




DEVELOPMENT FUTURES SERIES WORKING PAPERS

Thematic bonds and how to deliver more sustainable finance in developing economies

by Lars Jensen

UNDP GLOBAL POLICY NETWORK



UNDP is the leading United Nations organization fighting to end the injustice of poverty, inequality, and climate change. Working with our broad network of experts and partners in 170 countries, we help nations to build integrated, lasting solutions for people and planet. Learn more at undp.org or follow at [@UNDP](https://twitter.com/UNDP).

The views expressed in this publication are those of the author(s) and do not necessarily represent those of the United Nations, including UNDP, or the UN Member States.

Copyright © UNDP June 2024
All rights reserved
United Nations Development Programme
1 UN Plaza, New York, NY 10017, USA

Online ISSN: 3005-3307

Thematic bonds and how to deliver more sustainable finance in developing economies

by Lars Jensen (lars.jensen@undp.org)¹

¹ Lars Jensen is a Senior Economist at UNDP's Bureau for Policy and Programme Support. **Acknowledgements:** A special thanks goes to Senior Research Associate Daniel Hardy from the Vienna Institute for International Economic Studies and Professor of Economics and Director of Sustainable Finance Ulrich Volz at SOAS University, London, for comments on an earlier draft. The author would also like to thank UNDP colleagues George Gray Molina, Marcos Neto, Tenke Andrea Zoltani and Kirthisri Rajatha Wijeweera. This paper reflects the opinion of the author.

Contents

Abstract	3
1. Introduction	4
2. The thematic bonds market	5
3. Issuer incentives	8
4. Credibility and additionality	11
5. Thematic bond models with credit enhancements	13
6. Five features of a developing economy green bond model	18
7. Conclusion	22
References	23

Figures

Figure 1. The thematic bonds market – yearly issuances (US\$ billion)	5
Figure 2. Sovereign bond yield versus credit rating	14
Figure 3. Cumulative Green Financing (GF) and Eligible Green Expenditures (GE)	19
Figure 4. A green bond model for developing economies	20

Boxes

Box 1. Categories of thematic bonds	6
Box 2. The greenium	9
Box 3. DfD complexity and cost	15

Abstract

Sustainability-themed bonds are growing in popularity, including among development practitioners who view them as promising instruments in the delivery of more, especially climate, finance in developing economies. This paper provides an overview of the thematic bonds market and a discussion of issuer incentives as well as some of the main challenges related to additionality and credibility. To improve the potential of thematic bonds as a tool for sustainable and equitable development, the paper proposes five features that any official sector-supported model should prioritize. These features aim to deliver substantially lower funding costs for ‘green activities’ and improve market access as well as the credibility of bonds, which include strengthening issuer commitments to ambitious targets and incentives to implement climate-friendly policies. Finally, it is important to recognize the limitations of donor-supported models. High debt burdens in many countries limit the use of debt instruments, and these will compete for limited official sector funds with other, potentially fairer, means of delivering climate finance.

Introduction



Sustainability-themed bonds, in short thematic bonds (TBs), are one of the most prominent innovations in sustainable finance in recent times. The still relatively new and small market, especially for sovereigns who have been slower to catch on, continues to undergo a fast-paced development driven onward by the increasing urgency of climate action. Through TBs, such as the dominant green bonds, financial markets are expected to play a catalytic role in financing climate change mitigation and adaptation, as well as other sustainable development priorities. There are, however, good reasons to remain cautious about the transformative potential of TBs, especially in advanced economies, but also in developing economies (DEs) that stand to benefit the most from more favourable market access.² At the heart of the matter is the question of additionality: Do TBs lead to investments in sustainable development that otherwise would not have been undertaken or alternatively undertaken at a lower quality?

Particularly for DEs relative to advanced economies (most of which have high investment-grade credit ratings and access to a diverse group of investors), it is often argued that TBs compared to ordinary vanilla bonds, can potentially unlock access to new investors that offer longer maturity and more stable funding. However, more research is needed to understand the extent to which TBs expand the quantity and quality of countries' resource envelope. Although the literature is more advanced on differences in funding costs – often referred to as 'greeniums' for green bonds – it offers mixed conclusions. Even for studies that have successfully identified greeniums, there is little consensus about their longevity and drivers. Given their mostly small size, it is also difficult to argue that they can substantially influence spending decisions or free up resources that would have otherwise gone to service debt.

To become a stronger and fairer force for sustainability transformations, TBs targeting 'green activities' in DEs will have to more clearly demonstrate that they can: 1) significantly lower funding cost; 2) deliver access to better sources of capital; 3) build capacity and knowledge that improve spending decisions and ultimately impact, and 4) improve the credibility of the 'green label' by addressing greenwashing concerns. To achieve this, the paper outlines five features, which should be prioritized in any official sector-supported model. These features include a strong credit enhancement and technical assistance component and measures aimed at tracking both the project and aggregate/overall level of development performance, as well as financial rewards linked to ambitious targets and the use of climate-friendly policy reforms. These features are accomplished while allowing countries a fair degree of intertemporal fiscal flexibility to undertake and account for eligible activities and expenditures. The approach presented here is rooted in the global 'just transition' principles and offers guidance on a way forward for mobilizing fair and effective climate finance to DEs through thematic debt.

The remainder of the paper is organized as follows. Section 1 provides a brief overview of the TB market including its size and two main typologies of bonds. Section 2 discusses issuer incentives focusing on borrowing costs, capital access and learning. Section 3 addresses some fundamental credibility and additionality challenges. Section 4 discusses TB models with credit enhancements. Section 5 outlines the five features of a fair and effective official sector-supported TB model targeting green activities. Finally, Section 6 concludes the paper.

² The term 'developing economy' as used here broadly refers to all low- and middle-income countries as per World Bank income classification. When discussing bonds, however, only few low-income countries have markets access why developing economies is mostly a reference to middle-income countries. Sometimes when referring to external studies the text will use the term 'emerging markets and developing economies' (EMDEs), which covers all countries not classified as advanced economies by the IMF, including all low- and middle-income countries.

The thematic bonds market

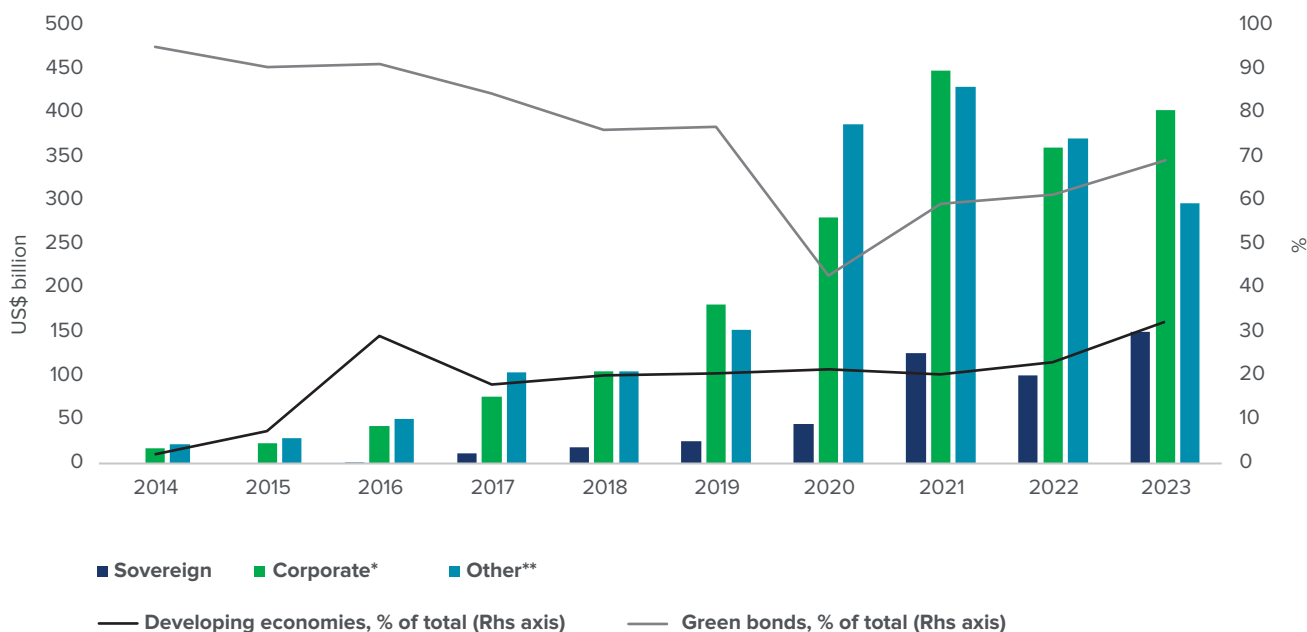
2

There are two main categories of TBs: use-of-proceeds (UoP) and the emerging sustainability-linked bonds (SLB), cf. Box 1. Most bonds under these categories target climate and environmental objectives, and bonds linked to social or other sustainability objectives are structurally similar.³ The market is dominated by UoP green bonds (GBs), whereas SLBs are a later invention with a much smaller market size.

Across different themes TBs still only make up less than 2 percent of the total bonds market but have grown rapidly from close to zero a decade ago to a cumulative issuance of about \$5.3 trillion in the first quarter of 2024 according to the World Bank (World Bank Treasury Department, 2024) or \$4.4 trillion at the end of 2023 according to the Climate Bonds Initiative’s screening methodology (Climate Bonds Initiative, 2024).

