

# LANDSCAPE BONDS

Their Role in Financing Sustainable Land Use  
and Territorial Development

By David Hecht, prepared for:



LANDSCAPES  
FOR 1 BILLION  
PEOPLE



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# ABOUT



**EcoAgriculture Partners** is a pioneering nonprofit organization that advances the practice of integrated landscape management and the policies to support it. The critical analysis of policies, markets, and land use practices generates innovative research, tools, and methodologies that help landscape managers and policymakers create and sustain integrated agricultural landscapes worldwide. EcoAgriculture Partners has served since 2011 as the global secretariat for the Landscapes for People, Food, and Nature initiative. EcoAgriculture founded and convenes the 1000 Landscapes for 1 Billion People initiative. Visit [ecoagriculture.org](http://ecoagriculture.org) for more information.



**1000 Landscapes for 1 Billion People (1000L)** was launched in 2019 to help accelerate local partnerships working toward economic, ecological, and social regeneration in their landscape. 1000L's global "radical collaboration" brings together diverse partners contributing deep expertise in landscape science and management; seasoned experience in the field; and innovators in information technology, networking models, remote training, and inclusive and green finance. 1000L is building the infrastructure to help landscape partnerships connect and ally with one another, strengthen their capacities and leadership, access digital data and tools for greater impact, and mobilize financing to scale landscape investment. See [www.landscapes.global](http://www.landscapes.global).



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# ABBREVIATIONS

<b>CBD</b>	Convention on Biological Diversity
<b>CIFOR</b>	Center for International Forestry Research
<b>ESG</b>	Environment, Social and Governance
<b>IFC</b>	International Finance Corporation
<b>ILIP</b>	Integrated Landscape Investment Portfolio
<b>ILM</b>	Integrated Landscape Management
<b>IUCN</b>	International Union for Conservation of Nature
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>NGO</b>	Non-government Organization
<b>PIU</b>	Project Implementation Unit
<b>SDGs</b>	UN 2030 Sustainable Development Goals
<b>SeyCCAT</b>	Seychelles Conservation and Climate Adaptation Trust
<b>UNCCD</b>	United Nations Convention to Combat Desertification
<b>SMEs</b>	Small and Medium Sized Enterprises
<b>UNDP</b>	United Nations Development Programme
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change





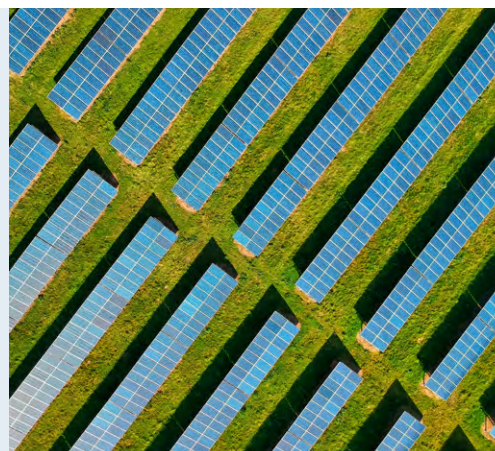
# EXECUTIVE SUMMARY

**This paper introduces the concept of a landscape bond, explains its importance, who might issue the bond, and likely investors.** The discussion highlights why a landscape bond's Integrated Landscape Management (ILM)<sup>1</sup> approach is uniquely positioned to address sustainability, biodiversity, and socioeconomic challenges. It explores how this instrument could serve those in the financial community, including investors seeking to address mandates, as well as landscape partnerships, national and regional governments, non-government organizations (NGOs), think tanks, and others interested in conservation finance.

**This paper also looks at the evolving incentives for issuers to issue a landscape bond, how the bond could work, and how it can attract investor interest and confidence.** The advantages of a landscape bond compared to other landscape financial instruments are also explained. The paper concludes by identifying the next steps to move the landscape bond concept forward.

## WHY IS A LANDSCAPE BOND NEEDED?

The green bond universe has dramatically grown over the past decade, bringing much-needed capital to sustainability-oriented projects and transitions. However, green bond issuance has primarily focused on individual sectors. **More than 80 percent of \$500 billion in green bonds issued in 2021 concentrated on just three sectors—energy, buildings, and transport.**<sup>2</sup>



Decades of research and experience have reinforced a core conclusion: interlinked challenges surrounding biodiversity, landscape restoration, sustainable food systems, and climate change adaptation do not lend themselves to easy solutions.<sup>3,4</sup> Accelerating climate change effects reflect ecosystems and ecological processes that are inherently dynamic, sector agnostic, and exhibit nonlinear patterns. Furthermore, local stakeholders play a crucial role in landscapes where adverse effects are most acute, and these groups often possess limited resources. Stakeholder engagement is a vital step to ensure they share in benefits and incentives.

1 ILM, as referenced in this paper, is generally synonymous with sustainable territorial (and seascape) development. Both integrated approaches focus on cross-sectoral, multi-stakeholder, and place-based impact.

2 Climate Bond Initiative. (2022). Sustainable Debt: Global State of the Market.

3 Meyfroidt, P., de Bremond, A., Ryan, C. M., Archer, E., Aspinall, R., Chhabra, A., ... & Zu Ermgassen, E. K. (2022). Ten facts about land systems for sustainability. *Proceedings of the National Academy of Sciences*, 119(7), e2109217118.

4 Pecl, G. T., Araújo, M. B., Bell, J. D., Blanchard, J., Bonebrake, T. C., Chen, I. C., ... & Williams, S. E. (2017). Biodiversity redistribution under climate change: Impacts on ecosystems and human well-being. *Science*, 355(6332), eaai9214.

**CONVENTIONAL GREEN BONDS** have successfully mobilized capital for projects supporting climate resilience and reduced greenhouse gas emissions. However, green bonds are not currently designed to address many systemic issues and externalities underlying nature-destructive practices, including the physical and transitional impacts of climate change. Engagement and collaboration with stakeholders in local landscapes have also been largely absent in green bonds. Furthermore, top-down guidelines and neatly compartmentalized taxonomies have contributed to a narrow use of green bond proceeds.

As a result, **green bonds have primarily funded siloed, sector-specific activities**. Single-sector approaches are generally insufficient to produce sustainable land use and territorial development that promotes resilience and help communities mitigate and adapt to climate change.

However, the general structure and strong interest in green bonds provide an opportunity to evolve landscape bonds designed to finance systemic place-based issues. The same necessity is recognized by peers wrestling with how to deliver systemic funding in urban settings, an undertaking with many parallels to landscape finance.<sup>5</sup> Fortunately, financial innovation transformed “green” bonds from merely a concept following a 2007 phone call from pension fund managers to the World Bank and started wheels in motion. **Landscape bonds could serve as the next financial innovation to combat climate change.**

**LANDSCAPE BONDS' ILM PRACTICES** are equipped to address the complexity and multisectoral aspects surrounding climate change, biodiversity, food security, and ecosystem restoration. The bonds would fund robust engagement with local stakeholders to coordinate activities and agree on objectives, in contrast with the sectoral investment orientation of conventional green bonds. The result of ILM-funded efforts is a landscape partnership that can reduce common risks and adopt adaptive and nimble responses while at the same time providing coordinated investment support.

**To achieve transformative and sustainable change for landscapes, restoration efforts must be coordinated and cooperative to accommodate multiple landscape-scale objectives while responsive to local communities.** This tall but critical challenge is one that landscape bonds, as proposed, seek to solve.

**THE INTEGRATED LANDSCAPE MANAGEMENT (ILM) APPROACH** lies at the core of a landscape bond. ILM involves collaboration among multiple stakeholders from multiple sectors to achieve sustainable and resilient landscapes, seascapes, and territories. The complexity and interconnectedness of nature-dependent systems, and human interaction with nature, require this integrated approach. Accordingly, a landscape bond would enable investors to fund transformative impact while achieving a competitive return.

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<sup>5</sup> Hofstetter, D. (2023). Systemic Funding Architecture: A Proposition to Catalyze Urban Climate Finance. <https://medium.com/transformation-capital/systemic-funding-architecture-7455332feed4>





## LANDSCAPE BONDS COULD SERVE AS THE NEXT FINANCIAL INNOVATION TO COMBAT CLIMATE CHANGE

**This paper also looks at how a landscape bond might operate:** who might issue, invest, and partner in a landscape bond; how to strengthen investment readiness and the ability to repay investors; and the roles of global and local actors seeking to solve challenges.

This paper is not intended to serve as a step-by-step guide on developing and issuing a landscape bond. Instead, the paper seeks to inform considerations for financial institutions, investment professionals, foundations, and other actors exploring how to effectively shift funding towards multi-sectoral and place-based impact.





# INTRODUCTION

The accelerating and increasingly manifest effects of biodiversity loss and climate change have attracted unprecedented global attention in recent years. Investors, corporations, agencies, governments, and landscape partnerships are among those concerned with understanding threats and consequences from ongoing land degradation and climate risks, including the effects on ecosystems and supply chains.<sup>6</sup> These effects also represent systemic risks to global financial stability.<sup>7</sup> Public pressure continues to mount for these global actors to demonstrate commitment and effectiveness regarding nature-positive and climate-aligned practices.

As a result, the past 15 years of green finance have looked different from the past as the finance sector and the global community explores how they can deliver solutions to these complex challenges. Green, social, and sustainability-linked bonds lead a growing and well-intended series of green investment products gaining traction as entities look to fund solutions to deforestation and climate change. The universe of green debt securities has expanded exponentially from the first green bond issued in 2007 by the European Investment Bank, with ten consecutive years of growth culminating in the issuance of more than one trillion dollars in 2021.<sup>1</sup> At the same time, local landscape partnerships and conservation organizations on the front lines of land degradation are exploring how to best engage investors based on important, yet often overlooked, projects.

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<sup>6</sup> Much of the landscape discussion applies to seascapes, including marine and coastal areas.

<sup>7</sup> Bolton, P., Despres, M., Da Silva, L. A. P., Samama, F., & Svartzman, R. (2020). *The green swan*. Bank for International Settlements (BIS) Books.



As the green bond universe evolves, investors continue to deepen scrutiny of green investment impact and performance, seeking transformation. Increasing appreciation of three themes from landmark ecology papers over the past decade—connectivity and interlinkages, complexity, and cascading effects—has not gone unnoticed.<sup>8</sup>

In response to these challenges, many international and national agencies have championed ILM for its transformative impact. The ILM approach that would guide landscape bonds has been endorsed by the UN’s High-Level Political Forum on Sustainable Development Goals (SDGs), the Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC), United Nations Convention to Combat Desertification (UNCCD), and the Intergovernmental Panel on Climate Change (IPCC) as an implementation method to achieve the SDGs, as well as climate, biodiversity and sustainable land management goals.

