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Green Bonds and Land Conservation: The Evolution of a New Financing Tool

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Introduction

Since their emergence as a new form of environmental financing in 2007, green bonds have stirred investors and environmentalists alike with the promise of providing a direct means of investing in environmentally-oriented projects. While most investors still view them as a niche product in the overall fixed income market, green bonds have grown rapidly to from \$108 million in issuance in 2007 to nearly \$37 billion in issuance in 2014 (Exhibit 1), with issuers from the World Bank to the State of Massachusetts. “Green Bonds and Land Conservation: The Evolution of a New Financing Tool,” the paper this policy brief is based on, examines the current and potential future use of green bonds for financing sustainable land use and conservation projects around the world.

The authors draw on interviews with land conservation practitioners, bond issuers, investors, and financial analysts, as well as analysis of two case studies in China and Massachusetts. Key insights from this community of experts are summarized, and the authors lay out a series of steps that will be required before green bonds can develop into a significant and reliable tool in the conservation finance toolkit. Key recommendations for land conservation practitioners and

the environmental finance community include: find opportunities to share best practices and success stories from projects and issuances to date in order to build momentum in the market; focus on articulating how land conservation can generate cash flows for bond repayment; and seek opportunities for state-level issuances and projects linked to water and stormwater management, which may be investment “sweet spots” for green bonds and land conservation.

About Green Bonds

Green bonds can be used to finance a broad range of environmental projects, including but not limited to categories such as renewable energy, energy efficiency, sustainable waste management, sustainable land use, biodiversity conservation, clean transportation, and clean water and/or drinking water. We focus on the use of green bonds to fund projects related to sustainable land use and conservation, which could include projects such as forestry, agricultural operations, land acquisitions, and conservation easements.

There are broadly five types of green bond: corporate, municipal, state, federal, and supranational. Like any bond, green bonds can be issued under the full faith and credit of the issuer, or can be based on the projected cash

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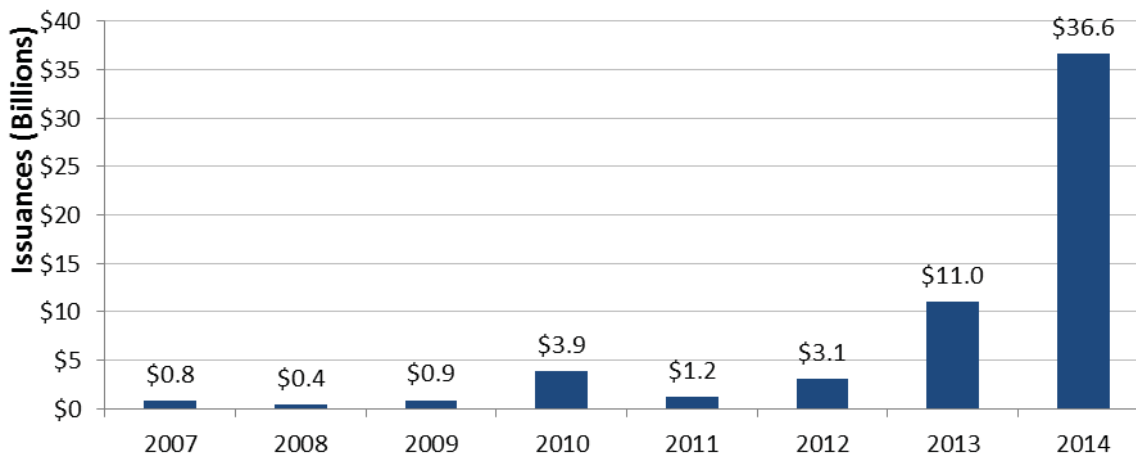
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Figure 1: Green Bond Issuances 2007 - 2014



Data from Climate Bonds Initiative, as of 12/31/2014

flows of the project to be funded. The majority of green bond issuances for sustainable land use and conservation to date have been based on the full faith and credit of the issuer. Project-based revenue or “asset-backed” bonds for land conservation are challenging because it can be difficult to articulate a steady stream of cash flows from these projects.

Though particular investors perceive some advantages of green bonds - such as those interested in supporting projects in specific geographic areas or wanting to take advantage of muni bond issuance tax benefits - such advantages are currently not sufficient to induce investors to accept a lower rate of interest on a green bond. In general, the authors found there is a sense of “wait and see” among larger investors to see if green bond issuance continues to grow and will develop into a permanent and widely-used tool for debt finance.