Sovereigns arrived in the market later and only account for about 11 percent of cumulative TB issuances, but have been growing their share, which in 2023 was \$149.3 billion of a total of \$848.9 billion, or almost 18 percent (cf. Figure 1).⁴ Sovereigns’ participation in the market was delayed in part by the fungibility requirements in public debt frameworks, which conflicted with the UoP earmarking of most TBs. This problem has been partially alleviated by more and more sovereigns adopting national TB frameworks with reporting standards and external review requirements to instill confidence among sustainability-focused investors (Cheng, Ehlers, & Packer, 2022).

Figure 1. The thematic bonds market – yearly issuances (US\$ billion)



Source: Climate Bonds Initiative (CBI) Data Platform. Note: The CBI database includes all green, social and sustainability-themed bonds aligned with the CBI screening methodologies. * Includes financial and non-financial corporates. ** Includes local governments, development banks, government-backed entities, and nonprofits.

³ It can be noted that in this paper, the term ‘thematic bonds’ covers all bonds targeting sustainable development priorities. Another often used term is ‘green, social and sustainability’ (GSS) or ‘green, social, sustainability and sustainability-linked’ (GSSS) bonds. See for instance (Climate Bonds Initiative, 2024) and (World Bank Treasury Department, 2024).

⁴ In 2016, Poland became the first sovereign to issue a TB in the form of a GB worth \$790 million.

GBs account for almost two-thirds of the cumulative TB market to date, and saw their share drop substantially in 2020 as COVID-19 prompted a sharp increase in the issuance of social bonds. The largest GB sovereign issuers to date are France, Germany and the UK. With the Next Generation EU project (NGEU), the European Commission (EC) is set to become the world's largest issuer with a planned €250 billion (\$268.4 billion) of NGEU GBs, of which approximately €44 billion (\$47.2 billion) has been issued to date to fund eligible green expenditures in EU member states (MS).⁵ Most GB proceeds are reported to fund projects in clean transportation (37 percent), energy efficiency (21 percent) and adaptation (12 percent).⁶

For the TB market as a whole, developing economies account for about 23 percent of total cumulative issuances, but their share has been growing since 2021 and reached almost one-third of total issuances in 2023.

For the later class of SLBs, cumulative issuances are still only a small fraction of the total TB market. According to the Climate Bonds Initiative, cumulative issuances of SLBs reached \$280 billion at the end of 2023. However, when applying their SLB screening methodology aimed at helping investors to identify deals with targets that are credible and aligned with the 'well below 2°C' goal of the Paris Agreement, the volume of SLBs falls to only \$48.6 billion, or 21 percent of cumulative issuances (Climate Bonds Initiative, 2024).⁷ Only two sovereigns, Chile and Uruguay, have issued SLBs to date.

Box 1. Categories of thematic bonds

Use-of-proceeds bonds

UoP bonds, often referred to as project-based bonds, have their proceeds earmarked for specific projects or activities consistent with the issuer's investment framework for eligible projects, such as a GB framework. Typically, the issuer can raise TB proceeds up to an amount not exceeding the eligible thematic expenditures as defined by the framework. The idea is that investors can choose to fund only those activities that are considered sustainable. There are no legal or regulatory binding definitions of sovereign TBs. However, most countries' GB frameworks follow the non-binding Green Bond Principles (GBP) framework created by the International Capital Markets Association (ICMA). Here, a GB is defined as: *'any type of bond instruments where the proceeds will be exclusively applied to finance or re-finance in part or in full new and/or existing eligible Green Projects and which follows the four Green Bond Principles'* (ICMA, 2021).

The European Commission has already issued about US\$47 billion of GBs under its Next Generation EU (NGEU) initiative, so-called NGEU GBs, and is expected to become the world's largest GB issuer (European Commission, 2023a). The EU is also working on implementing an EU GB standard laying down standards for issuers (inside and outside the EU) who wish to use the designation 'European green bond' or 'EuGB' (European Parliament, 2023). The EU GB standard, according to the EU, seeks to improve quality and credibility over existing frameworks by setting higher standards for transparency and external review requirements. Activities eligible for EuGB funding are defined in the EU Green Taxonomy and cover six environmental objectives (EU Technical Expert Group on Sustainable Finance, 2020).⁸ Proceeds can be allocated flexibly to different types of spending, such as fixed assets, capital or operating expenditures, financial instruments and household financing and must be accounted for before the bond matures. To allow for some flexibility vis-à-vis eligible activities, 15 percent of proceeds can be allocated to economic activities for which the taxonomy has not yet defined any technical screening criteria, and/or for activities in the context of certain international support. Some believe that the EU framework will become the GB 'gold standard' (Latham & Watkins, 2023).⁹

⁵ See (European Commission, 2023a) and (European Commission, 2023b).

⁶ See IMF's Climate Change Dashboard Financial Indicators, (IMF, 2023a).

⁷ The two main reasons for non-alignment are reported to be a 'partial GHG scope coverage in targets' (48 percent of all non-aligned SLBs) and a 'lack of GHG targets' (32 percent of all non-aligned SLBs).

⁸ Climate change mitigation, climate change adaptation, protection of water and marine resources, circular economy and pollution prevention and control.

⁹ See (European Commission, 2023a).

Box 1. Continued

Sustainability-linked bonds

The second category of TBs is sustainability-linked bonds (SLB), also referred to as target- or performance-based bonds. SLB proceeds are not earmarked for sustainable activities but go towards general purpose debt and, therefore, allow the issuer more flexibility over UoPs. Instead, bond repayment terms are linked to the issuer's progress on one or more predefined sustainability performance targets, supported by more detailed key performance indicators.¹⁰ Targets can, for instance, be emissions reductions, total forest cover, percentage of women on the board of directors of large companies, etc. If the issuer fails to achieve the targets set within an agreed time, a financial penalty kicks in, usually in the form of a coupon step up, and in some cases SLBs will also allow for a financial reward if targets are met or exceeded. This penalty-reward structure is meant to strengthen the issuer's commitment to reaching the targets, thereby instilling confidence among sustainability-focused investors.

Like UoP GBs, ICMA has also published SLB principles and a definition: *'Sustainability-Linked Bonds are any type of bond instrument for which the financial and/or structural characteristics can vary depending on whether the issuer achieves predefined Sustainability/ESG objectives'* (ICMA, 2023).

For a description of all the steps involved in issuing a thematic debt instrument for both investors and issuers, see for instance, the guidance developed jointly by the Global Investor for Sustainable Development Alliance, UN DESA and UNDP (GISD, 2024).

¹⁰ See for instance (Financial Conduct Authority, United Kingdom, 2023).

Many emerging market (EM) sovereigns are optimistic regarding issuing TBs. In a 2022 World Bank survey of 32 EM Debt Management Offices (DMOs), eight (25 percent) had already issued and another 16 (50 percent) were considering issuing TBs (World Bank, 2022). The number one reason provided was to diversify the investor base, while the second was to signal the issuer's commitment to sustainability.

TBs are more likely to have an additionality impact on sustainable development if at least one of three conditions are met: 1) Cost – TBs fetch higher prices and thus lower yields – so-called 'greeniums' for GBs – than ordinary vanilla bonds (OBs); 2) Access – TBs facilitate access to additional (new) and perhaps better sources of capital (better meaning less volatile with longer maturity); and 3) Learning and commitment – issuing a TB, and implementing the accompanying framework/requirements leads to better sustainability outcomes by, for instance, improving government coordination and strengthening commitment.

Spending decisions are in general independent of the type of financing available. As such, a government's option to raise proceeds from, for example, a GB issuance is unlikely to result in any additional green spending. However, in cases where certain types of expenditures can facilitate substantially lower borrowing costs, and where reaching the main policy objective can be achieved through either a green or non-green alternative, spending decisions can be influenced.¹¹ Furthermore, lower borrowing costs will allow countries to either increase non-interest expenditures, including more green expenditures, or alternatively bring down debt. It is worth noting that climate action is also likely to contribute to a lowering of borrowing costs, independent of how it is financed. Growing evidence suggests that markets are increasingly pricing in climate risk performance and exposure in sovereign bonds, and for lower-rated countries especially physical impact preparedness and climate risk exposure (Bingler, 2022). By some estimates climate vulnerability has raised the average cost of public debt in DEs by 117 basis points (Kling, Lo, Murinde, & Volz, 2018), and other estimates suggest that a 10 percentage point increase in climate change vulnerability is associated with a more than 150 basis point increase in long-term government bond spreads in emerging markets and developing economies (World Bank, 2023).

Greeniums, understood as the yield difference between an otherwise identical OB and GB, can in a few cases be observed directly, but researchers mostly have to rely on models and estimates to study them. Evidence of their existence, size and longevity is mixed (see Box 2).

For SLBs, identifying the greenium is further complicated by their unique repayment structure, which makes it difficult to find good reference bonds. However, Chile's first SLB (which was also the world's first sovereign SLB) received an estimated greenium of 10 basis points on issuance.¹² In Chile's second SLB and Uruguay's first there were no clear signs of any greeniums.¹³ Not only did Chile's second SLB not receive a greenium, it also only included a possible coupon step-up (penalty), like most SLBs, that could raise the coupon by 5 to 50 basis points depending on whether one or more development targets are missed.¹⁴ Uruguay's bond has both a reward and penalty structure by either decreasing or increasing coupons by a maximum of 30 basis points and starting in year six after the issuance.¹⁵ As an example, in the best-case scenario, Uruguay

¹¹ Increasing energy access can for instance be achieved through two competing technologies: fossil-fuels (FF) or renewable energy (RE). If a government can reduce interest expenditure by counting the RE expenditure towards GB proceeds and/or obtain access to additional capital needed, this will factor in positively for the RE option relative to the FF option. See for instance (IEA, 2024).