ILM targets synergies and impacts at scale by explicitly addressing trade-offs and synergies among stakeholders and between different parts of the landscape, benefiting from a cross-sectoral lens. The complexity and interconnectedness of nature-dependent systems, climate change impacts, and human interaction with nature require integrated management and a locally adapted response.

**A landscape bond would enable funding of the ILM approach to address critical ecological, economic, and social processes and governance**

<sup>8</sup> University of Cambridge Institute for Sustainability Leadership (CISL). (2022). *Integrating climate and nature: the rationale for financial institutions*. Cambridge, UK: University of Cambridge Institute for Sustainability Leadership.



**GREEN BONDS** are debt instruments intended to promote nature-positive practices, enable the conservation of resources, and reverse nature-destructive practices. Multilateral organizations, national/regional governments and agencies, and corporations have been prolific issuers of green bonds in recent years.

**A LANDSCAPE** is an interconnected, socio-ecological system influenced by distinct ecological, historical, economic, and socio-cultural processes and activities. In contrast, conventional green bonds largely fund regenerative yet siloed work on a national or large regional level; this scale generally does not accommodate the distinct needs of each local landscape and its stakeholders. ILM, through a landscape bond, enables us to align funding with the most effective scale—landscape-level.

**INTEGRATED LANDSCAPE MANAGEMENT (ILM)** is a way of managing the landscape that involves collaboration among multiple stakeholders from multiple sectors to achieve sustainable and resilient landscapes.

**and land tenure issues that impede progress; these processes and issues are typically overlooked in green bonds.** To tackle these challenges and deliver benefits for both people and nature, a landscape bond would specify (in its bond framework or covenant) its integrated strategy for landscape-wide transformation, engagement of a diverse set of stakeholders, approach for enabling environment and governance to support the transformation strategy, and use of feedback loops to evaluate effectiveness. These elements have largely been absent in green bonds to date, which focus on investing in specific sector-specific outcomes without understanding their interconnections.

**Local landscape partnerships represent a key component of a landscape bond;** these partnerships ensure bond proceeds fully understand and address local stakeholders' needs, including Indigenous communities. Landscape partnership engagement enables locally defined visions of transformation, engaging the public, private sectors, and civil society. Conventional green bonds that only involve select stakeholders will likely fail to achieve SDGs when they limit themselves to one sector, exclude place-specific considerations due to a broad regional focus, and seek partial solutions. In this context, local landscape partnerships could function as a de-risking element.

A landscape bond's attention to local stakeholder needs and coordination (technical assistance, funding the transition of agricultural practices) is unique. Governance and land tenure advocacy, training, and policy action are also often required for transformative change.



### **HOW THE INTEGRATED APPROACH FUNDED BY A LANDSCAPE BOND BENEFITS ECOLOGICAL PROCESSES**

A landscape partnership may look at a watershed's full hydrological cycle and seek to introduce practices that strengthen the resilience of all watershed elements. A critical tenet of watershed management is that all spatial locations and temporal scales must be weighed in decision-making. Will endangered species such as salmon depend on migration corridors to reach different habitats in a watershed? How can actors best respond if there are changes in dissolved oxygen dynamics or autotroph composition in a watershed? Have local stakeholders noticed new developments not reflected in performance metrics that need attention?

### **THE GREEN BOND FRAMEWORK**

**DOCUMENT** specifies the green characteristics of the bond to be issued, the processes that the issuer will follow in evaluating and selecting eligible projects, and the reporting commitments of the issuer towards investors.<sup>11</sup>



For these reasons, engagement with a diverse group of stakeholders in a landscape allows a landscape partnership to identify and coordinate the most important needs and prioritize the spatial and temporal sequencing required. For example, this integrated approach looks upstream for environmentally responsible designs and closely weighs decisions by considering systemic interactions and projected impacts.

**Processes drive ecosystem resilience, and a landscape bond's integrated management approach is attentive to underlying processes.** A landscape bond puts in place a coordinated landscape or waterscape management plan—and engages stakeholders—who are attentive to these changes and adopt a system-level perspective. These same core ecological processes generally evade attention from conventional, sector-focused green bonds, such as those focused on managing point source pollution.

This paper explores the need for landscape bonds, who might issue and who might invest, the benefits and challenges, and what the first landscape bonds might look like. Details on the mechanics of issuing a green bond (green bond framework, underwriters, other technical aspects) would require a different paper.



**A LANDSCAPE BOND  
PUTS IN PLACE  
A COORDINATED  
LANDSCAPE OR  
WATERSCAPE  
MANAGEMENT PLAN**



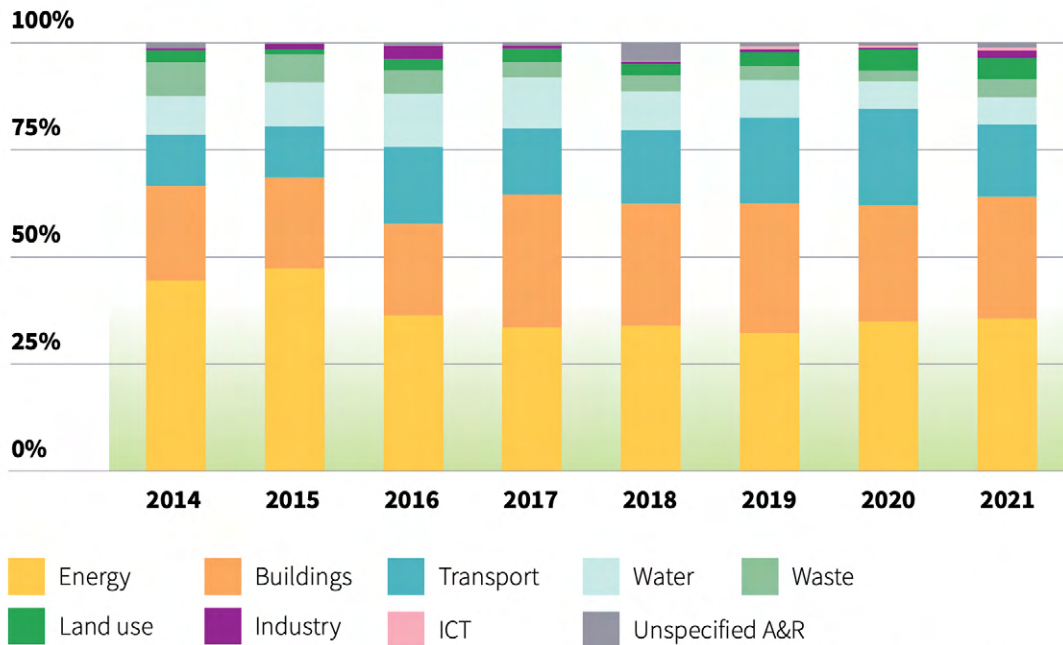
## 2. THE CURRENT STATE OF GREEN BONDS

Green bonds have played an invaluable role as a mechanism for institutions eager to fund interventions and approaches addressing ecological degradation. The green bond universe has grown dramatically, with issuance rising by more than 50% annually over the five years ending 2021 and surpassing \$1 trillion USD in 2021.<sup>9</sup> These conventional green bonds are debt instruments intended to promote climate change mitigation and adaptation, nature-positive practices, enable conservation of resources, and reverse nature-destructive practices.

However, green bond issuance has largely been 1) a function of what projects are most investment ready (based on existing revenue sources and visibility) and 2) designed to align with one of the high-level objectives of the Green Bond Principles.<sup>10</sup> Green bond objectives are often tied to guidelines from the UN SDGs and the Paris Agreement, among other standards.

**As a result, green bond issuance has primarily focused on a handful of sectors, those generating the highest revenues—in essence, the most readily investable areas. Energy, buildings, and transport accounted for more than 80% of the use of proceeds for green bonds in 2021 (see Figure 1).**

**FIGURE 1: GREEN BOND USE OF PROCEEDS, BY SECTOR<sup>6</sup>**



Source: Climate Bonds Initiative

<sup>9</sup> Climate Bond Initiative. (2022). Sustainable Debt: Global State of the Market.

<sup>10</sup> The five high level environmental objectives of the GBP are climate change mitigation, climate change adaptation, natural resource conservation, biodiversity conservation, and pollution prevention and control.



**ENERGY, BUILDINGS,  
AND TRANSPORT  
ACCOUNTED FOR MORE  
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OF PROCEEDS FOR  
GREEN BONDS IN 2021**

In addition, taxonomies for green bonds delineate sectoral goals and negative covenants. On a community level, conventional green bonds generally engage only a small subset of stakeholders, such as national governments and large companies, in the locations where interventions are directed. The result is often a siloed investment with limited impact.

Conversely, research and experience repeatedly demonstrated that **climate change effects and consequences traverse nearly all sectors, populations, regions, and habitats, with projections for these cross-sectoral impacts to potentially accelerate.** Furthermore, there is increasing recognition that local stakeholders with the fewest resources are disproportionately affected by degradation in landscapes and other local stressors, particularly in developing countries.

**Investment solutions must transcend the same boundaries as the challenges they seek to address.** Landscape bonds would account for the complexity and interconnectedness of ecosystem functions, ecological and sociological processes, and local needs.



Imperiled landscapes defy the compartmentalization that typically guides green bonds and the agencies and authorities seeking to address systemic issues.<sup>2</sup> A potent synopsis of interlinkages of climate change-related effects can be found in a 2022 paper authored by more than 50 scientists across different fields and countries.<sup>11</sup>

**Synthesizing learnings over decades from the land sustainability field, these scientists identified core insights about land use and sustainability issues, including:**

- Contextual and adaptive solutions have demonstrated success, in contrast to silver bullets or one-size-fits-all panaceas.
- Trade-offs are inherent. Prioritizing a single goal will severely impact other functions if trade-offs are not explicitly taken into account.
- Land-use interventions are likely to reinforce or reproduce current inequalities without explicit consideration of inequality.

These tenets are well reflected in the ILM approach, which would guide landscape bonds. In contrast, the **ICMA Green Bond Principles**, adopted by 95% of green bond issuers,<sup>12</sup> make little or no mention of adaptive management, inequality, integrated strategy, coordination, and other core concepts that underpin integrated landscape management.<sup>13</sup> For green bonds to deliver the nature-positive benefits they seek to achieve, the bond prospectuses and deployment of bond proceeds seem best served (where applicable) to incorporate valuable guidance from the scientific community and practitioners.

For these reasons, the global community would be well served to distinguish between conventional green bonds and landscape bonds that would seek to achieve systematic benefits. **From an investor perspective, failure to address landscape needs on an integrated/multi-sectoral level may increase investment risk due to:**

1. Higher vulnerability to cascading ecological effects.
2. Lack of full engagement with all stakeholders.
3. Not addressing constraining elements such as governance, land tenure, training, and policy action.