Research Approach

Though green bonds have the potential to be a

significant addition to the conservation finance toolkit, there has been limited research to date regarding the benefits, drawbacks, and potential for expansion of these bonds – particularly for their application to sustainable land use and conservation. The research was conducted using a combination of case studies, analysis of existing literature, and semi-structured in-depth interviews with 24 experts. The study has a number of objectives: first, to summarize the key insights from this community of experts; second, examining the potential for expanding green bonds as a vehicle for financing land conservation; third, focusing on green bonds’ strengths and weaknesses as a funding mechanism, as well as barriers to growth; and finally, exploring possible scenarios for the evolution of green bonds for land conservation over the next several years.

Green Bonds and Land Conservation

Though funding for conservation has long been supported primarily by governments, development finance institutions, and philanthropies, these traditional sources of

funding have experienced very little growth since the 1990s. Given that these traditional sources of funding are becoming insufficient for land conservation, there has been an increasing focus on what role conservation investments such as green bonds could play in addressing the shortfall. Green bonds have the potential to access private capital to finance a broad range of sustainable land use and conservation efforts. These projects include conservation easement purchases (e.g., controlling agricultural land use rights in upstream land holdings to increase sustainable practices and reduce run-off), land purchases that convert a land holding to a land conservation (e.g., grassland) or establish a more sustainable land use operation (e.g., transition from conventional to sustainable agriculture), establishment of forestry or agricultural production operations (e.g., construction of a timber mill for certified sustainable wood), establishment of recreation or ecotourism operations, payments for ecosystem services (e.g., establishment of carbon finance projects to protect standing forests), and mitigation banking (e.g., development of biodiversity offsets to compensate for the residual biodiversity impacts of project development).

Case Studies

Given the relatively recent emergence of green bonds as a financing mechanism, examples of sustainable land use and conservation green bonds are too few in number for a broad survey analysis of outcomes and best practices. However, the following two case studies provide an illustration of the form green bonds for sustainable land use can take.

Case Study: The Integrated Forestry Development Project, China

Background: The World Bank and Green Bonds

The World Bank issued the first green bond in 2008 as part of the Bank's Strategic Framework

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for Development and Climate Change, and has since that time has issued a total of \$8.5B in green bonds. The bonds are issued under the full faith and credit of the World Bank, meaning that repayment is not tied to the performance of a specific project. SEB, JP Morgan, and TD Securities are among the underwriting banks the Bank has partnered with to market and sell the bonds to investors. The World Bank sources the “green” projects from its broader pool of screened possible investments, meaning that the projects would likely have been financed anyway through traditional World Bank debt issuance. These bonds are issued across five categories including energy, transportation, and land use, and have funded projects in countries such as Armenia, China, Mexico, and the Philippines.

The Integrated Forestry Development Project

In China, the World Bank's green bond is providing \$100M in funding to the Integrated Forestry Development Project from 2010 to 2016, matched by \$100M from the Chinese government. The project aims to improve the ecological conditions of degraded forests through plantation of new native trees and to reform land use rights in collective forests. Criteria for success include annual rates of re-afforestation as well as the expansion of sustainably managed forestland and forest management training for farmers.

Insights

The project provides lessons for larger-scale projects funded at the supranational level.

- *Scale:* The project demonstrates that collaboration between national governments and large development banks can support large-scale sustainable land use and conservation projects.
- *Government engagement and investment:* The World Bank's partnership with the Chinese government was critical to funding the project. The government demonstrated its buy-in to the project through a matching investment of \$100M. Additionally, supranational green bond financing for land conservation may be most effective in countries where it is possible to assemble land rights for larger land holdings – whether because the land is currently owned by the government or because there is a regulatory environment that allows access to easements on privately-owned property.

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- *Supportive regulatory environment:* The project takes advantage of land tenure reforms in the regions where the project is taking place, and also includes provisions for supporting and bolstering the implementation of those reforms at the village and province level.

Case Study: Great Marsh Conservation Project, State of Massachusetts

Background: The State of Massachusetts and Green Bonds

In 2013, Massachusetts became the first U.S. state to issue green bonds, and funded projects

in categories such as land use, river and habitat preservation, energy, and water.

Great Marsh Conservation Project

The State funded the acquisition of conservation rights on 70 acres of coastal habitat in Ipswich, MA, within the Great Marsh “Area of Critical Environmental Concern.” The project leveraged \$750K in U.S. Fish and Wildlife Service Coastal Wetlands Conservation Grant Funding. The bond was issued under the full faith and credit of the State of Massachusetts. Though this project likely would have been funded through a normal state bond issuance, the issuance did attract new investors which may in turn increase investor demand for green bonds and help to increase the number of future projects.

Insights

The case study highlights a number of factors that make state-level issuances a good match for land conservation efforts in the United States:

- *Scale match:* The bond issuance financed a range of land conservation related projects, ranging from the hundreds of thousands to several million dollars. This flexibility in size may make state issuances a better match for land conservation projects than larger supranational issuances.
- *Government engagement:* In this issuance, the borrower is the same as the issuer, demonstrating a deep level of buy-in from government stakeholders toward ensuring the success of the projects.
- *Credit rating:* Massachusetts, like many states, has a strong credit rating, making it possible to issue general obligation bonds that are attractive to a broad range of institutional investors.