¹² As reported by the International Finance Review (Lewis, 2022) and (Lindner & Chung, 2023).

¹³ As reported by the Retail Banker International (Bindman, 2023).

¹⁴ For Chile's most recent SLB, key performance indicators are related to total emissions, renewable electricity generation and gender equality (FitchRatings, 2023a).

¹⁵ Uruguay's 2034 bond of \$1.5 billion was issued at a coupon of 5.75 percent in October 2022 and will be repaid in three equal annual installments starting in 2032. Under successful goals achievement a 30 basis points coupon reduction would accrue from October 2027. This would save approximately \$18.7 million (or 2.8 percent) of total interest payments in net present value terms (NPV using a discount rate of 5 percent) over the lifetime of the bond. For more details on the bond structure and key performance indicators see (FitchRatings, 2022a).

would save about 2.8 percent net present value (NPV) of total interest payments over the lifetime of the bond, which when recalculated to a greenium on issuance, would be equivalent to about 16 basis points. In a worst-case scenario, Uruguay would have to pay 2.8 percent more.

Box 2. The greenium

Why a greenium?

The literature has mainly focused on two competing explanations of greeniums (Löffler, Petreski, & Stephan, 2021). One is that investors with pro-environmental preferences are willing to accept a lower return to hold green assets. A bond greenium would then exist if there is a stronger demand for green bonds (GBs) relative to ordinary bonds (OBs). The stronger demand can be driven, for instance, by adopted minimum green allocation targets by institutional investors (Boermans, 2023). Another explanation is that GBs (and green assets in general) might carry a lower credit risk and, therefore, warrant a lower yield. However, when creditors have the same recourse to the issuer's assets (such as for sovereign bonds) this second explanation does not apply. Conversely, even if it were possible, for example, to attribute a reduction in credit risk to a GB, this should affect the pricing of all existing and new bonds. This is also reflected in the fact that sovereign OBs and GBs (for issuances without third-party credit enhancements) are issued at the same credit rating. In interviews conducted with investors in sovereign debt, it should also be noted that none of them believed that the pricing difference would ever be significantly large, because ultimately the bonds share the same credit risk (GISD, 2024).

What is the size of greeniums?

Identifying a greenium requires comparing a GB to an identical OB (risk-profile, size, maturity, timing, etc.). For Germany and a few other countries that have issued GBs under the so-called 'twin bond model' the greenium is directly observable, as the GB is issued alongside an otherwise identical OB, with the option to convert the GB to the OB at any time. The German greenium was about 2 basis points (0.02 percentage points) at issuance, widening to about 5 basis points in the secondary market before falling to between 1 to 2 basis points at the time of writing.

The twin bond comparison is not possible in most cases, so researchers rely on models and estimates. Overall, empirical results on the presence, size and longevity of greeniums are mixed. One recent study of the European sustainable (ESG) debt market (i.e. not only GBs) covering both corporate and sovereign issuers found that while environmental, social and governance (ESG) bonds did carry lower yields in the past, this is no longer the case, and concluded that there is no evidence of a systematic and consistent pricing advantage for any ESG bond category (Balitzky & Reiche, 2023). Another study focusing on sovereign GBs reported that greeniums range from an average of 4 basis points in advanced economies to a higher 11 basis points in emerging markets (Ando, Fu, Roch, & Wiradinata, 2023). Another GB study covering all EMDE issuers found that greeniums averaged 4.2 basis points in 2021 and 6.4 basis points at the end of 2022 (Amundi & IFC, 2023). Additional studies have shown that greeniums range from 15 to 20 basis points in primary and secondary markets (Löffler, Petreski, & Stephan, 2021). Some researchers have also provided evidence that investors are willing to pay more for GBs of a higher quality and credibility, as GBs with external review and verification requirements, and GBs that have been proven to significantly contribute to climate mitigation and adaptation carried higher greeniums than those that did not (Dorfleitner, Utz, & Rongxin, 2022); (Baker, Bergstresser, Serafim, & Wurgler, 2018); (Pietsch & Salakhova, 2022)). High-quality GBs were determined to carry, on average, a greenium of up to 5 basis points over low quality GBs. Larcker and Watts (2020), however, argue that the US municipal bonds market can be considered a quasi-natural experiment for assessing greeniums, as it allows for the comparison of nearly identical OBs and GBs by the same issuer on the same day. The authors find no evidence of greeniums and conclude that investors appear entirely unwilling to forgo wealth to invest in environmentally sustainable projects.

Where greeniums have been identified, it is hard to argue that their size provides enough of a financial incentive for governments to choose green over non-green alternatives or that the reward-penalty structure for SLBs is strong enough to substantially strengthen commitments to reach the sustainable development targets.

It is also worth noting the additional costs associated with arranging TB issuances, and that this extra cost is stated as the number one reason among DMOs that do not consider issuing TBs (World Bank, 2022). Meeting these costs – also in terms of staff time – may be challenging for small DMOs. A large portion of the extra cost can be considered ‘fixed’, and the average costs of additional TBs issuances therefore be expected to fall. Nonetheless, for the DMOs not considering TBs (25 percent of DMOs surveyed) the cost and small greeniums do not encourage any divergence from their usual funding practices.¹⁶

Other frequently mentioned reasons for issuing TBs fall within the capital access category (World Bank, 2022). More specifically, issuing TBs is said to potentially help expand and diversify the investor base, including attracting international investors and investor types with longer investment horizons who might also be less likely to divest during times of turbulence. For larger advanced economies with investment grade credit ratings, it is not obvious that such capital access concerns should be a key motivating factor for issuing TBs. For non-investment grade DEs that are typically more capital constrained, market access concerns likely factor stronger into decisions, and more research is needed to understand to what extent TBs can help expand the quantity and quality of DEs’ resource envelope, also relative to alternative policy and reform priorities. Note, for instance, that improving a country’s credit quality can both lower borrowing costs and open access to investors with a lower risk appetite and longer investment horizons, such as many institutional investors.

Finally, there could be important learning effects associated with issuing TBs and implementing the associated frameworks regarding policy and organizational reforms that improve transparency, accountability, spending decisions, and ultimately lead to better development outcomes. However, since the content of TB frameworks is independent of the funding source, it would reflect poor governance if only expenditures linked to TB proceeds were assured better quality, transparency, accountability and results. Such potential benefits of TB frameworks should be disentangled from the funding source and applied to sustainable development investment strategies in general. For instance, this could be accomplished by adopting program- and/or results-based budgeting systems that make project green orientation consistent with overall green orientation.¹⁷

¹⁶ See Box 4, page 12 in (World Bank, 2022). It can also be noted that GISD estimates that the total cost for a developing country of issuing an SDG bond ranges from \$50,000-\$100,000, which includes a feasibility study, framework development, coordination and second party opinion (GISD, 2024).

¹⁷ See for instance page 13 in (Lindner & Chung, 2023).

Credibility and additionality

4

The main purpose of UoP TB frameworks is to provide sustainability-oriented investors with assurances that at least an amount equal to the proceeds raised is used to fund worthwhile sustainable projects. In lieu of legally binding frameworks, assurances are, therefore, linked to the quality of the framework in terms of definitions and criteria for project selection, implementation, reporting standards, requirements for independent verification, etc. But ultimately, frameworks have no enforcement mechanisms and the “only” risk to the issuer of not living up to its promises is reputational.

There is another, and perhaps more fundamental, credibility problem tied to UoP bonds and their frameworks. As frameworks only attempt to account for an amount equal to the proceeds raised, they provide no information about the overall sustainable development performance of the issuer. As an example, in a study on firm GBs by the Bank for International Settlements (BIS), the authors found no clear evidence that GB issuers reduced emission intensities more than other firms in the same sector. The problem is framed as follows:

Because green labels apply to standalone projects rather than to the firm’s overall activities, projects promising carbon-reductions could be offset by carbon increases of the same firm elsewhere.

(Ehlers, Mojon, & Packer, 2020).

Such results should be a cause for great concern as they imply that GBs are redundant when it comes to having any additional impact on sustainability. The same logic applies to sovereign issuances, and the issue can also be framed in terms of the fungibility of sovereign bond proceeds: Notionally allocating them to certain green spending just frees up resources for other spending.

To improve credibility, the sustainability-labelling of bonds should, therefore, also depend on the overall performance of the issuer, and not just a few carefully selected projects that reflect a small fraction of total activities and expenditures – in effect adding aspects of an SLB mechanism. The issue, for instance, has led BIS to suggest that a firm-level green rating (based on total carbon intensity) should accompany existing project-based green labels.

SLBs partly address this greenwashing problem as they typically use sustainable development targets that measure the overall/aggregate performance of the issuer, and thereby reflect the governance principle that the government should be held accountable for the country’s overall performance (Hardy, 2022). Moreover, as described in Section 2, they embed financial incentives to reach the targets. But SLBs suffer from their own credibility problems. If the targets embedded in the debt contract are unambitious, SLBs ought not qualify as sustainable investments. In addition, if the reward-penalty structure is too weak, sustainability-linked debt contracts can fail to substantially influence the commitment of the issuer. The lack of any financial reward coupled with the possibility of a future penalty found in some SLBs may also raise questions among taxpayers about the rationale behind such choices.