Please see Table 1 for a comparative look at how green bonds and proposed landscape bonds differ in core approach, engaging actors, and targeted outcomes.

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11 Meyfroidt, P., de Bremond, A., Ryan, C. M., Archer, E., Aspinall, R., Chhabra, A., ... & Zu Ermgassen, E. K. (2022). Ten facts about land systems for sustainability. *Proceedings of the National Academy of Sciences*, 119(7), e2109217118.

12 International Finance Corporation. (2020). *Green Bond Handbook: A Step-by-Step Guide to Issuing a Green Bond*.

13 International Capital Markets Association (ICMA). (2022). *Green Bond Principles: Voluntary Process Guidelines for Issuing Green Bonds June 2021 (with June 2022 Appendix)*.

**TABLE 1: COMPARING A LANDSCAPE BOND TO A CONVENTIONAL GREEN BOND**

	LANDSCAPE BOND (PROPOSED)	CONVENTIONAL GREEN BOND
Approach	Systems-level, place-based and coordinated response	Fragmented, often commodity-oriented
Sectoral impact	Multiple sectors, and seeks ecological and economic synergies across sectors	Typically one sector
Stakeholder/local landscape partnership engagement	Proactive, inclusive	Often limited or unaddressed
Local adaptability	Adapted to local needs (land tenure, training, governance, and policy action)	Often not adaptable due to large bond size
Local human health and well-being objectives	Addressed through stakeholder engagement and negotiated consensus through multi-level governance	Usually not part of green bond objectives
Accounts for externalities	Through analysis of landscape needs and engagement with key stakeholders	Not prioritized
Area targeted (scale)	Landscape-level (the interconnected, socio-ecological system, as defined in the introduction)	Large land regions or marine areas; broad scale, reflecting large deal size
Resources for local stakeholders	Capacity strengthening, training, technical assistance, cooperation on governance issues	Not included if not required for the primary objective
Maturity	10-20 years	As short as 3-5 years
Funding mechanism utility	Delivers capital to coordinated projects developed by landscape partnerships through an Integrated Landscape Investment Portfolio (ILIP) <sup>14</sup> (including micro-, small, and medium-sized enterprises and projects)	Capital is typically limited to larger enterprises or government agencies

Although the current universe of green bonds is a step in the right direction, research and experience have unequivocally documented how ecosystems and the landscapes in which they reside are anything but compartmentalized or unconnected – as are the critical challenges they face.

A coordinated and systemic solution is required to address the multi-faceted effects of ecological degradation. Neither the complex challenges nor the required solutions fit neatly into one SDG or any top-down category. Solutions and needed resources often vary meaningfully across different landscapes.

<sup>14</sup> An ILIP encompasses the set of investments that collectively contribute to multiple landscape-scale objectives agreed upon by key stakeholders.

# 3. INVESTOR BENEFITS OF AN INTEGRATED LANDSCAPE MANAGEMENT APPROACH

ILM's emphasis on collaborative, participatory, community-led decision-making is why the approach has significantly grown in importance as a solution for climate change and is resonating with investors, United Nations agencies, and NGOs.

**Recognizing and addressing interlinked challenges through a holistic approach while staying responsive to local conditions is at the heart of ILM.** One region or watershed may fall under the management of half a dozen resource and regulatory agencies, each with its own priority and focus. In addition, local businesses, farmers, and other stakeholders may have competing and often-short term interests inconsistent with each other.

It is important to differentiate between the benefits of an ILM-led investment, such as a landscape bond, and a green investment that lacks ILM, multi-stakeholder involvement, coordination, and a systems perspective. An ILM approach seeks to deliver synergistic benefits, including reducing common risks, catalyzing the transition to more sustainable management practices, coordinated investment oversight, and funding ecological and social benefits.

**ILM may reduce investment risk through:**

- A diversified and well-constructed portfolio of projects
- Alignment with a comprehensive, long-term landscape strategy
- Clear definitions and goals that greatly reduce the risk of greenwashing
- A coordinated effort between actors to support the adoption and implementation
- Funding landscape partnerships across different countries, regional areas, and actors provide a source of diversification.

For example, investors and other actors interested in prioritizing biodiversity will appreciate ILM's objective to develop resilient or sustainable landscapes (or water- or seascapes) that can sustain 1) critical ecological functions, 2) native biodiversity, and 3) more beneficial human interactions over time, despite multiple stressors and uncertainty. Such landscapes support local biodiversity and enable communities and nations to meet sustainable development principles as defined by the UN 2030 Sustainable Development Goals.



## THE INTEGRATED LANDSCAPE INVESTMENT PORTFOLIO CONCEPT

An integrated landscape investment portfolio (ILIP) helps identify and detail investments and finance needs required for a landscape, what timelines are required, and what mechanisms best serve these needs. An ILIP encompasses the investments that collectively contribute to multiple landscape-scale objectives agreed upon by key stakeholders. A landscape bond serves as a key tool in this larger process by providing funding for essential projects and serving the place-based needs of the landscape or territory.

However, landscape projects and activities vary in terms of revenue generation and timing of revenues. Landscape bonds serve as a finance mechanism best suited for certain stages and projects and accommodating different investor risk appetites.

By packaging together lower-return projects with more commercially appealing ones, a **landscape portfolio can attract a wider range of investors and accommodate different risk-return appetites and objectives** (i.e., triple-bottom-line investors may prioritize returns or socioecological outcomes). For example, a landscape portfolio may couple commercially appealing projects or investments with more nascent yet essential activities (i.e., funding training or securing land tenure) to produce a more diversified whole that combines funding sources with different risk tolerances.

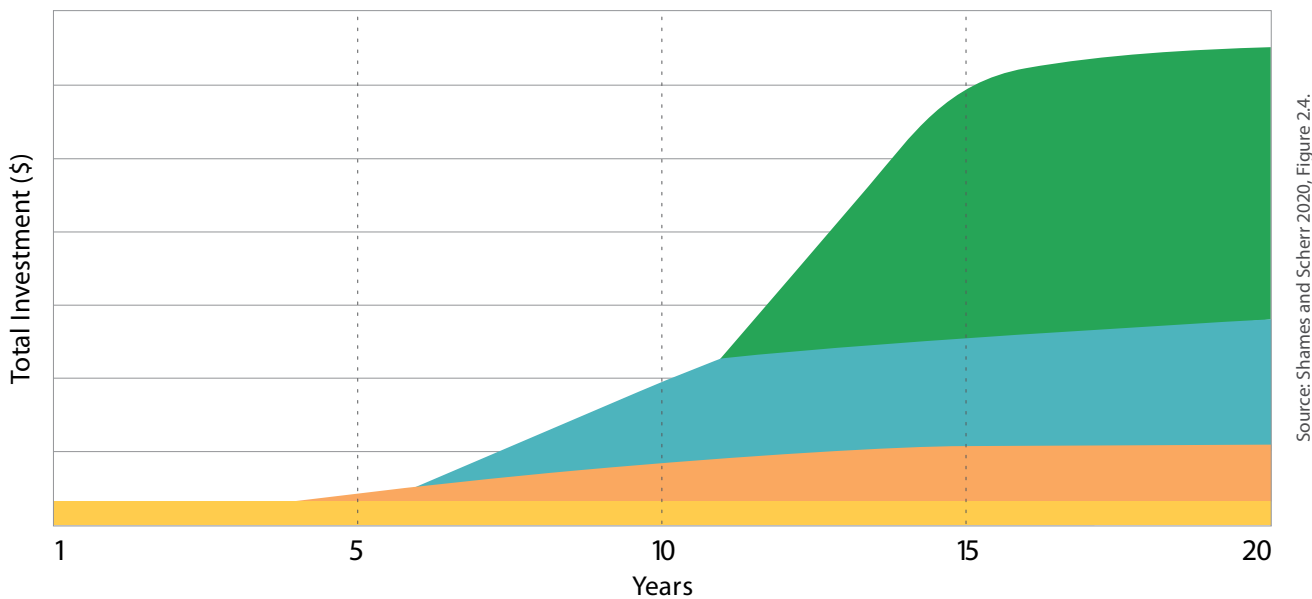


**RECOGNIZING AND ADDRESSING INTERLINKED CHALLENGES THROUGH A HOLISTIC APPROACH WHILE STAYING RESPONSIVE TO LOCAL CONDITIONS IS AT THE HEART OF ILM**

The result is that an ILIP translates ILM objectives for a place into investment opportunities (with different profiles) that need to be funded together to ensure long-term functionality and sustainability. By addressing shared problems or creating opportunities, landscape bonds can reduce trade-offs and strengthen synergies for landscape objectives, bolstering their appeal to investors cognizant of system-level challenges. The global community, including issuers and investors, benefits from how ILIP recognizes—and addresses—the challenge of delivering capital to coordinated and systemic-focused projects.

A landscape bond can play a pivotal role in funding the ILIP, building on the formative work of enabling and concessional investments to help local landscape enterprises mature in long-term, sustainable businesses (please see Figure 2) by leveraging cash flows from larger projects that are more investable (i.e., infrastructure, energy, transport, etc.). Compared to other components of an ILIP, a landscape bond provides funding over a longer—and more aligned—time frame.

**FIGURE 2: EVOLUTION OF LANDSCAPE INVESTMENT AND FINANCING OVER TIME**



#### LANDSCAPE PARTNERSHIP SUPPORT

- Public, philanthropic, and partner grants to support collaborative planning and action

#### SMALL & SHORT-TERM FINANCING

- Loans from local sources, including community banks and local governments
- Short-term development finance investment
- Small-scale business and collaborative development

#### LARGER & LONGER-TERM FINANCING

- Loans and equity investments in growing local businesses
- Longer-term development finance institution projects

#### LANDSCAPE FINANCE MAINSTREAMED

- Debt and equity investments in more mature businesses
- Comprehensive, integrated programs of public investment





## 4. A WIDER LOOK AT WHAT A LANDSCAPE BOND CAN ACCOMPLISH

A landscape bond connected to an ILIP seeks to fund a diverse list of important objectives and activities that have largely fallen outside of conventional green bonds. These objectives may include:

4. Build and empower local landscape partnerships
5. Initiate or expand local stakeholder engagement
6. Encourage longer-term objectives aligned to ecosystem function or social processes
7. Deliver training and technical assistance to farmers and cooperatives
8. Strengthen governance arrangements and advocacy (an often-overlooked need)
9. Establish new institutions that facilitate cooperative economic activity among stakeholders (e.g., by aggregating sales by many smallholder farmers or establishing community savings and loans)
10. Generate synergies among investments in a landscape and reduce risk dependencies
11. Ensure multigenerational sustainability
12. Improve human wellbeing
13. Adapt to physical climate change impacts.