State issuers like Massachusetts may also be willing to provide some kind of risk mitigation or assurance for investors through tools such

as backstopping or Social Impact Bonds. Additionally, while there has been ad hoc sharing of advice and resources between states on the topic of green bonds, organized forums for discussing and sharing best practices among states are only newly emerging. Such forums may help spread lessons learned from the early experiences of Massachusetts and other green bond pioneers.

Project-Level Findings and Insights

Our interviews with experts across land conservation and conservation finance focused on opportunities related to green bonds for land conservation, as well as key barriers to adoption. Taken together with the lessons learned from the case study analysis, these interviews surfaced a set of eight success factors for when a green bond might be an attractive financing tool:

1. Issuer Credit Rating: A good credit rating for the issuing organization is critical to investors who perceive green bonds as risky.

2. Green Bond Criteria Match: Though currently there is not a set of universally agreed-upon green bond standards (though the Climate Bonds Standards and the Green Bonds Principles both offer frameworks), sustainable land use and land conservation generally qualify as “green” use of proceeds under most issuer green bond criteria. Institutional investors and family offices are sometimes more interested in use of proceeds when they buy green bonds than traditional retail investors.

3. Appropriateness of Debt: Land conservation organizations should consider whether debt financing makes sense for the given project based on its relative cost versus other forms of financing, alignment of the time horizon for the bond, and whether the borrower is comfortable taking on the repayment risk.

4. Scale Match: The project must match the size of the issuance if it is to be appealing to

investors. In many cases, land conservation projects are too small for large-scale bond issuances, though this issue may be addressed by pooling or securitizing multiple projects.

5. Articulated Returns: Investors may struggle to see how land conservation generates returns that can repay the bond. Categories of revenue may include sustainable commodity production, recreation or ecotourism, tax revenues, credits for ecosystem services, and/or risk mitigation and avoided costs.

6. Impact Measurement: If repayment of the bond is tied to the success of the project in terms of conservation outcomes, both the issuer and investors must agree on appropriate success measurements as well as the means of measuring impact.

7. Conducive Regulatory Environment: Regulation related to environmental management and impacts can result in a price on ecosystem services at the local, state, national, or international level.

8. Stakeholder Buy-in: Buy-in from key government, industry, and financial stakeholders can support the success of a project.

Market-Level Findings and Insights

Our research also revealed wider market-level insights about the challenges and opportunities related to using green bonds for sustainable land use and conservation projects.

1. Articulating cash flows is the biggest challenge for land conservation. The biggest challenge for investors, issuers, and underwriters is articulating and agreeing upon the revenues that can be generated through sustainable land use and conservation projects. As articulating cash flows from a sustainable land use and conservation project can be challenging, these bonds are still being issued on the full faith and credit of issuers as described in the case studies above. However,

it is becoming apparent that land conservation projects can generate revenue streams with clear and relatively stable market values. These revenue streams include sustainable commodity production (e.g., agricultural or forest products), recreation and ecotourism (e.g., entry fees), tax revenues, credit for ecosystem services (e.g., carbon credits), or risk mitigation and avoided costs (e.g., upstream riverside land conservation reduces the need for downstream water filtration infrastructure investments). If these financial benefits can be effectively articulated, new types of investors and new sources of capital may be brought to the table.

2. Investors are not ready for project-revenue backed bonds for land conservation. Even where a project may clearly generate revenue, such as with the World Bank's investment in timber projects, investors may perceive bonds based on this revenue as more risky than other projects more traditionally financed through bonds (e.g., renewable energy infrastructure projects).

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3. Currently, concerns about "additionality" are justified. Of the sustainable land use projects that have been funded to date, most if not all would have been funded regardless, including the projects in the case studies described above. In this vein, many experts consulted for this project were concerned that such green bonds were not providing any new

financing for land conservation, but rather the same investment just under a different label. This generates skepticism among many market practitioners who see green bond labeling as just a convenient marketing tool for the issuer for projects they would have funded regardless.

A possible benefit seen by some experts, however, is that this marketing tool may attract new investors. Institutional investors, family offices, and other impact-oriented investors are seeking new opportunities to allocate funds to socially- and environmentally-responsible investment vehicles. In the case of the State of Massachusetts' issuance, the state attracted TIAA-CREF and other new investors to their bond issuance because of the green label. While these projects may have been funded regardless, the State benefited from tapping into a new investor base, and over a longer time horizon, the State may be encouraged to issue more green bonds for new projects after seeing the high demand for the issuances to date.