In a letter to banks, the Financial Conduct Authority (FCA) of the UK warned that sustainable development targets in sustainability-linked loans are too easy to meet, and contracts should instead be aligned with companies' published transition plans (UK FCA, 2023). As mentioned in Section 1, the Climate Bonds Initiative has found that only 21 percent of all SLBs issued to date meet their screening criteria for having credible and Paris Agreement aligned targets (Climate Bonds Initiative, 2024). The sovereign version of this could be mitigation and adaptation targets as formulated in nationally determined contribution plans (NDCs).¹⁸ In the same letter to banks, the FCA also warned that current reward-penalty structures create little incentive for borrowers to meet the sustainability targets. The trick for SLBs is thus to reach the right balance between development ambition and financial incentive.

¹⁸ NDC reports are at the heart of the Paris Agreement and describe countries' progress and goals for reducing national emissions and adapting to climate change.

Thematic bond models with credit enhancements

5

In most cases where TBs have clearly and substantially lowered borrowing costs and helped increase access to new sources of funding, the sustainability labelling of the bond has not been the determining factor. Rather it has been credit enhancements provided by one or more third-party supporters – often from the official development finance sector – with a higher credit rating.

Extreme examples are the debt-for-development deals (DfDs) applied in countries suffering from high levels of debt distress. Although DfDs are not new, they have been growing in popularity, partly because of widespread debt problems coupled with insufficient means of resolving them (Jensen, 2022). Recent DfDs have been complex transactions involving many different stakeholders and aimed at dealing with private creditors.¹⁹ Simply described, DfDs work by having a commercial special purpose vehicle (SPV) provide a loan to a government based on the proceeds from a newly issued bond. The bulk of the new loan to the government is then used to buy back existing bond debt, which for highly distressed countries is typically trading at deep discounts. The logic is that this will generate fiscal savings by reducing principal and interest payments, and that part of these savings will allow the country to reduce its debt burden while the remainder will be used to finance a development objective.²⁰

To ensure that private creditors will be willing to lend new money to the troubled government, a third party with a solid creditworthiness (typically one or more development banks) will provide credit enhancements on the new loan in the form of full or partial guarantees on principal and interest repayment. The specific development priority attached to the DfD is conditionality charged by the third-party for its support. The transaction structure ensures that the guarantees ripple through to the underlying bond, which then receives a high (investment grade) credit rating and thus a lower yield than what the country would have to pay if it were to issue new debt. Oftentimes an impossibility, as market access has been lost. The higher the credit rating of the new bond, the lower the yield (cf. Figure 2).

Using a higher creditworthiness to provide below market rate loans to DEs is essentially what development banks do. Under a DfD (or guarantee provisions in general) the difference is that the development bank incentivizes private creditors to do the direct lending by indirectly taking on part, and oftentimes, all of the credit risk.

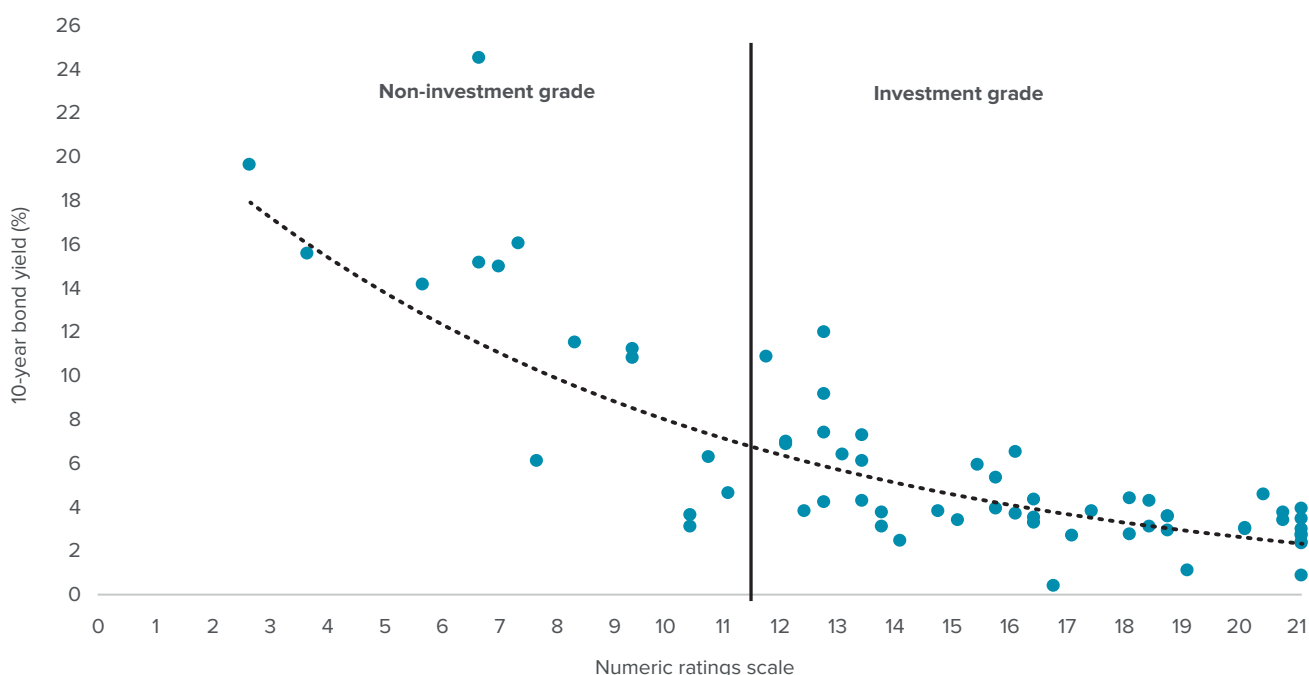
The significance of credit enhancements provided in DfDs is reflected in the large difference in credit rating between the new bond and the countries' standalone sovereign rating. In the four most recent cases of Barbados, Belize, Ecuador, and Gabon, the new bonds have all received a 'high investment grade' rating (i.e. Aa2 by Moody's which is equivalent to numeric value 19 in Figure 2) as much as 13 to 16 rating notches higher than the standalone rating.²¹ A difference of five rating notches can easily result in a 200bp saving (cf. Figure 2), in other words, it is easily 20 times higher than estimated greeniums (cf. Box 2).

¹⁹ See for instance a detailed description of the Belize DfD in (Fontana-Raina & Grund, 2024).

²⁰ In general, the less the estimated fiscal savings earmarked for new development spending, the more the country can reduce its debt burden. This is because if all of the fiscal savings accruing from the DfD were earmarked for new development spending, the country would not be able to reduce its total expenditure (without trading off other spending areas) and, therefore, it would not (immediately) improve its fiscal balance.

²¹ If the new bond receives a rating equal to that of the guarantor, it is reasonable to assume that the rating agency has assessed that the guarantor has taken on all of the issuer's credit risk.

Figure 2. Sovereign bond yield versus credit rating



Source: Based on ratings from Moody's, Fitch and S&P and ten-year bond yields (August 2023) reported by www.worldgovernmentbonds.com.
 Note: Investment grade refers to BBB or higher for S&P and FITCH, or Baa3 or higher for Moody's. This corresponds to a numerical value of 12 or above in the figure.

As development conditionalities in DfDs have mostly targeted marine conservation, the bonds issued have been labelled 'blue bonds' and the loans to governments 'blue loans' even though the share of bond proceeds going to conservation spending has ranged widely from close to 100 to 25 percent (Palacios, Verhoeven, & Gautam, 2023). This has led the ICMA to criticize DfDs for not being aligned with green and blue bond principles, which require that proceeds be exclusively used for eligible development spending (White, 2023). As an example, the \$500 million blue bond issued as part of Gabon's DfD in August of 2023 is estimated to unlock \$75 million in total, or \$5 million a year for the next 15 years for conservation spending (U.S. Embassy in Gabon, 2023). The critique has led the Total Nature Conservancy (TNC), a nonprofit that has pioneered many of the recent DfDs, to drop the term 'blue' to avoid confusion with ICMA principles, and instead refers to bonds used in these deals as 'nature bonds' (Bryan, 2023).

DfDs may seem like a perfect solution for debt-troubled countries struggling to mobilize resources for new development spending. However, evaluating their effectiveness and desirability is more complex. DfDs on their own are unfortunately not large enough to effectively resolve the structural fiscal problems faced by countries heavily burdened by debt; however, in some countries, DfDs can be part of the solution.

Analyzing the deals concluded in Barbados, Belize and Ecuador, the ratings agency S&P concluded:

Despite lowering the debt burden, none of these transactions has changed the issuer's fundamental credit characteristics or led to higher ratings.

(S&P Global Ratings, 2024a).

The largest DfDs in both absolute and relative terms have been carried out in Belize and Ecuador. In May of 2023, Ecuador concluded the largest DfD to date, buying back \$1.65 billion of bond debt funded under guarantees from the US International Development Finance Corporation (DFC) and the Inter-American Development Bank (IDB).²² Nevertheless, the country's credit rating has not improved and has since been placed on negative watch.²³ In 2021 Belize bought back \$553 million of bond debt similarly funded under a DFC guarantee. From 2020 to 2022 the country managed to bring down public debt (as a percentage of GDP) by an impressive 37 percentage points from a high of 101 percent to 64 percent. The reduction was attributed to a combination of the 2021 DfD deal (which reduced the public debt ratio by 9 percentage points from 2020-2021), a large fiscal consolidation, strong real GDP growth, high inflation and a discount on bilateral debt to Venezuela (IMF, 2023b).