**These objectives are frequently interconnected.** For example, a landscape bond seeks not only nature-positive benefits, including restoring ecosystem health but also to enhance local (often rural) livelihoods and sustainable economic development. The use of proceeds for landscape bonds would empower an adaptive management approach that is responsive to the dynamic and constantly changing aspect of nature and to the diverse needs of multiple stakeholders.



## 5. THE LANDSCAPE BOND

### 5.1. WHO WOULD ISSUE LANDSCAPE BONDS?

Incentive and implementation capability help determine which bodies would issue landscape bonds. Which organizations can absorb the bond proceeds? Who can effectively disperse these proceeds? And finally, who has the capacity to deliver these functions in a manner responsive to stakeholder needs?

ILM is a potent tool for potential sovereign and regional issuers who possess these financial resources and are seeking to reconcile competing environmental, social, and economic objectives. National and regional governments are seeking ways to finance solutions in an institutionalized manner to meet the growing needs of vulnerable communities exacerbated by climate change impacts. Funding projects and activities that constrain future restoration or recovery costs is a potent motivator for issuing a landscape bond.

In developing countries, sovereign issuance of a landscape bond could build on the robust growth of sovereign green bonds over the past decade.<sup>15</sup> This momentum aligns with calls for governments to play a more important role in mobilizing financial resources for local partnerships, including creating

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<sup>15</sup> Amundi Asset Management and International Finance Corporation. (2022) Riding the Green Wave: Emerging Market Green Bonds Report 2021.



financial mechanisms and aggregating landscape project pipelines.<sup>16</sup> Sovereign green bond issuance has appealed to developing countries seeking to expand their investor base, given investor demand.

**NGOs, development banks, and foundations are among other actors incentivized to support the issuance of a landscape bond.** Government policies and action plans often depend on adoption at the landscape level to ensure sustainable practices take hold. In addition, relationships need to be developed between landowners and farmers, local businesses, larger corporations with supply chain exposure to a landscape, local utilities, and government agencies. As a result, NGOs and other enabling organizations are candidates for bond issuance.

Investors also scrutinize an issuer's ability to repay, require a credit rating or repayment guarantee, and seek confidence that other revenue streams (outside of landscape partnership activities) are available to cover coupon payments; a national, supranational, or regional issuer may be best suited to assure investors, as they receive multiple revenue streams. From an operational perspective, government support at both the national and regional levels is vital to ensure cross-agency coordination and supportive policy to empower local landscape partnerships.

Research has found that even more resourceful local landscape partnerships have leaders and members stretched by many responsibilities; leaders may also not have advanced financial knowledge regarding debt issuance.<sup>17</sup> Instead, bond preparation, financial coordination, and scale require the resources and creditworthiness that sovereign and regional governments possess.



**NATIONAL AND REGIONAL GOVERNMENTS ARE SEEKING WAYS TO FINANCE SOLUTIONS IN AN INSTITUTIONALIZED MANNER TO MEET THE GROWING NEEDS OF VULNERABLE COMMUNITIES EXACERBATED BY CLIMATE CHANGE IMPACTS**

As transparency in supply chains grows, corporations and utilities with meaningful footprints in regional landscapes might also have an interest in issuing a landscape bond, particularly as the deal size grows over time. For example, American multinational food company Mondelez, Mexican multinational beverage company Fomento Economico Mexicano (FEMSA), South African water utility Rand Water, and Fortress Real Estate Investment Trust (based in South Africa) were prominent corporate issuers of green bonds in 2021.<sup>9</sup>

<sup>16</sup> Scherr, S.J., J. Ramos, S. Shames, L. Buck, B.H. Sethi, R. DeFries. (2022.) Public Policy to Support Landscape and Seascape Partnerships: Meeting Sustainable Development Goals through Collaborative Territorial Action. Washington, D.C., USA: EcoAgriculture Partners, GALLOP initiative, Cornell University and Columbia University.

<sup>17</sup> Heiner, K., S. Shames, and E. Spiegel, E. (2016). Integrated Landscape Investment in Kenya: The State of the Policy Environment and Financing Innovations. Washington, DC: EcoAgriculture Partners.

## 5.2. WHO WOULD PURCHASE LANDSCAPE BONDS?

A landscape bond's multiple outcomes enable investors to target different interventions<sup>18</sup> and appeal to investors who balance financial returns with environmental and social ones.

The first landscape bonds might appeal most to **impact investors and foundations** (potentially through program-related investments)<sup>19</sup> and others who may balance risk-adjusted financial returns with environmental and socioeconomic benefits. These investors have demonstrated heightened interest in new financial instruments that recognize and address ecological, economic, and social processes, as suggested by participation in the 2018 Seychelles Blue Bond. A few global asset managers also invested in the pioneering bond.<sup>20</sup> Niche institutional investors purchased IFC's first green bond in 2010 through private placement.<sup>21</sup>

**Developing diagnostic tools and collecting data** that demonstrate landscape revenue streams and/or issuer financial resources can confidently cover coupon payments can meaningfully deepen the pool of potential investors for a landscape bond. Investors demand assurance on a bond issuer's ability and willingness to cover coupon payments, which are primarily tied to revenues and the creditworthiness of the issuing entity.

The combination of more robust data, a wider pool of investors, and the success of initial landscape bonds can lead to larger issuance sizes. As investors become more confident in revenues and repayment, one might anticipate growing interest from **endowments, sovereign wealth funds, global asset managers, insurance companies, and banks**. Investor comfort with landscape bonds may be strengthened by 1) landscape assessment data that is robust and persuasive and 2) a track record established over time.

## 5.3. WHICH BANKING INDUSTRY ACTORS WOULD PARTNER ON LANDSCAPE BONDS?

Initial landscape bonds would be characterized by small issuance size and rely on managing transaction costs. Both elements may hinder global banker engagement in landscape bond issuance. Therefore, incentives may be needed to entice the investment banking industry to participate in issuance.

**Regarding issuance size**, one promising sign is that select global banking firms have engaged in smaller green and outcome-focused bonds. Standard Chartered and BNY Mellon served in a banking capacity (as placement agents or bond trustees) for a series of Women's Livelihood Bonds™,

18 IUCN. (2018). Green Bonds and Integrated Landscape Management.

19 The U.S. Internal Revenue Service defines program-related investments as those 1) with a primary purpose to accomplish a foundation's purpose, and 2) where real estate appreciation or income generation is not a significant purpose.

20 Nuveen (a subsidiary of TIAA-CREF) and Prudential Investments were purchasers of the Seychelles Blue Bond. Impact investors and DFIs were identified as likely investors of the Rural Prosperity Bond by The World Resource Institute.

21 International Finance Corporation. (2020). Green bond impact report: financial year 2020.



A photograph showing four people in a forest setting, engaged in a cleanup activity. They are wearing white caps and gloves, and are gathered around a pile of discarded plastic bottles and other debris on the ground. One person is standing and looking at a document, while the others are crouching and sorting through the trash. The background consists of tall, thin trees in a wooded area.

**NGOS, DEVELOPMENT BANKS,  
AND FOUNDATIONS ARE AMONG  
OTHER ACTORS INCENTIVIZED  
TO SUPPORT THE ISSUANCE OF  
A LANDSCAPE BOND**

all of which were \$50 million or less in issuance size, as well as the Seychelles Blue Bond. Another pioneer has been YES Bank, a large bank in India, which has issued a number of smaller-sized green infrastructure bonds, many of which were sold through private placement.

**Regarding bond transaction costs**, foundations and philanthropies can play an important function in solving the challenge. For example, the Rockefeller Foundation covered this expense in the Seychelles Blue Bond. Support from enabling actors to handle transaction costs might be invaluable until the issuance size of landscape bonds evolves to higher amounts better suited to absorb this expense.

**Improving demand for landscape-oriented investments** (resulting from new regulatory, legislative, or guideline criteria) may also catalyze investment banking participation. Institutional investors have increasingly adopted green or sustainable investment guidelines. In addition, new regulations, such as the Alternative Investment Fund Managers Directive in Europe, could serve as a tailwind for landscape bond demand.<sup>22</sup> Existing and new legislation could also provide support. For example, Regulation D of the Securities Act of 1933 in the U.S. permits a more cost-effective and truncated underwriting process for bonds intended for a small set of accredited investors.

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22 Doran, M., & Tanner, J. (2019). Critical challenges facing the green bond market. *International Financial Law Review*, 10-11.



## WHY FOCUS ON A LANDSCAPE BOND INSTEAD OF CONVENTIONAL LOANS, GOVERNMENT EXPENDITURES, OR EQUITIES?

Conventional green loans are typically much smaller in size than bonds, are often more project-specific, and often focus on private enterprises.<sup>23</sup> Furthermore, loans often focus on adapting corporate supply chains or practices, representing a small subset of all ILM and landscape-level needs. Loans are also more compatible with individual sector or project endeavors.

Government expenditures also have limitations. Green adaptation and sustainability projects are already expected to weigh on government fiscal budgets in the medium- and long-term, particularly in developing nations.<sup>24</sup> Taxes and subsidies cannot be relied on to generate the extensive need for nature-positive intervention and dealing with climate change effects.

Equity investors seek capital appreciation, which makes stocks largely untenable for a landscape. Furthermore, most ILM programs lack the size, revenue, and capital to cover transactional and reporting costs that accompany public equity issuance.

Bonds, in contrast, are well-suited for longer-term projects where investment is needed before healthy revenue streams arise. A bond also attracts a broader group of investors. Tax policy can also incentivize landscape bond issuance. Finally, the growing demand for green bonds serves as a tailwind for issuers, with demand often substantially outstripping supply. A bond provides an opportunity for the issuer to benefit from the “greenium,” the favorable spread in cost of funding frequently observed between green and conventional bonds.

<sup>23</sup> <https://www.worldbank.org/en/news/feature/2021/10/04/what-you-need-to-know-about-green-loans>

<sup>24</sup> Baur, M., Bruchez, P. A., & Nicol, S. (2021). Climate change and long-term fiscal sustainability, Scoping Paper for the OECD Paris Collaborative on Green Budgeting.





## 6. HOW A LANDSCAPE BOND WOULD DIFFER FROM A GREEN BOND

Green bonds typically fund sizable yet siloed activity centered around one sector. Conversely, a landscape bond's use of proceeds<sup>25</sup> would enable adaptive management and coordination, a vital strategy for navigating landscape management challenges and guiding monitoring, evaluating, and learning.

While conventional green bonds are typically too large or sectorally focused to engage on the landscape level, landscape partnerships would play a fundamental role in landscape bonds. These local partnerships are essential for stakeholder engagement, understanding who decisions might affect, which activities can be most effective, and understanding the local context. Fortunately, a landscape bond's ILM approach offers cross-sectoral flexibility to fund a wide range of activities and objectives supporting landscape-specific needs.

