banks, institutions, and NGOs. Initiatives such as the Forestry Investment Attractiveness Index, produced by the Inter American Development Bank (IADB), provide a comprehensive independent framework for assessing investment risk. Organizations such as the WWF Global Forest Trade Network (GFT) and Forest Trends Business Development Facility facilitate market access (for finance and forest products) for small- and medium-sized producers involved in sustainable forest management, production of certified products, and ecosystem services.

However, on a global basis, institutional investment in forestry remains focused on plantations. These man-made forests can grow at up to 15 times the rate of natural forests and accommodate a far greater degree of management control, delivering a homogenous and relatively predictable supply of timber.

Markets that assign financial value to the “non wood” components of natural forests are in their infancy. For practical purposes, commercial decisions relating to forest management are based on the value of accessible standing timber, the land on which the forest grows, and the value of competing land uses. These decisions are usually taken from a short-term perspective; while the current value of tropical hardwood can be substantial, the high “time value of money” in most tropical countries means that the net present value of any future/deferred harvest is often minimal. Slow growth rates and the importance of different tree species within complex and interconnected forest ecosystems, makes the choice and execution of an appropriate harvesting regime vital.

Sustainable Forest Management (SFM) has evolved as a practical response, and links the economic development of forestry with the desire for a more holistic approach to its management. SFM emphasizes the development of long-term asset value over short-term timber forest yield.

SFM operators and investors seek to develop new income streams from natural forests such as carbon, conservation payments, and ecotourism; and may blend this with income from plantations. The process emphasizes quality and diversity of asset value and the development of long-term cash flow. Enhancing underlying asset value in this way reduces overall investment risk over time.

Unlike plantations, natural forests yield a wide variety of hardwood timber species, and this requires a more flexible approach to marketing. Once a particular area has been harvested, it may be 40–50 years before the next harvest. Investment in modern processing equipment can ensure that the best use is made of the available resource, but this entails capital investment. Developing and maintaining complementary cash flows associated with SFM will contribute to the working capital of the SFM company. However, SFM companies will require a higher initial capital investment.

In 2006, IFC, with backing from the U.K. Department for International Development (DFID), commissioned EnviroMarket and Forum for the Future to undertake a scoping study to research the technical feasibility and likely development impact of a forest-backed bond as a financing solution for sustainable forest management in the developing world.

This summary version of Forest-Backed Bonds Proof of Concept Study (2007), which can be downloaded in full from IFC’s website, highlights the major findings of the report.
Equity financing of SFM: Considering the perceived risk, most institutional investors view conventional exploitation of tropical natural forests as an equity play. Limiting timber extraction at an ecologically sustainable level sets up a three-way relationship between (i) the value of the timber, (ii) the total area/geography of the concession, and (iii) the cost of the concession. In short, equity financing applied to SFM tends to dictate the need for large-scale operations, which in turn carry their own additional set of risks and costs.

Debt financing of SFM: Cost effective borrowing is a well-established route through which investors can improve their equity returns. Although neither plantation nor natural forestry is particularly capital intensive relative to the primary and secondary processing activities they feed, forestry operations involve lengthy payback periods. Cost effective financing of timber inventory, harvesting, and processing equipment is a key requirement for tropical forestry businesses.

The ease with which local operators can access local currency debt finance for forestry operations varies significantly. There is, however, a strong correlation between poor access to local capital and high deforestation rates at national level.

The use of structured commodity finance would enable forest operators to borrow against assets and/or future income. This is an attractive option because with SFM, the interests of the lender are well aligned with those of the operator. In other words, they both want to protect and enhance the long-term income generating potential of the forest. The efficacy of structured commodity finance is largely determined by the level of security that can be achieved. This in turn depends on how cost effectively risk relating to forest cash flow can be isolated, managed, and mitigated.

Risks of SFM: Commercial operators involved in tropical natural forestry face significant risks. The key to unlocking long-term capital structures lies in the cost effective management and mitigation of these risks. The major risks identified by investors are as follows:

- **Political risk** – Country risk is the greatest source of concern for investors. A high proportion of tropical natural forestry is in countries with poor governance, unstable currencies, and a poor economic track record.
- **Insecure property rights** – Unclear or conflicting ownership or usage rights prevent the use of forestry as security and heighten potential for local tension and/or conflict.
- **Property loss** – Natural forests are spread over large and often remote areas. In addition to damage or destruction as a result of human intervention, they are subject to a range of natural disasters.
- **Income loss** – Variations in market price, failure of a major client or destruction of forestry could all lead to loss of income.
- **Operational risk** – Forestry is not an exact science, and the success of individual projects rests heavily on the skills of the manager.