Aside from being ineffective substitutes for comprehensive debt restructurings, there are a number of additional challenges with DfDs. Some have criticized them for reducing national ownership of country development strategies and for being costly, due to their complicated transaction structures (Padín-Dujon, 2023). On the contrary, some argue that even though ownership and cost concerns are valid, the instrument (as applied in Belize) is innovative, as it can provide investors and third-party supporters with greater assurances that governments will stay committed to the agreed development priorities, for instance, by introducing SLB features (Fontana-Raina & Grund, 2024).²⁴

The effectiveness of comprehensive credit enhancements in reducing government borrowing costs remains somewhat unclear. While the DfD loan comes at a lower interest rate than what the country would be able to get on the markets at the time of the deal, it is not always clear that the new underlying bond will receive a price comparable to its low credit risk (and high rating). Therefore, the interest rate charged on the government's new borrowing need not be much different – and in some cases could be higher – than the coupon on the repaid bonds. Box 3 takes a closer look at the complexity and cost of DfDs focusing mostly on the well-studied case of Belize.

Box 3. DfD complexity and cost

In November of 2021 Belize concluded its DfD with the main stakeholders TNC, Credit Suisse, the DFC and old bond holders. To buy back all of its external bond debt (a large single bond called the Superbond) of \$553 million, Belize needed \$301 million as the bond was trading at a deep discount. As part of the DfD, Belize took out a new so called 'blue loan' of \$363 million which is expected to be fully paid back by 2040. The new loan was provided by a TNC subsidiary called the Belize Blue Investment Company (BZBIC) set up as a special purpose vehicle and registered as a limited liability company in the state of Delaware, USA. BZBIC received funding for the loan in the form of a loan from investment bank Credit Suisse. Credit Suisse then repackaged the loan and sold it as 'blue bond' notes through a wholly owned subsidiary by the name of 'Platinum Securities Cayman SPC Limited' described as a bankruptcy-remote special purpose vehicle specifically set up for the Belize deal ((Fontana-Raina & Grund, 2024), (Credit Suisse International, 2022)). BZBIC's loan to the government of Belize was covered by a \$610 million political risk insurance provided by DFC covering both principal and interest payments (DFC, 2021), and the DFC covers some of its insurance risk by purchasing reinsurance on the private market (TNC, 2022). The Belize deal also includes a so-called parametric catastrophe insurance which guarantees principal and interest payments in the event of qualifying tropical storms and hurricanes.

²² In Ecuador the DFC provided political risk insurance covering the full amount of the new loan worth \$656 million and, moreover, the Inter-American Development Bank provided \$85 million to insure interest payments.

²³ On 11 January 2024, S&P put Ecuador's B- rating on negative watch, citing among other factors, substantial debt amortization in 2025-2026 and uncertainty about Ecuador's access to global markets (S&P Global Ratings, 2024b).

²⁴ In Belize's case, a failure of government to make running payments to the conservation fund can trigger a default on the loan and accelerate all accrued but unpaid interest payments as well as the full principal amount to be payable immediately. Furthermore, a failure to reach agreed milestones will increase the annual government payments to the conservation fund.

Box 3. Continued

After settling with old bondholders, the additional \$62 million borrowed by Belize covered transaction costs (\$10 million), an 'original issuer discount' for the 'blue bond' investors (\$18 million), the funding of a debt service reserve account (\$10 million) and an endowment (\$24 million) to a trust fund to be used for marine conservation spending after 2040. Moreover, over the 19 years of the new loan, Belize will have to pay more than \$27 million in insurance, management and trust fees, and marine conservation contributions to the established conservation fund of close to \$80 million, or \$4.2 million per year.²⁵

The costs of the new borrowing are also worth considering. Most importantly, and in addition to the debt service reserve account and hurricane insurance, Belize's new loan benefits (and thereby also the underlying new bond) from DfD's political risk insurance, and the DfD is backed by the 'full faith and credit' of the United States (Aaa-rated) government. It is, therefore, not obvious (at least to the author) that the interest rate on the new loan (starting at 3 percent and stepping up to 6.04 percent in 2026) is a great deal, especially considering that when Belize completed its DfD, a 20-year US Treasury bond was trading at a yield below 2 percent.²⁶ In comparison, Belize's repaid Superbond had a coupon of 6.77 percent. In Gabon's case, the author has not been able to find information on the interest rate on the new loan, but the underlying bond was issued with a coupon of 6.097 percent compared to a weighted average of 6.9 percent on the repaid bonds.²⁷ In Ecuador's case, the new loan carries a higher interest rate (6.975 percent) than the weighted coupon on the bonds bought back (6.34 percent).²⁸ As for borrowing costs, Barbados seems to have received the best deal, as the new loan carried an interest rate of 3.8 percent, or a so-called 'all-in' interest rate of 4.9 percent, compared to a weighted average interest rate of 7.2 percent on the bonds repaid.²⁹

DfDs have also been criticized for reducing national ownership of countries' development strategies, as external stakeholders gain influence over national spending decisions and as DfDs can commit future governments to specific development projects and spending. As an example, the execution of the estimated development spending in the cases of Barbados, Belize and Ecuador is expected to take between 15 to 19 years (S&P Global Ratings, 2024a).

Finally, and perhaps most fundamentally, the estimated fiscal saving in a DfD rests on the not always trivial assumption (given levels of debt distress) that countries would have continued to service their debt in full without the DfD. If debt problems persist, and countries still have no means of obtaining effective debt relief, DfDs run the risk of forcing countries to redirect development spending from other areas to the priorities laid out in the DfD.

Kenya, who according to its latest debt sustainability assessment is considered at high risk of debt distress, has announced its intention to issue an SLB in 2024 with the assistance of the World Bank including a guarantee to lower the country's borrowing costs (Bloomberg News, 2024). This could represent another strategy by official development institutions for utilizing thematic debt instruments to provide some debt relief in highly debt vulnerable DEs. Furthermore, SLBs offer advantages over UoPs as the reporting burden is less and funds can be allocated with greater freedom.

²⁵ This is based on the information provided in (Fontana-Raina & Grund, 2024) and in Belize's 2022 IMF Article IV Report (IMF, 2022).

²⁶ The loan has a step-up structure starting at 3 percent in 2022 and gradually rising to 6.04 percent by 2026 where it stays till the loan is fully repaid in 2040 (IMF, 2022).

²⁷ Gabon bought back \$95 million of its 2025 bond (with a coupon of 6.95 percent), \$105 million of its 2031 bond (6.625 percent) and \$300 million of another 2031 bond (7 percent). See (Standing, 2023b).

²⁸ This is based on data provided by the Government of Ecuador (Government of Ecuador, 2023) and (Government of Ecuador, 2020). Ecuador bought back \$202 million of its 2030 bond notes, \$1,006 million of its 2035 bond notes and \$420 million of its 2040 bond notes. All bonds had a step-up coupon starting at 0.5 percent in 2021 and ending at 6.9 percent. The underlying bond was issued at a 5.645 percent coupon. It is unclear whether the higher 6.975 percent paid on the new loan is also meant to cover fees, discounts, conservation contributions, etc. on top of repaying bondholders (Galapagos Life Foundation, 2023).

²⁹ According to TNC 'all-in' includes guarantee fees and TNC advisory, monitoring and reporting cost recovery (Total Nature Conservancy, 2023).

In the EU many MS obtain access to cheaper funding of green and other eligible expenditures through the EC's NGEU (green and non-green) bonds, under which the EC is also set to become the world's largest GB issuer.³⁰ By leveraging the strength of its Aaa-rated MS, NGEU bonds obtain a higher credit rating, and thus lower yield, than most MS could achieve independently.³¹ Eligible green expenditures (as estimated in MS' Recovery and Resilience Plans) qualify for NGEU GB funding (European Commission, 2024). The model leaves countries with some fiscal flexibility in terms of accessing and using NGEU GB funding. First, this is ensured by allowing countries access to 13 percent as pre-financing, i.e. without any requirements on reporting on milestones and targets and therefore also on eligible green expenditures (European Commission, 2022). Second, by allowing countries to access additional funding based on the achievement of milestones and targets. Milestones relate to more qualitative steps in the progression towards implementation, e.g. policy reform, legislation and administrative steps. Targets relate to more quantitative steps tied to actual implementation and goal achievement, such as number of energy renovations undertaken or amount of renewable energy capacity installed and are, therefore, more closely related to actual green expenditures. By giving countries access to funding based on qualitative milestones aimed at strengthening economies and enabling concrete green investments, eligible green expenditures accounted for (as per the EU Green Taxonomy, cf. Box 1) are allowed time to catch up to green funding received. Finally, the model allows countries to use EU funds to refinance incurred green expenditures over the programme period.

The EU has also announced its global green bond initiative (GGBI) with the aim of supporting the development of GBs in DEs using a combination of technical assistance and financial de-risking, i.e. credit enhancements including the use of guarantee-instruments (European Union, 2023):

The Global Green Bond Initiative will facilitate the flow of private capital from institutional investors into climate and environmental projects in EU partner countries, thereby increasing their access to capital. It will do so notably by providing technical assistance to green bond issuers in emerging markets and developing economies (EMDEs) and by crowding in private investors through a dedicated de-risked fund, which will act as an anchor investor in these economies' green bonds. The fund's anticipated impact could spur green investments totaling up to €15-20 billion

(EIB, 2023).

Little information about the GGBI has been made public to date, but from the description above there are clear parallels to the existing Amundi Planet Emerging Green One fund (AP EGO), which has successfully attracted institutional investors to emerging market corporate GBs using a combination of a de-risked fund structure and the provision of technical assistance to issuers. More specifically, AP EGO is a close-ended fund designed to tap the vast resources of institutional investors to invest in emerging market GBs issued by private banks. Using a layered fund structure where an official sector development partner (here the World Bank's IFC)³² takes the first loss (equity) highest credit risk tranche, the fund successfully attracted institutional investors to its senior lower risk tranche at a ratio of 1:16 (IMF, 2022). The fund starts by investing in OBs and over time, with the help of technical assistance and training for issuers on identifying projects, gradually shifts the portfolio to GBs with a plan to invest a total of \$2 billion.³³

³⁰ See for instance (Bahceli, 2021) and (Hinsche, 2021).