Landscape bonds would also differ from green bonds in the breadth of funded projects. **To ensure sustainability and stewardship, it's important that a landscape bond fund not only restoration and conservation activities (including agriculture, transport, energy, and infrastructure) but also activities latently linked to restoration and conservation**, including strengthening resources for stakeholders in landscape partnerships. Governance and land tenure issues may need to be resolved. Technical assistance, feasibility studies, and coordination are often prerequisites to realizing project synergies. These bottom-up elements are largely absent in sector-focused green bonds but represent a key element of a landscape bond.

A landscape bond drives investment to address the essential needs outlined in the last two paragraphs by bundling more profitable landscape projects (such as the provision of ecosystem services or agricultural crops) with less profitable ones. A landscape bond would fund a more extensive collection of activities by coupling more investable projects in a landscape with transformative ones that may generate little or no direct revenues. Please see Figure 3a.



**LANDSCAPE PARTNERSHIPS  
WOULD PLAY A FUNDAMENTAL  
ROLE IN LANDSCAPE BONDS**

<sup>25</sup> A landscape bond would be issued as a "Use of Proceeds" bond due to its multisectoral nature and its inclusion of enabling-oriented needs. While conventional green bonds have also been issued as green revenue bonds, green project bonds and green securitized bonds, most green bonds issued are use of proceeds bonds. Source: International Finance Corporation. (2020). Green Bond Handbook: A Step-by-Step Guide to Issuing a Green Bond.

### FIGURE 3A: REVENUE SOURCES BY STAGE FOR A HYPOTHETICAL LANDSCAPE BOND



#### EARLY REVENUE SOURCES | WITHIN 1-3 YEARS

- Timber
- Carbon credits
- Landscape bonds
- Other ecosystem services



#### MID-LONG TERM REVENUE SOURCES | WITHIN 5-10 YEARS

- Farm irrigation infrastructure
- Commodity processing facility
- Farmer training in regenerative agriculture
- Crop diversification
- Renewable energy (i.e. carbon capture processing facilities)
- Realized savings from reduced fertilizer inputs
- Landscape product premiums (certified responsible)



#### NON-REVENUE SOURCES | RISK REDUCTION

- Spatial assessment (hydrology, biodiversity)
- Facilitation and coordination to catalyze synergies
- Essential governance/land tenure advocacy
- Education and health care resources

A bottom-up, landscape-level approach provides more incentive for the bond to fund non-revenue generating activities that are often essential for overall landscape success. For example, a landscape bond may complement enabling investments, or contribute to, incubation and business design for local landscape businesses—these activities create important green shoots in the transition to a regenerative economy and increase investability for projects over time.

Conventional green bonds, with a narrower set of objectives and stakeholders, are not designed to take on these challenges due to the current market structure. The IUCN notes that conventional green bonds are not compatible with projects at early investment stages.<sup>3</sup> A landscape bond fills this void by 1) appealing to concession-willing investors that value system-level and community benefits, such as impact investors and foundations, and 2) defining bond objectives by the outcome on a landscape- or system-level.





An ILM-guided landscape partnership in Fiji provides an example of how a landscape bond could mobilize resources with a systematic approach coordinated through a landscape partnership.

Another difference between conventional green and landscape bonds lies in attentiveness to tradeoffs, both across sectors and across stakeholders. Weighing trade-offs is woven into the DNA of integrated management and ecological restoration decisions (as well as investment decisions). Trade-off considerations that fall outside one sector are often absent in green bonds.

Finally, sequential and spatial organization, including engaging stakeholders on courses of action, stand out as key management considerations for the landscape-level scale and bottom-up approach followed by landscape practices. These critical elements are woven through integrated land management and would be strategically addressed in a landscape bond.

## AN EXAMPLE FROM FIJI

A forward-thinking landscape partnership/private sector collaboration in Fiji demonstrates how critical needs in a landscape often fall outside traditional restoration projects.

Green business development in one region of Fiji was hampered by poor waste and pollution management resources resulting from no landfill or recycling facility. This void forced responsible enterprises to ship waste off the island, an expensive and unsustainable practice. As a result, exorbitant waste disposal costs were deterring investment into existing and proposed SMEs. Furthermore, poor waste and pollution management was one of four stressors of the local coral reef health (along with agricultural fertilizer runoff, deforestation, and overfishing).

Fortunately, a local landscape partnered with the private sector partnership Matantaki. The collaboration identified and addressed this critical need by funding the development of a sanitary landfill and a recycling facility.<sup>26</sup> Investment in regional SMEs has meaningfully risen as a result. A conventional, siloed green bond would not likely identify or fund supportive elements outside a targeted sector.

<sup>26</sup> <https://www.ennovent.com/matanataki-a-partnership-to-catalyse-regenerative-businesses-in-fiji/>

# 7. CHALLENGES TO INTRODUCING LANDSCAPE BONDS

## 7.1. AN OVERVIEW OF CHALLENGES

The transformative, multisectoral outcomes sought by a landscape bond are not low-hanging fruit. One central challenge results from the bond's focus on what is most needed on a local level (i.e., restoring degraded lands, resolving land tenure issues, transforming food systems, delivering needed socioeconomic reforms), not what is most investable. This represents a core difference between landscape and conventional green bonds.

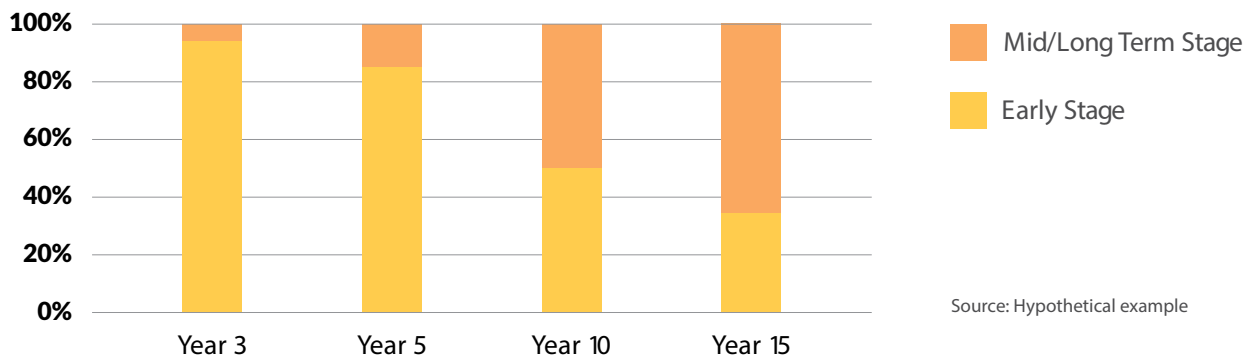
A survey of the key challenges specific to a landscape bond follows, along with a brief look at potential solutions and innovations. A more extensive exploration of solutions would merit its own paper and could fully dive into bond frameworks, covenants, use of proceeds, and risk guarantees.

### Time Horizon

Landscape investment readiness depends on sources of long-term, enabling funding. Many nature-positive activities and projects have uncertain cash flows in the early stages, including those connected to transitioning to regenerative agriculture, coordination, planning, and providing training to landscape actors. As a result, a landscape bond's tenor of 10-20 years may not appeal to investors with short time windows (often three-to-five years or less), including commercial banks, microfinance lenders, and agribusinesses. Many funding sources are relatively short-term and often ad hoc.

To address this challenge, a landscape bond could build portfolios that bundle projects with high-, medium-, and low-cash flows and balance early and late revenue generation. (Please see Figure 3b). In addition, as landscape partnerships strengthen reporting and impact assessment resources, the business case for a longer time window is more transparent.

**FIGURE 3B: REVENUE SOURCE CONTRIBUTION EVOLVES OVER LANDSCAPE BOND TERM**







## Current Investor Mandates

Current investment mandates are frequently misaligned with the long-term and integrated perspective solutions required for climate change mitigation and adaptation, biodiversity conservation, landscape restoration, and food systems. Institutional and foundation investors are often bound by mandates wed to conventional tenets, including focusing on relatively short time frames and seeing value creation as one-dimensional (maximizing financial returns). These priorities may come at the expense of other objectives, including financing sustainable transitions.

Revising investor mandates to expand definitions of value creation and risk reduction, and to extend the investment time horizon for green investments, offer promising steps to expedite the introduction of landscape bonds. Foundations and philanthropic organizations may lead the way to embracing landscape bonds due to more flexible investment mandates. Encouragingly, pension funds have begun to shift their mandates to more holistic objectives, including place-based and quality-of-life interests.

## Investment Size

ILM's focus on project-level and landscape scale is a core challenge for reaching sufficient scale to attract investors. The minimum size for a green bond is often cited as \$250 million, a level traditionally needed to attract institutional investors and manage transaction costs. Another challenge to creating a meaningfully sized landscape bond is that investors would initially be cautious about landscape bonds.

Aggregating projects and partnership efforts may hold promise to build scale as well as reduce transaction and information costs.<sup>27</sup> NGOs are increasingly collaborating to explore how to develop a robust pipeline of landscape investment opportunities and organize these projects into coordinated portfolios. This effort includes testing digital platform tools for landscape partnerships, project developers, and financial intermediaries to increase scaling success.

Furthermore, understanding where interdependencies lie within a landscape (through stakeholder input and modeling tools) can better guide where to invest best to support scaling up. For example, to help small SMEs increase scale, landscape investment may need to fund an analysis of common risks and common needs (business development, business planning, and market analysis).

## Risk/Reward Profile

Since most investors evaluate securities based on a financial risk-adjusted return, a landscape bond needs to be designed with careful attention to 1) asset-related (revenue generating) projects—the reward component— and 2) backing from global development banks to manage risk concerns.

Specifically, a landscape bond will require technical and financial viability analysis, including project-level analysis of what is needed for projects or SMEs to strengthen investability. These important analyses help make the ILM approach investible through coordinated activities and alignment with investor goals. Parallel planning processes across national, subnational, and local scales are also important to achieve targeted socio-ecological outcomes,<sup>28</sup> and have been largely absent in conventional green bonds.

Specifically, landscape investment coordination can create value for investors by enabling activities that have historically been siloed, undervalued, or not explicitly funded by financial actors. These coordination activities include:

- Protecting supply chains and increasing resiliency
- Reducing reputational, regulatory, and physical climate risks
- Lowering business costs through sharing intervention expenses
- Generating value from more efficient delivery of ecosystem services
- Accessing markets or price premiums for new products.

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<sup>27</sup> Aggregation of projects is further challenged by a recommended buffer of eligible projects or assets greater than the face amount of the outstanding bond. This safety margin seeks to account for projects or assets which may become ineligible or drop out of the bond. Source: International Finance Corporation. (2020). Green Bond Handbook: A Step-by-Step Guide to Issuing a Green Bond.