- **Reputation** – NGOs and CSOs are powerful stakeholders in the world of natural forestry, and owners of substantial tracts of land in their own right. While some seek pragmatic solutions to enhancing economic value of forests, others are confrontational, creating significant risks for both investors and operators.
- **Investment liquidity** – Lack of ability to easily buy and sell forestry limits its appeal and adds to the cost of financing.

Risk Management & Mitigation: A number of approaches to the mitigation and management of risk are available: (i) portfolio diversification, (ii) political risk insurance, (iii) investment and property insurance, (iv) credit derivatives, and (v) securitization.

The cost effectiveness of each mechanism depends on the asset, the asset location, and the objectives of the asset manager or investor.

Forest-Backed Bonds: Forest-backed bonds merge existing securitization techniques with rapidly emerging environmental markets in order to attract low cost, long term “patient capital” to projects that have potential to generate significant complementary cash flows, such as tropical forestry.

Assuming sufficient credit enhancement, forest-backed bonds could be issued against a variety of cash flows, including:

- A portfolio of cash flows from tropical plantation, natural forest, and conservation
- Government income/license fees from SFM
- A portfolio of SFM related loans to small and medium forest enterprises
- Plantation development linked to forest conservation

The feasibility of a tropical forest-backed bond is based on the availability and cost effective application of a series of risk management and mitigation procedures. Central to these are portfolio diversity, country selection, and third party credit enhancement.

The ability to secure long-term off-take agreements with national governments for certified timber and carbon, and with multilaterals for carbon, is a key component in boosting the overall credit quality of the pool. Overall economic and political stability, good local/regional demand, and effective local forest governance and institutions are the main factors in country selection. In general, tropical countries with high rates of deforestation have weak governance: this will limit the capacity of the portfolio to carry projects in these areas.

The availability of insurance for medium-sized forestry operators increases the potential to include them in a portfolio. Assuming an appropriate geographic spread and an appropriate screen for quality – such as certification to an appropriate standard – the inclusion of a greater number of relatively smaller forests will lead to additional reductions in the risk profile of the portfolio and subsequently reduce borrowing cost further when forest-backed bonds are issued.
The Market for Forest-Backed Bonds: The key areas of focus for investors in forest-backed bonds are country risk; duration; the nature and scale of complementary cash flows; the availability of accurate data on asset performance; and the quantity, quality, and cost of available credit enhancement.

Long-term investors with an interest in matching their liabilities against secure assets, such as pension funds and insurance companies, are the primary buyers at the 40–50-year duration proposed for forest-backed bonds. These ultra cautious investors target bonds that at least keep pace with inflation and guarantee a payback in line with their obligation to pensioners and annuity holders. To be attractive to this audience, forest-backed bonds need to be issued through a supranational entity and incorporate powerful guarantees.

Information on the underlying asset will also be central to effective rating, marketing, and post-issue performance analysis of forest-backed bonds. Significant gaps exist for biological and market data relating to tropical natural forestry (although data for plantations is more readily accessible).

Next Steps: Forest-backed bonds provide a means with which to kick start major private investment in tropical natural forests, enhancing their value relative to competing land uses in a way that benefits all key stakeholders. The full report provides a comprehensive analysis of recommended next steps.

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<tr>
<th>Model</th>
<th>Advantages</th>
<th>Disadvantages</th>
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<tbody>
<tr>
<td>A</td>
<td>A bond backed by government income from forestry concessions</td>
<td>• Predictability of income • Captures the long term benefits of sustainable forest management &quot;upfront&quot;</td>
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<tr>
<td>B</td>
<td>A bond backed by a diversified portfolio of sustainable forestry</td>
<td></td>
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<tr>
<td>B1</td>
<td>Local trade</td>
<td>• Reduced exposure to market price variation • Interest in natural growth forestry • Attractive property rights</td>
</tr>
<tr>
<td>B2</td>
<td>Export</td>
<td></td>
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<tr>
<td>C</td>
<td>A bond backed by sustainable forestry loans issued by local banks</td>
<td>• Local banks in some countries are already incentivized • Creates a &quot;virtuous circle&quot; lending, development and refinancing</td>
</tr>
<tr>
<td>D</td>
<td>Zero coupon bond</td>
<td>• Reduced exposure to market price variation • Interest in natural growth forestry • Attractive property rights</td>
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Forest-Backed Bonds Proof of Concept Study was sponsored by IFC with backing from the U.K. Department for International Development
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