³¹ NGEU bonds are receiving the highest credit rating due to the backing of Aaa-rated EU MS and thus receive much higher prices than most EU MS could receive for their own bonds. See (FitchRatings, 2023b) and (European Commission, 2023c).

³² <https://www.ifc.org/en/home>

³³ See (Amundi Asset Management, 2017) and (Amundi Asset Management, 2021).

Five features of a developing economy green bond model

6

While donor support strategies for thematic debt can potentially help mobilize more private finance, they are constrained by high levels of debt vulnerabilities in many DEs and also different from calls made to supply more direct grant funding for climate action, including to middle-income countries. For a green debt model to be successful (i.e. increase the probability of additionality) and fair, the official development sector needs to commit substantial funding in the form of loss absorbing capital and/or guarantees.

Five features are crucial for any official sector-supported model to increase the probability of achieving additionality and align with a ‘global just transition’, regardless of the model’s specific design.

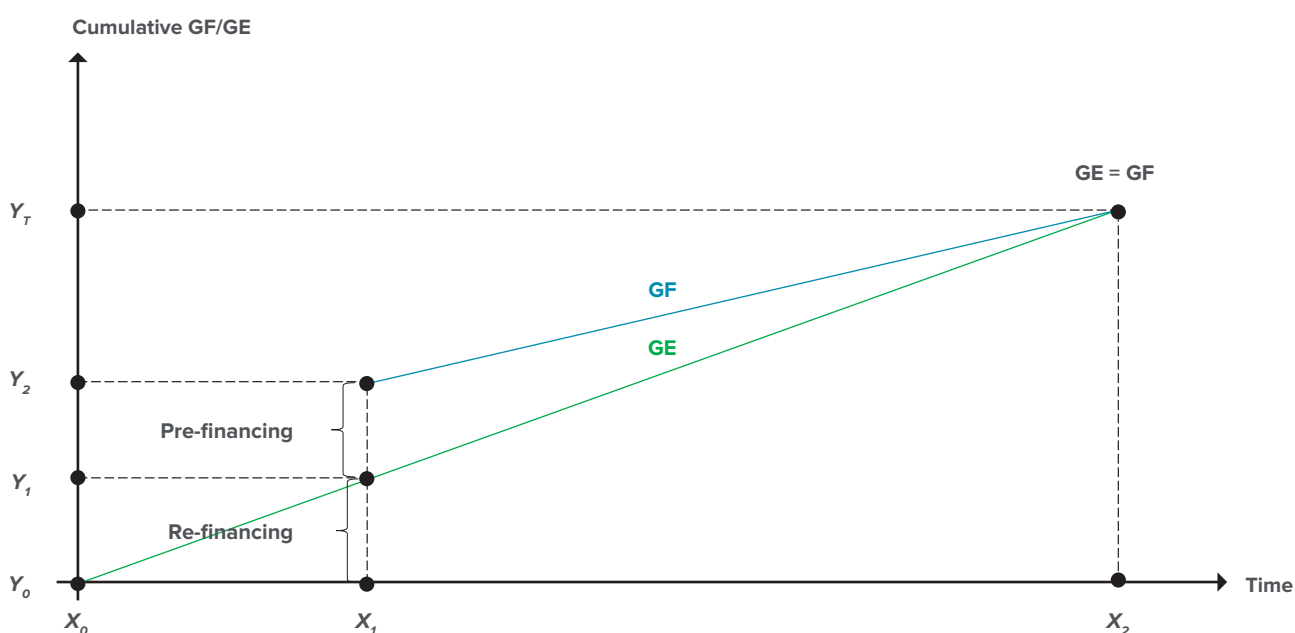
1. **Increase market access to long-term capital at substantially lower funding costs:** To do so, a strong credit enhancement component is needed to lower the credit risk to a level that will result in a substantial baseline reduction in the country’s borrowing costs and thereby also help attract more risk-averse private investors with longer investment horizons. Such multilateral efforts targeted at substantially reducing the funding costs of climate action in DEs is necessary to achieve our global climate goals formulated in the Paris Agreement.³⁴ However, it is equally necessary to ensure a ‘just’ global climate transition as most DEs are ‘carbon creditors’, meaning that they will never be able to use their fair share of the global carbon budget (Molina, Jensen, & Ortiz-Juarez, 2024).
2. **Provide capacity building on green transition strategies and project development:** Many DEs will need technical assistance in designing and implementing long-term green transition strategies, including the identification, appraisal, and selection of high-quality green investment projects. Multilateral Development Banks (MDBs), in particular, are well positioned to provide such assistance.³⁵
3. **Allow for considerable intertemporal fiscal flexibility:** Recognizing the need for capacity building and considering widespread fiscal constraints, DEs should be allowed a significant period for refinancing, a substantial degree of pre-financing and an extended timeframe to account for green expenditures (cf. Figure 3 for illustration). Inspired by the NGEU GB model, countries could be allowed access to funds early on based on qualitative reform and policy targets and move gradually towards quantitative targets including actual green expenditures.
4. **Improve the green credibility:** To do so, the focus needs to be both on improving the credibility of green expenditure accounting and verification at the project level, as well as tracking the overall/ aggregate green performance of the country. As the latter is ultimately what matters, it would make sense to allow for an easing of project level reporting requirements as long as countries continuously reach ambitious aggregate green targets, for instance, as formulated in NDC plans.

³⁴ The IEA estimates that EMDEs (outside China) will need to increase clean energy investments more than sixfold over the next ten years to have a fair chance of limiting global warming to 1.5°C degrees, and the main hurdle facing project developers is securing affordable financing (IEA, 2024). Encouragingly, mitigation finance in EMDEs can go a long way. As an example, research shows that each dollar invested in GBs that finance renewable electricity or heat production in Africa helps avoid more than three times the number of emissions than in Europe (Elise & Helfre, 2022).

³⁵ As an example, GISD with UNDP and DESA has developed a set of guidelines for issuing sovereign SDG bonds (GISD, 2024).

5. **Ensure strong financial incentives:** As argued in the first feature, a model should deliver a substantial baseline level of concessionality. To further enhance incentives and commitments to prioritize green activities, additional financing rewards (on access to funds and/or borrowing cost) could be tied to the overall performance on ambitious green national targets as mentioned under the fourth feature. It is also worth considering the feasibility of using performance targets tied to the implementation and use of 'first best' policies and regulations that help drive the green transition, for instance, the use of carbon pricing, energy efficiency standards, fossil fuel subsidy reform, etc. Climate policies that mobilize revenue (such as carbon pricing) or reduce or redirect harmful expenditures (such as fuel subsidy reforms) are necessary complements to new climate expenditures, and particularly relevant in debt vulnerable countries.

Figure 3. Cumulative Green Financing (GF) and Eligible Green Expenditures (GE)



X0 → XT: The full programme period. **X0** is the first year from which the country can count its **eligible green expenditures (GE)** towards **green financing (GF)** received. **X1** is the first period in which the country receives GF. **XT** is the end of the programme period.

X1: The country can access GF up to a maximum of **Y2** where **Y1-Y0** equals GE already incurred over the period **X0 → X1** (refinancing). **Y2-Y1** is the allowed pre-financing, for example set as a percentage of the estimated cumulative GE, **Yt**, at the end of the programme period, **XT**.

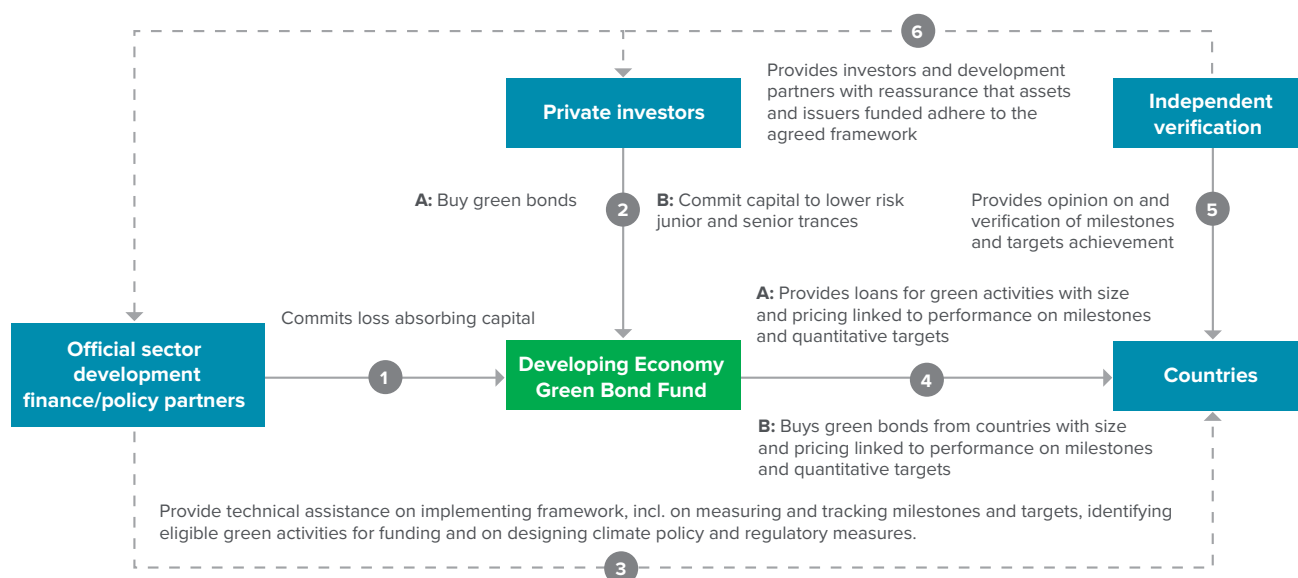
X1 → XT: Cumulative (and verified) GE catches up to cumulative GF over time and reaches **GE = GF** at time **Yt**. Alternatively, cumulative GE could also be allowed to be permanently lower than cumulative GF by some percentage.