<sup>28</sup> Shames, S., Clarvis, M. H., & Kissinger, G. (2014). Financing Strategies for Integrated Landscape Investment: Synthesis Report. *Financing Strategies for Integrated Landscape Investment*. Washington, DC: EcoAgriculture Partners.



## Public Sector Silos

Public sector institutions are largely siloed and sometimes territorial, which hinders coordinated management and strategy. Agencies serving the same region may have competing social, ecological, and environmental objectives.

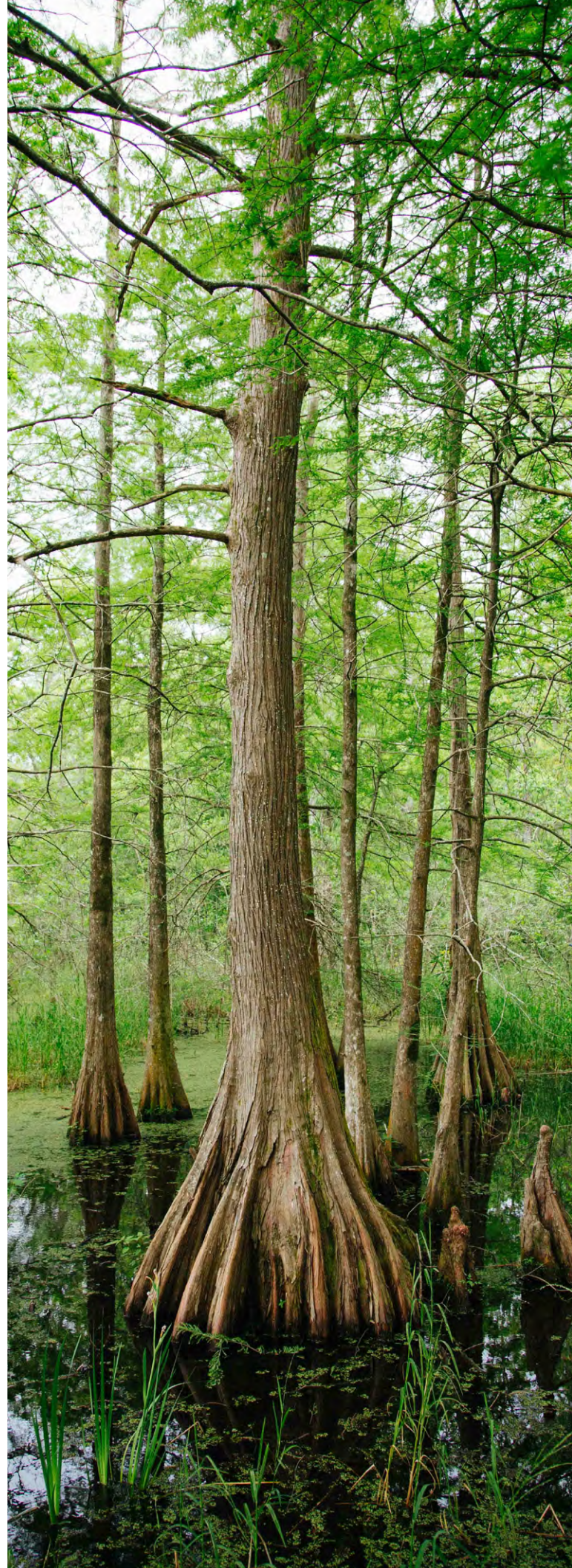
To overcome disjunction, a landscape bond will support stakeholder engagement activities, including outreach, partnership building, communication, and facilitation. Identifying a common vision is imperative to achieving institutional cooperation and outcomes. More robust impact measurement is one tool that can provide a common reference to bring together different institutions and authorities for collaboration and shared goals.<sup>29</sup>

## Underfunded Coordination

Whereas a conventional green bond leverages robust revenue streams from mature enterprises or existing ecosystem services, a landscape bond first focuses on the greatest needs on a system level, including establishing the coordination required to unlock revenue streams and socioecological outcomes. Shames and Scherr note that current financial architecture makes it difficult to achieve sufficient alignment and spatial coordination among sectoral, business, and government strategies to support transformational goals. Working on a landscape scale typically requires a high degree of coordination among stakeholders and may need to address governance and land tenure issues. Investors will need to appreciate and support this important engagement.

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<sup>29</sup> The Good Economy, Impact Investing Institute, and Pensions for Purpose. (2021). Scaling up Institutional Investment for Place-Based Impact.





A landscape bond could create a Landscape Finance Facility to deliver capital to build vital coordination. This facility, a Special Purpose Vehicle, could provide several functions, including:

- Managing and distributing bond revenue to landscape stewards, communities, host governments, and conservation organizations
- Providing loans to local businesses seeking to provide a service or role integral to the overall coordinated effort or fill an important foundational role
- Organize co-financing for individual projects.

The details of a Landscape Finance Facility could be explored in a subsequent paper geared toward issuers.

### **Training and Knowledge Deficits**

As one would expect from a multi-faceted, multi-sectoral approach, new areas of expertise must be developed in landscape partnerships, financial institutions, non-government organizations, and government agencies, among others. Since integrated landscape finance brings together different investments from different sectors, with actors with insufficient expertise, some may wonder if these new interactions may increase investment risks and transaction costs.

However, common intent and alignment between actors in different sectors—the hallmarks of integrated landscape management—seek to neutralize knowledge deficits. Common goals, reinforced by transparency from data and assessment, can provide an incentive for parties to leverage each other’s experience and expertise.<sup>30</sup> New solutions and synergies may emerge from creating cross-sectoral collaboration. Furthermore, as actors build new expertise, it will strengthen their due diligence effectiveness, thereby mitigating risk.

Encouragingly, several resources have emerged in recent years to build expertise. For example, the IFC created the Green Bond Technical Assistance Program (GB-TAP) in 2018. The program provides training to professionals in developing market financial institutions, covering foundational skills in green and sustainable finance.

### **Data Analysis and Information**

Data collection and analysis are closely related to several challenges already identified. Capacity building shared understanding among actors, feasibility analysis, and planning all may depend on more robust and incisive data.

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<sup>30</sup> Hofstetter, D. (2020). Transformation Capital: The Challenge of Designing and Testing a New Investment Logic for the Sustainable Development Goals. *Revista Diecisiete: Investigación Interdisciplinar para los Objetivos de Desarrollo Sostenible.*, (2), 15-26.





**LANDSCAPE INVESTMENT COORDINATION CAN CREATE VALUE FOR INVESTORS BY ENABLING ACTIVITIES THAT HAVE HISTORICALLY BEEN SILOED, UNDERVALUED, OR NOT EXPLICITLY FUNDED BY FINANCIAL ACTORS**

To date, a lack of proven business models, reliance on risk mitigation instruments, and a need for consensus on impact reporting metrics have hampered investment. To identify the most viable investments in an integrated landscape strategy and best understand investment risks, financial decision-makers will need more rigorous tools and related analytical resources.

Supportive policy will also require more robust data. Collaborations such as the Global Landscapes Forum, Regen10, 1000 Landscapes for 1 Billion People, and the 4 Returns for Landscape Restoration are creating resources and recommendations that seek to better connect demand-level actors (farmers, supply cooperatives) and the supply side (financial institutions) to develop tools and data that can be translated into policies.

## **Education**

Leveraging points in the global financial system may help resolve knowledge challenges. For example, introducing landscape investing into the curriculum of business schools and investment programs, such as the Chartered Alternative Investment Analyst designation, could help address the lack of relevant knowledge or awareness by staff in financial institutions, expand institutions' perspective on value, and lead to mechanisms more attuned to managing risk in landscape investments.

The further upstream one can introduce an understanding of integrated landscape investments; the better prepared the next generation of financiers will be equipped to support and work alongside landscape actors.



## IS A LANDSCAPE BOND INVESTABLE? A LESSON FROM HISTORY

### Green Bonds: Uninvestable until 2008

It started with a phone call. Several Swedish pension funds reached out to the World Bank in 2007. The funds wished to invest in climate-friendly projects but were unsure of how to locate these projects. The request initiated a dialogue between the World Bank and scientists (the Centre for International Climate and Environmental Research), a Swedish bank (Sandinaviska Enskilda Banken AB), and the pension funds.<sup>31</sup> The result was the first green bond, issued in November 2008.

### Among the challenges that were overcome to create the first green bond:

1. Identifying climate-friendly projects
2. Deciding how to evaluate and monitor potential projects (need for a second opinion)
3. Impact reporting standards were not yet established
4. Scientists, development bank experts, and investors had no blueprint to follow for collaboration
5. The need for a bond issuer with a sound credit rating (filled by the world bank)

Similar challenges will surround the creation of the first landscape bond. However, invaluable resources are now in place which did not exist in 2007. Each of these pioneering organizations has created resources that can help inform the issuance of the first landscape bonds.

- The Climate Bond Initiative developed the Climate Bonds Standard and Certification Scheme
- The European Union created the EU Green Bond Standard
- The World Bank provides several valuable resources, including World Bank Sustainable Finance and ESG Advisory services
- The International Capital Market Association has established Green Bond Principles.

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<sup>31</sup> The World Bank provides an interesting account of creating the first green bond. <https://www.worldbank.org/en/news/feature/2018/11/27/from-evolution-to-revolution-10-years-of-green-bonds>



## 7.2. INTEGRATED LANDSCAPE FINANCE CHALLENGES

Landscape bonds would represent a mechanism best suited for certain stages and projects in an ILIP portfolio. Shames et al. (2014)<sup>32</sup> identify six main challenges surrounding integrated landscape finance. Asset investment challenges include time horizon, investment size, and risk/return ratio. Enabling investment challenges include public sector silos, underfunded coordination, and incentives for asset investment. Recent ILF dialogue has identified two other challenges: training and data analysis and information to assess trade-offs in the landscape.<sup>33</sup>

### DEFINITIONS: ASSET VS. ENABLING INVESTMENTS

Enabling investments generally target projects that are too early or resource building/technical assistance to deliver the risk/reward profile that an asset investor would typically demand, particularly with an insufficient track record.<sup>34</sup> Examples of enabling-funded activities include multi-stakeholder dialogue and action platforms, strategic planning and coordination, setting up new finance and policy mechanisms, landscape assessment and monitoring, and incubating innovative business ideas.<sup>18</sup>

Asset investments demand a meaningful and competitive financial return to an investor, although some asset investments may instead target environmental or social capital returns. Examples include agricultural and other production/value chain activities, green infrastructure, natural resource restoration, business development, and health programs.