4. Green bonds do not currently offer a better cost of capital for sustainable land use projects – but that may be changing. One way for green bonds to become more attractive to land conservation organizations than traditional bond financing is if green bonds can allow borrowers to access a lower cost of capital. Conversations with issuers and borrowers highlighted that the green bond label does not yet allow borrowers to access capital at a lower cost – that is, investors are not yet willing to pay a premium for the green label that would in turn lower the interest rate for borrowers. At the same time, green bond issuances have been consistently and significantly oversubscribed, and many experts consulted for this project predicted that such high levels of demand could over time result in an increased willingness to pay a premium for green bonds.

5. Matching scales is an ongoing challenge. One of the key challenges for funding land conservation through green bonds is the

scale mismatch between the project and the minimum size of bond issuance. Large investors are seeking large projects to fund, but finding land conservation opportunities at this scale can be challenging. The World Bank's issuance with China, as described above, required coordination with the national government and access to broad swaths of land. Many land conservation initiatives, particularly in the United States, may be too small to appeal to investors. Opportunities to assemble a portfolio of such projects into a larger issuance may be the best avenue for accessing green bond financing, such as under the Massachusetts green bond issuance.

6. Efforts to define "green" may hinder the growth of the market. Many conservation organizations are skeptical about green bonds because of the lack of an agreed-upon standard definition for what constitutes "green." This remains a concern for land conservation organizations who do not want to be seen as taking part in perceived "greenwashing" efforts.

Recommendations

The Way Forward for Land Conservation Organizations and Investors

In order for green bonds to bring new capital and new investors to finance a growing number of additional land conservation projects, land conservation organizations and investors should work together to promote and capitalize on the momentum in the market by:

1. Sharing best practices: All relevant stakeholders – from issuers to borrowers – should focus on sharing best practices related to green bonds for sustainable land use and conservation.

2. Articulating new revenue sources from land conservation: The land conservation community should continue to frame sustainable land use and conservation projects in terms of revenue streams, in order to help

investors and issuers see possible returns from projects.

3. Increasing land conservation related issuances and sharing success stories:

Currently there are few "success stories" which contributes to investors' concern that the model is untested and therefore risky. Land conservation organizations and issuers should work to issue more pilot green bond projects in partnership with philanthropies and government partners who can reduce risk by, for instance, providing backstopping. They should also encourage greater transparency in the use of bond proceeds. As the bonds come to maturity, the land conservation community should come together to share success stories both among themselves as well as with the broader investment community in order to spur further investment.

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Potential Investment Sweet Spots

In order to address the second and third points above, our research revealed two potential "sweet spots" for green bond issuances and land conservation projects: state-level issuances and connections to water management.

State-Level Issuances

Green bond issuances by states and municipalities are growing, from \$100M in 2013 up to \$2.5B in 2014. As illustrated by the

Massachusetts case study, green bond issuance at the state level represents a good opportunity for financing land conservation projects. First, state-level issuances are at an appropriate scale to fund smaller land conservation projects, from hundreds of thousands of dollars to several million dollars. Second, state issuances necessarily have government buy-in as the issuer is the state itself, which can translate into political support for funded projects. Third, green bond issuance at the state level can take advantage of the solid credit rating of the issuing state, providing confidence to potential investors while also generating tax advantages for investors who are residents of that state. Finally, state-level issuances can attract place-based investors such as foundations or family offices who have a particular interest in community development within a given geography.

Links to Watershed and Water/Stormwater Management

Land conservation can directly impact water treatment and water supply objectives, through mechanisms such as the protection of wetlands that provide storm effect mitigation, wastewater treatment and water supply filtration. As a result, land conservation organizations continue to work closely with water management organizations. The protection of water resources, especially drinking water supplies, consistently ranks at the top of voter priorities when it comes to supporting public ballot initiatives that provide taxpayer funds for land conservation. As a result, land conservation initiatives can benefit from links to water management priorities for both ecological and political reasons.

Stormwater management in particular is an increasing area of focus for many cities as they grapple with the effects of climate change, growing populations, and ageing infrastructure. Green bond financing could play a role in funding green infrastructure projects

for stormwater retention related to public spaces, conservation easements and conversion from impermeable to permeable surfaces. Proceeds from these bonds could finance land conservation in the form of upstream conservation easements to provide filtration and other ecosystem services, or in the form of downstream green infrastructure investments in cities and urban areas, particularly where stormwater management is a concern.

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Conclusion

The next few years will prove critical in determining whether or not green bonds will become a significant new tool for land conservation organizations. Land conservation organizations and issuers need to generate success stories and continue to build market momentum for this financing approach. In doing so, they can help build a meaningful new capital market that will be able to provide financial support for land conservation initiatives around the world.