The priority of this section is to identify the features necessary for an effective and fair model as described above, rather than proposing a single ideal model design. The specific model (or models) best suited to deliver these features remains an open question, but two options are broadly outlined below (and in Figure 4).

Option A is inspired by the NGEU GB model, which helps fund green activities in EU MS. In this model, one central supranational organization issues the class of DE-tailored GBs. The proceeds are then lent to DE sovereigns to help them fund green activities under the new framework. These loans are highly concessional (meaning far below market rates) with further financial incentives linked to country performance on qualitative and quantitative targets, including the use of climate policies and performance on aggregate development targets. Incentives are granted as access to more funds (loans) and/or lower interest rates. Whereas NGEU funding is concessional (below market rates) for many EU MS due to the strength of Aaa-rated members (and the EC's authority and ability to raise tax revenue), using this option, credit risk mitigation will be delivered to private investors through strong official sector provisions of loss absorbing capital and/or guarantees. Eligible green activities can be identified by countries and their usual development partners, and importantly, MDBs that could also transfer green loans to the organization for refinancing, thereby freeing up their balance sheets for new lending activities.

Option B is inspired by the AP EGO model. Here, a closed-ended investment fund is financed through different risk layers. The official sector takes the high risk first-loss equity tranche, and private investors fill the junior and senior medium- and low-risk tranches. The fund raises private capital on the market once and uses funds to purchase GBs issued by DE governments under the new framework. Investors with a relatively lower risk appetite, such as many institutional investors, are incentivized to invest in low-risk tranches due to the equity buffer provided by the official sector. Importantly, and similar to option A, this model would allow countries to utilize existing relationships with development finance partners (importantly MDBs) to access technical assistance and capacity development aimed at identifying eligible expenditures and developing new green activities and projects. As in option A, providing a significant baseline level of concessionality will require a strong equity buffer, possibly augmented with further credit risk guarantees. To provide strong financial incentives beyond the baseline, the class of GBs issued under this model (similar to the loans in option A) will include sustainability-linked clauses, i.e. with further rewards linked to the country's performance on qualitative and quantitative targets, including the use of climate policies and performance on aggregate development targets.

Figure 4. A green bond model for developing economies



Note: Options A and B described in the main text apply to steps 2 and 4 in the figure.

The amount of official sector funding needed in either model will depend fundamentally on three factors: How much private capital it aims to attract; the level of concessionality it aims to deliver; and the credit quality of the countries it funds. As an example, the total size of the AP EGO fund at its launch was \$1.42 billion and for every dollar of (IFC funded) equity capital, the fund mobilized \$16 from private, mostly institutional, investors. However, such an impressive leverage ratio is only possible as bonds purchased by AP EGO are already close to investment grade, why the equity buffer needed to lower the credit risk of the fund's senior tranche to an acceptable level to institutional investors is relatively small (IMF, 2022). It should also be noted that AP EGO does not have as a specific objective to deliver funds on concessional terms.

MDBs that lend to developing economies broadly mobilize far less private capital. As an example, the World Bank's International Bank for Reconstruction and Development (IBRD) mobilizes about \$4.5 for every dollar of equity.³⁶ IBRD borrows at low costs (which is why it can pass on favourable rates to its debtors) made possible not only through paid in but also large callable capital contributions by its shareholders. When also counting callable capital, IBRD instead mobilizes about 68 cents per dollar.³⁷ However, it is worth noting that even without higher capital infusions, there seems to be some room for MDBs to increase their lending capacity, without compromising their low cost of borrowing, through reforms to their capital adequacy frameworks (G20, 2020).³⁸ Furthermore, hybrid capital offers MDBs an additional approach to expanding their lending capacity while maintaining a strong capital adequacy position.³⁹

Regardless, it is important that donors maintain realistic expectations about leverage, especially considering that a model targeting climate action should deliver a high degree of concessionality and include a large number of DEs to be fair and effective.

³⁶ In 2022 IBRD reported equity of \$50.5 billion, total loans outstanding of \$229 billion and callable capital of \$286.6 billion (IBRD, 2022).

³⁷ Ibid.

³⁸ For more information, CGD keeps a tracker on MDB Reforms: <https://www.cgdev.org/page/mdb-reform-tracker>

³⁹ The African Development Bank (AfDB) was the first to issue a hybrid instrument in early 2024 and during the April Spring Meetings this year the World Bank announced plans to issue \$1 billion in 2024/2025.

Conclusion



Interest in sustainability-themed bonds, in short thematic bonds (TBs), is growing rapidly also among official sector development partners who view these as a potential means of mobilizing more private finance to developing economies. Whether TBs lead to additional sustainability investments and impacts over and above what would have been the case without them is unclear. This paper has argued that TBs are more likely to lead to additional sustainability benefits if they substantially lower funding costs, provide access to new and better capital, facilitate learning, and strengthen commitments to ambitious development targets, all areas more likely to be constraining factors in developing economies rather than in advanced (investment-grade) economies.

Evidence is mixed on whether investors are willing to pay more for sustainability-themed debt, and where pricing advantages have been identified, uncertainty about their longevity and drivers is high. Cases in which issuers have clearly received significantly better pricing and access to new sources of capital, have been facilitated not primarily by the sustainability theme of the bond, but by substantial credit enhancements provided by official sector development finance partners, typically development banks.

More research is needed to understand to what extent TBs improve the quantity and quality of countries' resource envelope, for instance through the possible lowering of liquidity risk and other possible financial benefits not directly linked to the bond issuances. As for learning, it is quite possible that TBs, via their frameworks and requirements, play a positive role, for instance by facilitating government reforms that improve intra-ministerial and development partner coordination and information sharing. If this is the case, however, it would be desirable to disentangle such benefits from TB frameworks and apply them to spending broadly (i.e. spending independently from its source of funding).

Beyond these questions, there are a number of underlying credibility problems tied to TBs, which must be addressed. Importantly, the narrow project focus of UoPs largely ignores the aggregate sustainability performance of the issuer making them prone to greenwashing. For SLBs, which partly aim to address this issue, targets set in bond contracts must be ambitious, and the financial incentives large enough to ensure a strong commitment for SLBs to credibly count as sustainability-themed instruments.

To improve the transformative potential of TBs, this paper has outlined five features rooted in the principles of a 'just global climate transition' that any donor-supported green debt model should embed in its design. Using a combination of UoP and SLB elements and based on strong credit enhancement and technical assistance components, any model should seek to substantially lower funding costs for climate action, increase market access, build capacity, allow for considerable intertemporal fiscal flexibility and incentivize the use of climate-friendly policies and regulations, all while aiming to ensure a strong political commitment to ambitious aggregate climate targets.

Finally, it should be emphasized that the bond route discussed in this paper is only one component of a larger international sustainable finance strategy. Credit-enhanced debt models rely on loss absorbing capital and guarantees from the official development finance sector which will compete for scarce resources with other funding instruments and modalities.

References

- Amundi & IFC. (2023). Emerging Market Green Bonds – IFC-Amundi Joint Report. Amundi and the IFC.
- Amundi Asset Management. (2017). IFC, Amundi to Create World’s Largest Green-Bond Fund Dedicated to Emerging Markets. Amundi Asset Management.
- Amundi Asset Management. (2021). AMUNDI PLANET EMERGING GREEN ONE – Annual Impact Report 2021. Amundi Asset Management.
- Ando, S., Fu, C., Roch, F., & Wiriadinata, U. (2023). How Large is the Sovereign Greenium? IMF Working Paper.
- Bahceli, Y. (12 October 2021). EU Launches First Green Bond with Record Size and Demand. Sustainable Business. Reuters.
- Baker, M., Bergstresser, D., Serafim, G., & Wurgler, J. (2018). Financing the Response to Climate Change: The Pricing and Ownership of U.S. Green Bonds. NBER Working Paper Series.
- Balitzky, S., & Reiche, P. (2023). The European Sustainable Debt Market – Do Issuers Benefit from an ESG Pricing Effect? European Securities and Markets Authority (ESMA).
- Bindman, P. (2023). Are We About to See a Surge in Sovereign Sustainability-Linked Bonds? Retail Banker International.
- Bingler, J. A. (2022). Expect the Worst, Hope for the Best: The Valuation of Climate Risks and Opportunities in Sovereign Bonds. CER-ETH – Center of Economic Research at ETH Zurich, Working Paper 22/371.
- Bloomberg News. (17 April 2024). Kenya to Debut \$500 Million Sustainability-Linked Bond. Bloomberg.
- Boermans, M. A. (2023). Preferred Habitat Investors in the Green Bond Market. De Nederlandsche Bank Working Paper No. 773.
- Bryan, K. (22 September 2023). ‘Sustainable’ Debt Pioneer Ditches Controversial ‘Blue Bond’ Label. Financial Times.
- Cheng, G., Ehlers, T., & Packer, F. (September 2022). Sovereigns and Sustainable Bonds: Challenges and New Options. BIS Quarterly Review, pp. 47-55.
- Climate Bonds Initiative. (2024). Sustainable Debt – Global State of the Market 2023. Climate Bonds Initiative.
- Credit Suisse International. (2022). Unaudited Condensed Consolidated Interim Financial Statements 30 June 2022. Credit Suisse International.
- DFC. (2021). DFC Provides \$610 Million in Political Risk Insurance for Innovative Debt Conversion in Support of Marine Conservation in Belize. U.S. International Development Finance Corporation.
- Dorflleitner, G., Utz, S., & Rongxin, Z. (2022). The Pricing of Green Bonds: External Reviews and the Shades of Green. Review of Managerial Science, pp. 797-834.