The global financial system is not yet aligned with an integrated landscape investing approach, instead remaining largely locked into a project-by-project orientation. A 2021 report authored by the finance design team of 1000 Landscapes for 1 Billion People identified five main challenges for landscape investments to gain traction with investors.<sup>12</sup>

<sup>32</sup> Shames, S., Clarvis, M.H., and Kissinger, G. (2014). "Financing Strategies for Integrated Landscape Investment: Synthesis Report," in Financing Strategies for Integrated Landscape Investment, Seth Shames, ed. Washington, DC: EcoAgriculture Partners, on behalf of the Landscapes for People, Food and Nature Initiative.

<sup>33</sup> 1000 Landscapes for 1 Billion People Finance Design Team, Meetings, 2021-22.

<sup>34</sup> Blue Forest Conservation and Encourage Capital. (2017). Fighting Fire with Finance: A Roadmap for Collective Action.

## TABLE 2. CHALLENGES FOR SCALING LANDSCAPE INVESTMENTS

Five main barriers limit the scaling of integrated landscape finance:



### 1. INADEQUATE INSTITUTIONS FOR LANDSCAPE COORDINATION

Inadequate institutions in landscapes to develop a pipeline of investable, landscape-regenerating projects:

- Financiers have trouble finding investable, landscape-regenerating projects
- Most landscapes lack coordinating institutions
- Where landscape institutions do exist, there is a chronic lack of long-term funding for investment portfolio development.



### 2. LACK OF LANDSCAPE INVESTMENT ORIENTATION

Most finance institutions lack a landscape orientation:

- Decision-makers have short time horizons
- Landscape investment and finance lack a recognized investment track record
- Institutions have a limited perspective on value.



### 3. LIMITED SCOPE

Internal institutional barriers limit the scope for landscape investment

- Institutional rules limit landscape investing
- Staff in financial institutions lack relevant knowledge and capacities.



### 4. INADEQUATE INSTRUMENTS

Instruments for landscape finance and risk management are inadequate:

- Financial instruments are not tailored to landscape investment needs
- Mechanisms to manage investor risk are inadequate.



### 5. LACK OF LOCAL CONTROL

Large-scale finance can undermine local vision and control:

- Vest power with those with capital
- Local entrepreneurs are less attractive to financial actors and bias towards external/ foreign parties.





**A LARGER PIPELINE OF INVESTABLE PROJECTS IN LANDSCAPES IS NEEDED. THESE PROJECTS OFTEN REQUIRE PREPARATION AND SUPPORT TO DEVELOP BUSINESS PLANS AND SECURE FINANCING**

**Challenges for landscape investments often extend beyond these five scale-related hurdles.<sup>35</sup>**

- Investment vehicles are not yet structured to accommodate different investor preferences for time window, risk versus return appetite, and larger deal size.
- A larger pipeline of investable projects in landscapes is needed. These projects often require preparation and support to develop business plans and secure financing.
- Coordination mechanisms have not been established to coordinate the range of public, business, and civil society projects that will coexist in a landscape. Managing projects on a standalone basis has been standard practice but ignores interdependencies and overall landscape objectives.

Growing investor demand for system-level change and sustainable landscapes provides a fertile environment for introducing a landscape bond to focus on the complexity required to accomplish biodiversity regeneration, climate adaptation, and food system transformation, to name a few needs.

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<sup>35</sup> Shames, S., & Scherr, S. J. (2020). Mobilizing finance across sectors and projects to achieve sustainable landscapes: Emerging models. *EcoAgriculture Partners, Washington, DC.*

### 7.3. ONE POTENTIAL ROADMAP FOR OVERCOMING CHALLENGES RELATED TO A LANDSCAPE BOND

Now that the challenges for a landscape bond have been reviewed, it is useful to explore applicable innovations for overcoming them in the existing green bond universe. Lessons can be drawn regarding the issuing organization(s), the pool of investors targeted, the selection of investments, the issuance size, development support for investments, mechanisms of accountability for landscape impact, and mechanisms for investor payment.

Here, we look at a blue bond that serves as a useful example and demonstrates investor appetite for core components that overlap with a landscape bond.

#### Seychelles Blue Bond<sup>36</sup>

- Issued by the Republic of Seychelles in 2018, the bond's de-risking elements included a concessional loan to support coupon payments (from the UN Global Environmental Facility) and a World Bank repayment guarantee for part of the bond's principal.
- Supports the Seychelles Marine Spatial Planning Initiative, an integrated, multi-sector approach to address climate change adaptation, marine protection and develop sustainable business practices.
- The initiative gathers input from a wide range of sectors and actors in the seascape, including commercial fishing, tourism and marine charters, biodiversity conservation, renewable energy, port authority, maritime safety, and nonrenewable resources.
- Coordinated planning across multiple agencies is funded, including the Ministry of Finance, Trade, and Economic Planning; the Department of the Blue Economy in the Office of the Vice President; the Ministry of Agriculture and Fisheries; and the Ministry of Environment, Energy, and Climate Change.
- Helps the South West Indian Ocean Fisheries develop sustainable fishery operations, but also targets several key economic, social, and environmental benefits; seeks to add value through regional collaboration and integration.
- Bond proceeds were used across multiple sectors to implement the country's sustainable blue economy plan.
- Private placement of the bond to impact donors helped limit transaction costs, and the Rockefeller Foundation provided a donation to cover much of these transaction costs.
- Funds projects focusing on capacity building for all stakeholders, seeking to build consensus and include poorer stakeholders.

<sup>36</sup> Detailed World Bank Appraisal of this bond: <https://documents1.worldbank.org/curated/en/394051505478217219/pdf/SEYCHELLES-PAD-09122017.pdf>

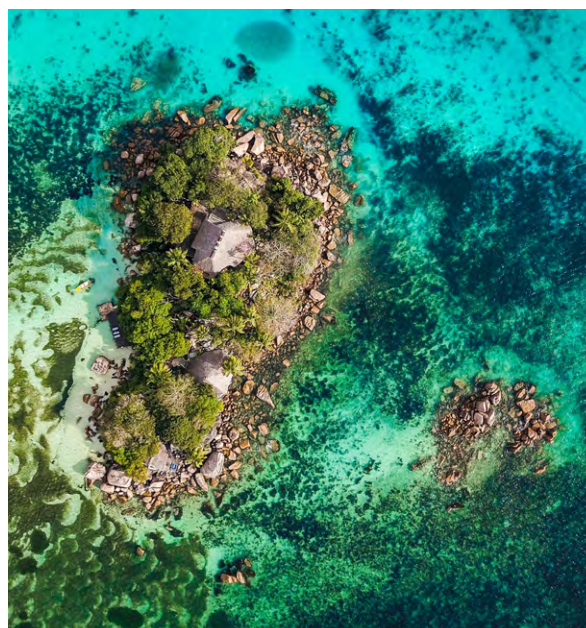


- Strengthened the enabling environment for local investments in the aquaculture sector (e.g., environmental and social impact assessments, capacity building, and training courses, and long-term human capital development plans).
- Includes two subsidiary agreements to deploy funds. The first is with the Development Bank of Seychelles to create an investment fund for commercial loans. The second is with the Seychelles Conservation and Climate Adaptation Trust (SeyCCAT) to establish a fund to make grants to public and private actors.
- Creates a Project Implementation Unit (PIU) that handles the financial management of the project; the bond also brings in an Environmental and Social Specialist and a Monitoring and Evaluation Specialist.
- Beneficiaries include the fishing industry (mainly SMEs), academic institutions, locally active NGOs, and community-based groups.

Several elements of the Seychelles Blue Bond address challenges identified earlier. To address the risk/reward challenge, credit enhancements from multilateral development banks helped de-risk the bond to attract investors, demonstrating an effective approach. While green bonds often underfund coordination, this blue bond funded a project implementation unit to collaborate with a broad group of agencies.

To ensure the bond's outcome focus was longer term and considered multiple stakeholders, and not short-term and sectoral, the bond-funded participatory processes and feedback engagement to align the project activities "around a shared vision, prioritize and sequence investments and establish a framework for the progressive realization of higher-level objectives."<sup>30</sup> Furthermore, a local partner, the Seychelles Conservation and Climate Adaptation Trust, was engaged to effectively deploy bond proceeds to meet local (waterscape/seascape/landscape) needs and challenges.

Conversely, some improvements could be sought going forward. For example, a year-and-a-half of preparation time went into issuing the bond. Although the extended time frame was partly due to the bond's nontraditional aspects, streamlining preparation and reducing this time frame should be sought for similar bonds.



**THE SEYCHELLES MARINE SPATIAL PLANNING INITIATIVE IS AN INTEGRATED, MULTI-SECTOR APPROACH TO ADDRESS CLIMATE CHANGE ADAPTATION, MARINE PROTECTION AND DEVELOP SUSTAINABLE BUSINESS PRACTICES**



## 8. NEXT STEPS IN DEVELOPING A LANDSCAPE BOND

Research proves that solving biodiversity loss, landscape degradation, food insecurity, and climate change mitigation and adaptation challenges cannot be accomplished when actors operate in isolation.<sup>2,6,7</sup> Interlinkages that underlie each challenge transcend one sector or a compartmentalized response. Investments in any of these areas 1) must address critical ecological, economic, and social processes to be effective, and 2) requires stakeholders to work together to minimize trade-offs between different, often competing, sector-focused goals.

However, the path to realizing landscape bonds is complex. Financial institutions and programs are now wrestling with how to shift funding towards multi-sectoral and landscape-level impact and how to address complexity and connectivity best. Engaging investors and funders willing to wrangle with this complexity is required. A transformative step is needed.

Multi-sectoral investment through landscape bonds seeks to transcend conventional green bonds by delivering coordinated investment in spatially sensitive projects and businesses and catalyzing ecological and economic synergies that drive regeneration at a landscape scale. By addressing shared problems or creating opportunities, landscape bonds can reduce trade-offs and strengthen synergies for landscape objectives.



Proceeds from a landscape bond would support and strengthen stakeholder engagement, landscape assessment, collaborative visioning, and action planning, which reduces risks and realizes synergies across the landscape when done well. These elements can no longer be overlooked or underfunded if we are to deliver nature-positive outcomes for global investors, national and regional governments, local stakeholders, NGOs, global citizens, and the landscapes and ecosystems we rely on.

**To accomplish these objectives, coordination over time is essential for landscape partnerships and projects to reach sufficient scale.** Green projects face an increased risk of failing to achieve desired outcomes and mitigate tradeoffs without sufficient coordination. Therefore, a landscape bond's alignment and coordination may reduce systemic risks, increase resiliency, and reduce credit risk for investors. For example, a joint report from the OECD and UNDP notes that alignment strengthens resilience and reduces risks by matching public sector objectives with private sector assets to solve negative externalities.