Ehlers, T., Mojon, B., & Packer, F. (September 2020). Green Bonds and Carbon Emissions: Exploring the Case for a Rating System at the Firm Level. BIS Quarterly Review.

EIB. (6 September 2023). Global Green Bond Initiative Strengthened by a New Strategic Partnership to Foster Green Capital Markets. European Investment Bank.

Elise, D., & Helfre, J.-F. (2022). Measuring the Impact of Green Bonds. S&P Sustainable Finance Blog.

EU Technical Expert Group on Sustainable Finance. (2020). Taxonomy: Final report of the Technical Expert Group on Sustainable Finance. Brussels: European Commission.

European Commission. (2 April 2024). Reform Support. Retrieved from Recovery and Resilience Plans: https://reform-support.ec.europa.eu/what-we-do/recovery-and-resilience-plans_en

European Commission. (2022). NextGenerationEU Green Bond Allocation Report. Commission Staff Working Document.

European Commission. (2023a). NextGenerationEU Green Bonds. Retrieved from European Commission: https://commission.europa.eu/strategy-and-policy/eu-budget/eu-borrower-investor-relations/nextgenerationeu-green-bonds_en

European Commission. (2023b). Transaction Data. Retrieved from European Commission: https://commission.europa.eu/strategy-and-policy/eu-budget/eu-borrower-investor-relations/transactions-data_en

European Commission. (2023c). EU Credit Strength. Retrieved from European Commission: https://commission.europa.eu/strategy-and-policy/eu-budget/eu-borrower-investor-relations/eu-credit-strength_en

European Parliament. (5 October 2023). Greening the Bond Markets: Meps Approve New Standard to Fight Greenwashing. Press Room. European Parliament.

European Union. (2023). Global Green Bond Initiative (GGBI). Retrieved from Capacity4dev: https://capacity4dev.europa.eu/resources/team-europe-tracker/partner-countries/global/global-green-bond-initiative-ggbi_en

Financial Conduct Authority, United Kingdom. (May 2023). Non Equity Securities. Engagement Paper 4.

Fitch Ratings. (24 October 2022a). Fitch Rates Uruguay's USD 2034 Sustainability-Linked Bond 'BBB-'. Rating Action Commentary. Fitch Ratings.

Fitch Ratings. (29 June 2023a). Fitch Rates Chile's Sustainability-Linked Bonds 'A-'. Rating Action Commentary. Fitch Ratings.

Fitch Ratings. (14 February 2023b). Fitch Affirms European Union and Euratom at 'AAA'; Outlook Stable. Rating Action Commentary. FitchRatings.

Fontana-Raina, S., & Grund, S. (2024). Debt-for-Nature Swaps: The Belize 2021 Deal and the Future of Green Sovereign Finance. Capital Markets Law Journal.

G20. (2020). Boosting MDB's Investing Capacity – An Independent Review of the Multilateral Development Bank's Capital Adequacy Frameworks. G20 Expert Panel.

Galapagos Life Foundation. (2023). Ecuador Blue Bond Seen as Model for Future Efforts REDD. Galapagos Life Foundation.

GISD. (2024). Guidance on Sovereign SDG Bonds for Countries and Investors. Global Investors for Sustainable Development (GISD) Alliance.

Government of Ecuador. (1 September 2020). Listing Circular. Listing of the new Securities and General Information. Government of Ecuador.

Government of Ecuador. (11 May 2023). Government of Ecuador Announces Debt for Nature Swap Operation to Preserve Galapagos Islands' Biodiversity. Gobierno del Ecuador.

Hardy, D. (2022). Alternatives in the Design of Sovereign Green Bonds. Vienna: The Vienna Institute for International Economic Studies.

Hinsche, I. (2021). A Greenium for the Next Generation EU Green Bonds: Analysis of a Potential Green Bond Premium and Its Drivers. Center for Financial Studies (CFS) Working Paper Series, No. 663.

IBRD. (2022). Information Statement – International Bank of Reconstruction and Development. Washington DC: IBRD.

ICMA. (2021). Green Bonds Principles – Voluntary Process Guidelines for Issuing Green Bonds. ICMA.

ICMA. (2023). Sustainability-Linked Bond Principles – Voluntary Process Guidelines. ICMA.

IEA. (2024). Reducing the Cost of Capital. Paris: International Energy Agency.

IMF. (2022). Belize – 2022 Article IV Consultation. IMF Country Reports No. 22/133.

IMF. (2022). Global Financial Stability Report – Navigating the High-Inflation Environment. Washington DC: The International Monetary Fund.

IMF. (2023a). Financial and Risk Indicators. Retrieved from Climate Change Dashboard: <https://climatedata.imf.org/pages/fi-indicators#fr2>

IMF. (2023b). Belize IMF Country Report No. 23/164. Washington DC: The International Monetary Fund.

Jensen, L. (2022). Avoiding 'Too Little Too Late' on International Debt Relief. UNDP Development Futures Series Working Papers.

Kling, G., Lo, Y., Murinde, V., & Volz, U. (2018). Climate Vulnerability and the Cost of Debt. London: SOAS University of London.

Latham & Watkins. (2023). The European Green Bond Standard – The New Green Bond “Gold Standard”? Latham & Watkins.

Lewis, J. (10 February 2022). Sustainable Bond: Chile's US\$2bn Sustainability-Linked Bond. IFR Awards 2022. International Finance Review.

Lindner, P., & Chung, K. (2023). Sovereign ESG Bond Issuance: A Guidance Note for Sovereign Debt Managers. IMF Working Paper – WP/23/58.

Löffler, K. U., Petreski, A., & Stephan, A. (2021). Drivers of Green Bond Issuance and New Evidence on the “Greenium”. Eurasian Economic Review 11, pp. 1-24.

Molina, G. G., Jensen, L., & Ortiz-Juarez, E. (18 January 2024). Convergence 2.0: How Can Growth with a Hard Carbon Budget Constraint Be Achieved? Retrieved from World Economic Forum: <https://www.weforum.org/agenda/2024/01/convergence-2-0-how-can-growth-with-a-hard-carbon-budget-constraint-be-achieved/>

Padín-Dujon, A. (28 February 2023). Do Debt-for-Nature Swaps work? Learning from Belize. London School of Economics (LSE).

Palacios, L., Verhoeven, H., & Gautam, J. (2023). Can Debt-for-Climate Swaps Help Heavily Indebted Developing Countries Address Climate Priorities? Columbia SIPA – Center on Global Energy Policy.

Pietsch, A., & Salakhova, D. (2022). Pricing of Green Bonds: Drivers and Dynamics of the Greenium. ECB Working Paper Series No 2728.

S&P Global Ratings. (27 February 2024a). Debt-for-Nature Swaps Are Gaining Traction among Lower-Rated Sovereigns. S&P Comments. S&P Global Ratings.

S&P Global Ratings. (11 January 2024b). Ecuador Outlook Revised to Negative on Increasing Liquidity Strains; 'B-' Long-Term Ratings Affirmed. Retrieved from <https://disclosure.spglobal.com/ratings/en/regulatory/article/-/view/type/HTML/id/3109373>

Standing, A. (2023b). Gabon's Odious Debt-for-Ocean Swap: The Implications for Ocean Governance. Brussels: Coalition for Fair Fisheries Arrangements.

TNC. (2022). Case Study – Belize Blue Bonds for Ocean Conservation. The Total Nature Conservancy.

Total Nature Conservancy. (2023). Case Study – Barbados Blue Bonds for Ocean Conservation. The Total Nature Conservancy.

U.S. Embassy in Gabon. (15 August 2023). DFC Political Risk Insurance to Support a Blue Bond Providing \$500 Million for Ocean Conservation in Gabon. Retrieved from <https://ga.usembassy.gov/dfc-political-risk-insurance-to-support-a-blue-bond-providing-500-million-for-ocean-conservation-in-gabon/>

UK FCA. (29 June 2023). Review of the Sustainability-Linked Loans (SLL) Market. United Kingdom Financial Conduct Authority.

White, N. (17 September 2023). Debt Swaps Arranged by Credit Suisse, BofA Face Scrutiny. Bloomberg News.

World Bank. (2022). Sovereign Green, Social and Sustainability Bonds – Unlocking the Potential for Emerging Markets and Developing Economies. Washington DC: The World Bank.

World Bank. (2023). The World Bank's Role in and Use of the Low-Income Country Debt Sustainability Framework. Washington DC: World Bank Independent Evaluation Group.

World Bank Treasury Department. (2024). Sustainable Finance and ESG Advisory Services. Retrieved from GSSS Bond Market: <https://treasury.worldbank.org/en/about/unit/treasury/client-services/sustainable-finance-advisory?#4>



Copyright © UNDP June 2024
All rights reserved
United Nations Development Programme

1 UN Plaza, New York, NY 10017, USA

Online ISSN: 3005-3307