**Building new areas of expertise** also brings us a step closer to the first landscape bond. Training designated managers skilled at weighing financial and ecological considerations, and identifying synergies and needs, is needed to respond to contextual and adaptive landscape needs and guide the dispersion of funds. Separate entities would be set up to house these managers and other financial experts, who would then report to the relevant stakeholders engaged in the landscape partnerships. These stakeholders play an integral coordinating role in achieving joint objectives.

**A landscape financial coordinator** is also needed to engage, evaluate, and monitor how projects and activities are funded on a landscape level. These specialized financial coordinators would be proficient in landscape management and landscape-aligned investment. Innovation and integration often require cross-boundary understanding; as a result, analysts will need familiarity across several key sectors to recognize these synergies and their potential to deliver impact at scale. Both designated managers and landscape financial coordinators, through their collaborative and reporting responsibilities, serve to build a system of trust, accountability, and transparency that enables sustainable investment.



**BY ADDRESSING SHARED PROBLEMS OR CREATING OPPORTUNITIES, LANDSCAPE BONDS CAN REDUCE TRADE-OFFS AND STRENGTHEN SYNERGIES FOR LANDSCAPE OBJECTIVES**

**Independent, third-party due diligence** would be needed on these financial coordinators. What are the financial coordinator's qualifications? Do they have a documented record of applying an integrated finance approach? Do they have knowledge of the region(s) funded through the landscape bond? This area needs development but could meaningfully improve green and sustainable capital allocation and impact.

Landscape bonds also would require intermediary organizations to develop a more robust pipeline of landscape projects and tools to assess the investment readiness of proposed landscape investments. Specialized managers with expertise in sustainable land management would play a key role in these organizations. These managers can enable aggregation, steer the incubation of new businesses and business activities, and design investment models that share responsibility with well-established organizations—without taking excessive returns.

**Outcomes remain the bottom line.** Landscape bond managers would also thoroughly weigh financial, ecological, and social benefits in order to best evaluate synergies and trade-offs in a landscape investment portfolio. Pioneering work has begun to move this approach forward by proofing this concept within the management of a landscape bond through a small-scale pilot in Africa. These efforts can serve as case studies that shed light on how to best adapt investment to contextual needs. Another recommendation is that a landscape bond should shift some focus from managing risk to creating value and communicating these benefits to investors, as noted by [Hofstetter](#) (2020).

**Developing tools to deliver robust and incisive data is another key next step.** The technical analysis must demonstrate how non-revenue generating landscape activities act as building blocks for creating new investable projects/revenue streams and for scaling up existing ones. Innovative digital landscape tools and resources can strengthen future understanding of what is investible through both ex-ante and ex-post analysis. For example, [LandScale](#) offers a tool that uses a holistic assessment framework to generate data analysis, visualization, interpretation, and conclusions in a landscape.

More data surrounding transparency and shared risks is also necessary to incentivize actors and recognize interdependencies. On a more granular/landscape level, feasibility studies and financial modeling can steer investment.

Some of these tools are currently being built by different institutions. The Natural Capital Lab (IDB), the 1000 Landscapes for 1 Billion People initiative through [Terraso](#), and the Center for International Forestry Research (CIFOR) are developing insightful data and software tools, as well as capacity development that helps landscape partners plan, finance, and track their progress towards the development of ILIPs.





**A LANDSCAPE BOND  
SHOULD SHIFT SOME FOCUS  
FROM MANAGING RISK  
TO CREATING VALUE AND  
COMMUNICATING THESE  
BENEFITS TO INVESTORS**

Additional tools are in design to help build this expertise and bring us a step closer to landscape bond issuance. For example, LIFT (designed by EcoAgriculture Partners and Netherlands-based IUCN) and 4 Returns (led by Commonland) are designed to help landscape partnerships build skills and understand how they can value landscape-scale transformation and develop landscape investment portfolios. Landscape partnerships in developing countries particularly will benefit from these tools, as initiatives in these nations are often ad-hoc.

These next steps, and the innovations taking place, are needed to ensure sustainable land use and territorial development. Landscape bonds would be uniquely suited to deliver coordinated investment in spatially sensitive projects and businesses that have significant ecological and economic synergies to achieve regeneration at a landscape scale.







# APPENDIX

## SURVEYING THE GREEN BOND UNIVERSE

To better understand the role and need for a landscape bond, it's instructive to explore the existing green bond universe. This exploration provides a starting point for where the current universe of green bonds falls short of meeting landscape-level needs. With these established, green bonds can be explored on a category level.

### Conventional Green Bonds

Conventional green bonds, the largest category in the nature-positive bond universe, primarily focus on funding sectoral-focused projects intended to mitigate climate change or reverse destructive environmental practices. Green bonds may mirror conventional bonds in size, focus, and duration, though meeting established green bond standards, principles, or taxonomies.

The ICMA Green Bond Principles categorize green projects by objectives. These categories include climate change adaptation, climate change mitigation, natural resources conservation, pollution prevention, and biodiversity conservation. Although each objective is laudable, by the nature of their compartmentalization, they largely fail to consider trade-offs, landscape-specific needs, and engagement with stakeholders who reside in targeted areas, compromising the sustainability of these impacts over time. Furthermore, externalities are not fully addressed in conventional green bonds.

Green bonds often rely on existing or near-term cash flow generation to repay investors. In contrast, less cash-generative yet landscape-aligned activities are often overlooked or underfunded. In a survey of 71 integrated landscape initiatives in Europe, 92% of respondents reported underfunding for activities that fall outside of farming and agriculture.<sup>37</sup>

In contrast, ILM's more intensive capital needs at the front end of a landscape partnership are addressed and balanced with revenue generation as the partnership matures.

### Blue Bonds

Blue bonds focus on the protection and environmentally sustainable management of coastal ecosystems. These debt securities often promote multiple objectives, including aquatic biodiversity conservation, sustainable water and wastewater management, and sustainable fishing and harvesting practices. The Sustainable Blue Economy Financing Principles place a higher priority on ESG criteria

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<sup>37</sup> García-Martín, M., Bieling, C., Hart, A., and Plieninger, T. (2016). Integrated landscape initiatives in Europe: Multi-sector collaboration in multi-functional landscapes. *Land use policy*, 58, 43-53.

in project selection, stakeholder involvement, and enhancement of local livelihoods in comparison to the green and social bond markets.<sup>38</sup>

Blue bonds may target any area of the blue economy. Note economy as a qualifier for deploying proceeds. In contrast, an integrated and systemic approach requires flexibility to invest outside of the current economy, such as funding formative and technical assistance activities tailored to an individual landscape or seascape. With that said, blue bond principles advocate for investments that encourage sustainable stewardship of oceans and coasts, which aligns well with a landscape framework.

## Environmental Impact Bonds

Environmental impact bonds deliver capital upfront to allow environmental restoration projects in return for repayment of principal and interest to investors, along with a performance-linked payment. If the funded environmental projects achieve designated outcomes or impact, there is less repayment obligation to investors (whose primary objective is risk mitigation).

One drawback to impact bonds is the increased risk for investors; return on investment depends on the success of a specified outcome within a certain time frame. These pay-for-results bonds are closely married to metrics and singular outcomes. Galitopoulou & Noya (2016) describe impact bonds as “not real bonds but rather future contracts on social outcomes.”<sup>39</sup> Investors are not paid if the environmental or socio-environmental outcome is not fully achieved. Furthermore, environmental impact bonds generally fail to address trade-offs, integrated management, full stakeholder engagement, and peripheral projects.

## Forest Bonds

Forest bonds seek to reduce deforestation and forest degradation emissions by funding projects aligned with alternatives to deforestation. Investors are compensated with either carbon credits or proceeds from carbon credits. For example, in an IFC Forests Bond, credits are generated from avoided deforestation and issued under the Verified Carbon Standard.

These bonds deliver forest protection benefits; however, the use of proceeds revolves around revenue generation and “viable” alternatives. In contrast, a landscape needs capital for formative work to develop transformational change. A forest bond generally entails little or no engagement with local stakeholders or customization to local, landscape-level needs with the targeted forests.

The private sector backing of forest bonds also enables a price support mechanism, large issuance size to reduce transaction costs, and the backing of a AAA-rated insurer (International Finance Corporation).

38 Roth, N., Thiele, T., & Von Unger, M. (2019). Blue bonds: financing resilience of coastal ecosystems. *Key Points for Enhancing Finance Action. Blue Natural Capital Financing Facility: Technical guideline prepared for IUCN GMPP.*

39 Galitopoulou, S., & Noya, A. (2016). Understanding social impact bonds. OECD Working Paper. <https://www.oecd.org/cfe/leed/UnderstandingSIBsLux-WorkingPaper.pdf>



An underwater photograph showing a moray eel swimming horizontally across the frame. The eel is positioned in the upper middle section. Below and around it is a dense coral reef structure with various types of coral, including some tall, thin, columnar ones. The water is clear and blue, with some small fish visible in the background.

## BLUE BONDS FOCUS ON THE PROTECTION AND ENVIRONMENTALLY SUSTAINABLE MANAGEMENT OF COASTAL ECOSYSTEMS

### Debt-for-Nature Swaps

Debt-for-nature swaps seek conservation protection in highly indebted and vulnerable countries by addressing the triple threat of high debt obligations, heightened vulnerability to climate change effects, and economic reliance on natural resources. Unfortunately, programs that protect natural resources suffer deficient funding in these countries due to budgetary constraints. In these restoration swaps, a developing country's debt is either reduced or forgiven by a debtor in exchange for the country's substantial financial commitment to conservation.

These debt swaps deliver benefits on a broad scale but not a landscape scale. An integrated landscape management approach requires many activities, needs, and engagement well beyond those in conservation. As with most green bonds, unaddressed elements include trade-offs, integrated management, full stakeholder engagement, and peripheral projects.

# RECOMMENDED FURTHER READING

## **DOMINIC HOFSTETTER**

*Transformation Capital: The Challenge of Designing and Testing a New Investment Logic for the Sustainable Development Goals* (2020).

## **INTERNATIONAL FINANCE CORPORATION**

*Green Bond Handbook: A Step-by-Step Guide to Issuing a Green Bond* (2020).

## **THE INTERNATIONAL UNION FOR CONSERVATION OF NATURE (IUCN)**

*Green Bonds and Integrated Landscape Management* (2018).

## **SETH SHAMES AND SARA J. SCHERR**

*Mobilizing finance across sectors and projects to achieve sustainable landscapes: Emerging models* (2020).

EcoAgriculture Partners, Washington, DC.

## **UNIVERSITY OF CAMBRIDGE INSTITUTE FOR SUSTAINABILITY LEADERSHIP (CISL)**

*Integrating climate and nature: the rationale for financial institutions* (2022).

Cambridge, UK: University of Cambridge Institute for Sustainability Leadership.







By David Hecht, prepared for:

