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Scaling Sustainability-linked Sovereign Debt

March 2023



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About this Paper

A viable market for sustainability-linked debt can address the triple challenge of public debt distress, climate shocks and nature degradation. This paper charts out building blocks, use cases and possible pathways for scaling sustainability-linked sovereign debt. Pathways explored include credit enhancement, catalytic financing, standardisation, capacity building, regulation, fiscal frameworks, and nature market linkages. Barriers to achieving scale are also addressed, from data and technology shortfalls to restrictive accounting practices and coordination failures among key stakeholders. As a way forward, the paper calls for coordinated, ambitious interventions by key stakeholders across the sustainable sovereign financing universe.



The Sustainability-linked Sovereign Debt Hub brings together actors from the entire spectrum of the sovereign sustainability-linked debt universe. Founded to facilitate the growth of the performance-based sovereign debt market, the Hub supports initiatives that build nature and climate performance into models of sovereign financing. A high-level Advisory Board provides the Hub with strategic guidance and assistance.

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The Hub Advisory Board



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*Observer status

Acknowledgments

This paper was authored by Arend Kulenkampff, Julie McCarthy, Justin Mundy, Gregor Pipan and Simon Zadek with contributions from Dorothee Herr, Hiba Larsson, Rupesh Madhani, Louis de Montpellier and Barbara Oldani.

The authors would like to thank Jean-Paul Adam, Ahmed Rashad Attout, Kevin Bender, Erik Berglof, Isabelle Braly-Cartillier, Rola Dashti, Rowan Douglas, Andrew Deutz, Giovanni Leo Frisari, Slav Gatchev, Sonja Gibbs, Valérie Guillaumin, Michael Hugman, Sean Kidney, Irem Kizilca, Isabelle Laurent, Alexander Lehmann, Seleha Lockwood, Anouj Mehta, Mahmoud Mohieldin, Peter Onyango, Vishnu Papineni, Nicholas Pfaff, Marcin Sasin, Anderson Caputo Silva, Paul Steele, Fiona Stewart, Nigel Topping, Alexander Vasa, Jeromin Zettelmeyer and Sanjiv Ye Zou.

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This work has been made possible by support from the Children's Investment Fund Foundation (CIFF) and the State Secretariat for Economic Affairs SECO.

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Executive Summary

Sovereign, climate, and nature risks are increasingly interlinked. As the costs of climate catastrophes and nature degradation escalate, governments of vulnerable countries are forced to dedicate larger shares of their budgets to cover catastrophic losses, replenish buffers, and invest in urgent climate mitigation and adaptation projects.

Vulnerable sovereigns lack fiscal space to accommodate these spending pressures. Debt burdens are elevated as a result of heavy pandemic-related borrowing. At the same time, debt servicing costs are rising on the back of higher global interest rates. Emerging-market capital flows have reversed amid investor flight to safety, and budget deficits remain large due to the worldwide economic downturn.

The triple design challenge is to restore debt sustainability, mobilise funding for climate and nature goals, and build resilience against future shocks. The scope for sizeable investments in resilience and productivity enhancing measures is at best limited. However, without such investments vulnerable countries risk being dragged into a downward spiral of unsustainable debt burdens, deteriorating creditworthiness, and diminishing economic dynamism. Against this backdrop, safeguarding biodiversity will remain a lesser priority for distressed sovereigns.

Sustainability-linked sovereign debt (SLSD) offers an innovative set of tools to halt and reverse this downward spiral, providing a solution to the triple design challenge. SLSD instruments lower borrowing costs by unlocking new sources of capital for Emerging Markets and Developing Economies (EMDEs), especially when paired with credit enhancement that lowers the credit risk of such instruments. They enhance the accountability and credibility of governments' climate and nature pledges by establishing clear performance metrics and financial incentives to achieve them. They also help to insulate economies from future shocks by incorporating adaptation targets.

2022 was considered the 'proof of concept' year for sustainability-linked sovereign financing. Two successful issuances of sustainability-linked sovereign bonds and several performance-based restructuring deals have validated the key design features of SLSD.

The challenge now is to rapidly scale up the sustainability-linked sovereign debt market. The size of the market could reach between US\$250-400 billion by 2030 in EMDEs alone, according to estimates in the report. This is a vast underestimate once advanced economies and local markets are factored in.

Pathways have been identified to achieve this scaling potential in the medium term. The role of critical supply- and demand-side drivers are presented in the analysis, including credit enhancement, standardization, and capacity building for issuers.

Major bottlenecks and pitfalls along the SLSD value chain must be overcome to achieve scale. Questions about the uptake of SLSD by investors are also explored and address some of misconceptions surrounding the "investability" of such instruments.

Sustainability-linked sovereign debt is unlikely to scale to its potential without coordinated, ambitious interventions by key stakeholders in this space. These efforts must be directed towards building the capacity of issuers; pooling balance sheets of insurers and multilateral development banks (MDBs), and other creditors. Attention must also be given to harmonising KPIs and best practices for measurement, reporting and verification.

7 Scaling Pathways for Sustainability-linked Sovereign Debt

1



CREDIT ENHANCEMENT

stimulates demand for SLSD, and by extension, lowers the borrowing costs of SLSD by de-risking transactions and crowding in private investors to multiply the impact of public funds.

2



CLIMATE/NATURE/DISASTER RISK

finance initiatives can incorporate SLSD in their arrangements to strengthen the credibility of commitments and crowd-in private finance.

3



STANDARDISATION

creates a common denominator for market participants to measure and evaluate performance, promote best practices and build trust between the contractual parties.

4



CAPACITY BUILDING

covers the variety of efforts to make up for shortfall in technical and human capacity needed to structure and launch SLSDs on the issuer side, as well as campaigns to raise awareness and address misconceptions on the investor side.

5



ENABLING REGULATION AND MARKET DEVELOPMENT

encompasses rules set by financial and monetary authorities that can hinder or support market uptake and liquidity, as well as direct policy interventions to stimulate demand for SLSD instruments.

6



FISCAL RULES AND FRAMEWORKS

can encourage (or hinder) the adoption of SLSD instruments by sovereigns, and so impact the extent to which these instruments can be accommodated within longer-term budget plans and public financial management strategies.

7



NATURE MARKET LINKAGES

both expand the range of KPIs and SPTs available for SLSDs, and connect nature-based revenues that can support performance in pursuit of nature-related goals.

Awareness and socialisation of the concept of SLSD among investors, underwriters, and other key market participants is also needed.

This report seeks to contribute to the latter by further elucidating the opportunities and challenges of performance-based sovereign financing.

The Sustainability-linked Sovereign Debt Hub seeks to actively shape the enabling environment for these solutions to thrive. The Hub's efforts benefit from the strategic guidance and assistance of the high-level Advisory Board, which includes international and development finance institutions, financial sector associations, and expert groups.

The Crisis in Sovereign Financing

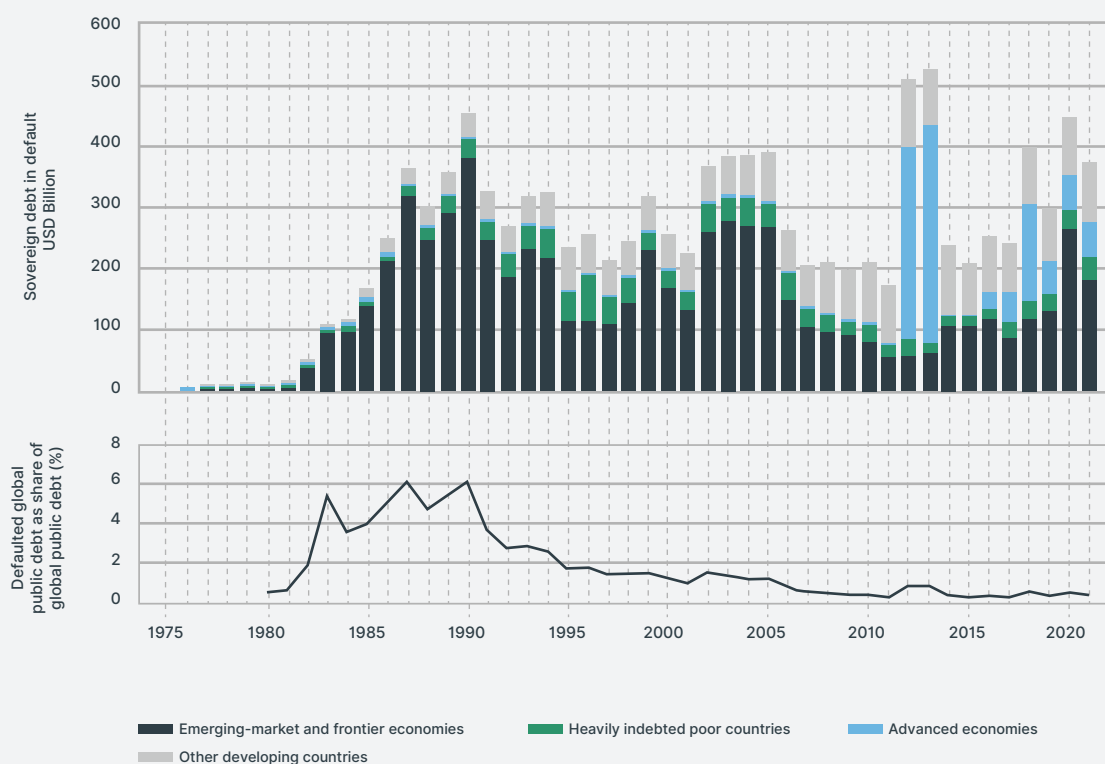


The Crisis in Sovereign Financing

Low- and middle-income countries are facing unprecedented fiscal stress and diminished access to finance. This is worsened by the lingering impact of COVID-19, the war in Ukraine, and the challenging global interest rate and funding environment. According to the IMF, about 15 percent of low-income countries are already in debt distress and an additional 45 percent are at high risk of debt distress. Among emerging markets, about 25 percent are at high risk and facing default-like borrowing spreads.¹ Achim Steiner, the Administrator of UN Development Programme (UNDP), warned at COP27 that over 50 countries are at risk of default.²

In addition to experiencing high levels of public debt, many of these countries are also confronting a climate crisis that is adversely affecting their economies and poses both immediate and long-term risks to sovereigns and investors. This situation has an outsized potential to negatively affect biodiversity as communities turn to practices that deplete nature to support their livelihoods.³

Figure 1 Rising risks of sovereign debt distress



Source: WEF⁴

Current international negotiations to address the mounting debt burdens of Emerging Markets and Developing Economies (EMDEs) have made little progress. Efforts to deliver a comprehensive and coordinated solution to sovereign debt distress have been hampered by disagreements among major creditor groups. These include an influential contingent of bilateral creditors from China, India, and South Africa, alongside commercial lenders and Paris Club members that led past sovereign debt workouts. Collective action problems inherent in reconciling creditor interests are overlaid with geopolitical divisions and disputes over reform of the international financial architecture.

Consequently, the Common Framework initiative for negotiating sovereign debt restructurings, which for the first time includes non-Paris Club lenders like China, is largely deadlocked. Of the 73 countries eligible for debt treatment under the Framework, only three have applied at the time of writing, and only one (Chad) has arguably achieved resolution. A subsequent push by the Global Sovereign Debt Roundtable – a panel of creditors and borrowers organised by the IMF, the World Bank and India – has had some incremental success at aligning credit interests. However, these efforts have yet to bear fruit.

Alternative proposals to tackle the debt crisis more holistically have promise. These proposals seek to link debt restructurings and relief to broader sustainable development, climate, and nature agendas. For instance, the Bridgetown Agenda⁵ has been successful in concentrating minds on IFI reform and aligning creditors around introducing pandemic and natural disaster clauses in their contracts with debtors — in effect a form of sustainability-linked debt instrument.

Other mooted proposals include revamped versions of the Brady Plan⁶ and the Heavily Indebted Poor Countries (HIPC) Initiative. Under the latter, access to multilateral debt forgiveness would be dependent not just on poverty reduction programmes but also on programmes to implement climate change commitments (Nationally Determined Contributions – NDCs) and National Biodiversity Strategies and Action Plans (NBSAPS). The Sustainable Debt Coalition (SDC) launched at COP27 has been more explicit in linking debt sustainability to climate and nature risks.⁷ However, these proposals still require a high degree of creditor coordination and burden sharing to achieve meaningful, equitable, and enduring debt sustainability.

Without a practical, ambitious vision, the sovereign financing crisis will become chronic in the face of rising climate and nature risks. Overburdened by rising debt service bills, sovereigns lack the fiscal space to invest in urgent resilience-enhancing measure or build up buffers to absorb climate- and nature-related shocks. As these contingent liabilities crystallise, vulnerable countries risk being trapped in a downward spiral of escalating fiscal pressures, widening infrastructure and protection gaps, and deteriorating creditworthiness.

A Theory of Change



A Theory of Change

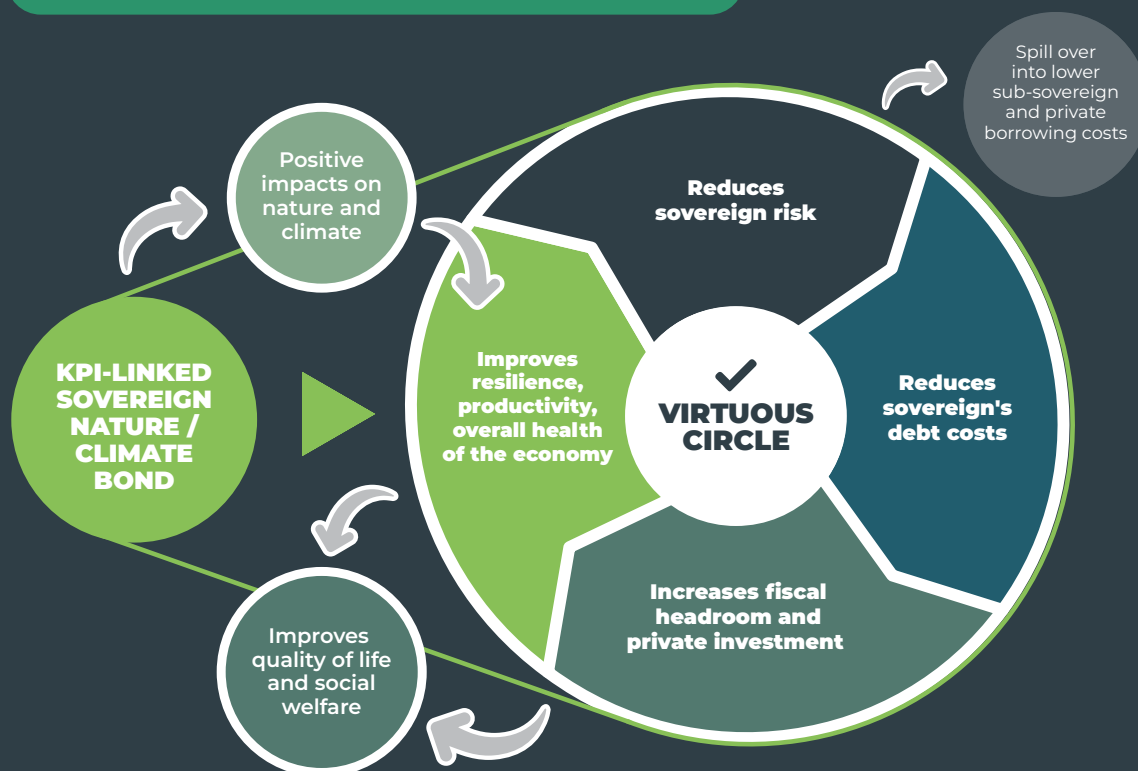
The three-fold design challenge is to simultaneously increase sustainable productivity-enhancing investments, contain debt servicing burdens, and avoid financing crises becoming chronic. On sustainable productivity-enhancing investments, it will be key to channel increased investments into low carbon, climate resilient, nature positive opportunities that have a meaningful impact on domestic productivity and equitable economic development. On containing debt servicing burdens, investments need to feed back swiftly in adjusting perceptions of sovereign risk and associated financing costs. On avoiding chronic financing crises, there is a need to design and deploy instruments while developing financial markets that take account of growing external shocks and thereby reduce reoccurring ex-post debt restructuring.

Sustainability-linked sovereign financing is one way of addressing the three-fold design challenge. Performance-based sovereign financing is not new. It includes several decades of contentious forms of macroeconomic, fiscal and institutional conditionality imposed on debt distressed countries. More recently, there has been the promising development of a distinct form of performance-based financing that links the cost of capital to agreed sustainable development outcomes, notably on climate and nature. Three features make this innovation wave distinct from earlier experience in critical ways. First, the performance model and related indicators are defined by the debtor rather than a one-size-fits-all imposition by creditors or third parties. Second, the model and indicators are focused on substantive supply-side drivers of sustainable development, such as clean energy and forest cover preservation. Third, performance commitments are linked to variations in the cost of capital, which are embedded into the financing instrument offered to the market.

Sustainability-linked sovereign financing solutions aim to deliver a virtuous cycle of increased sustainability-aligned investment, lowered debt service burdens and reduced incidence of debt-related crises.

Sustainability-linked sovereign debt can create this virtuous cycle by (see Figure 2):

- | Directly rewarding positive sustainability outcomes through reduced costs of capital.
- | Incentivising investments that reduce sovereign risks through improved resilience and economic productivity, lowering the cost of capital to sovereigns.
- | Supporting sustainable development outcomes, directly through growth and productivity effects and indirectly by creating fiscal space to support increased public spending.
- | Reducing the need for ex-post debt restructuring by advancing smarter risk sharing between debtors and creditors.

Figure 2 From Vicious Cycle to Virtuous Circle

Source: Sustainability-linked Sovereign Debt Hub - 2022⁸

Whether such financing instruments deliver a virtuous cycle in practice depends on their design, how the market receives them, and whether sovereign issuers achieve their targets. To realise the full upside opportunities from such instruments, the key performance commitments need to advance sustainable productivity increases and resilience, which will in turn reduce sovereign risks. Moreover, sovereigns need to achieve these performance commitments. Finally, the desired impact on sovereign risk pricing depends on market reactions, both through investors' perceptions and responses by rating agencies and the regulatory community.

2022 was considered the 'proof of concept' year for sustainability-linked sovereign financing. The Chile and Uruguay KPI-linked sovereign bonds, issued with step-ups and step-ups/step-downs respectively, demonstrated their practicality for the first time. The appetite for such bonds in the market was also validated, notwithstanding the many champions that have advanced specific debt for nature deals for many years. In addition, the Barbados deal reconfirmed the value of the 'debt refinancing' approach for countries with distressed debt involving credit enhancement.

Over and above specific deals, sustainability-linked sovereign debt have gained prominence in international debt and climate negotiations, including COP27, CBD-COP15 and the World Economic Forum in Davos. A bevy of recent research reports from international financial institutions have studied the relative merits of SLSD compared to conventional and other sustainability-oriented instruments.⁹ The heightened political pressure to incorporate disaster clauses into sovereign debt has marked a further development in KPI-linked deal structures.

The establishment of the Sustainability-linked Sovereign Debt Hub in September 2022 in Cairo at a Pre-COP27 African Finance Ministerial punctuated the end of a period of experimentation and the beginning of a phase of market development. The Hub's high-level Advisory Board brings together key actors in leading and supporting this market development, including multilateral development banks, financial market associations, and key UN bodies and expert institutions. Its early technical and knowledge sharing activities have focused on key market enablers, including case analysis, standards development, credit enhancement and key performance indicators.

The Building Blocks and Use Cases of Sustainability-linked Sovereign Debt



The Building Blocks and Use Cases of Sustainability-linked Sovereign Debt

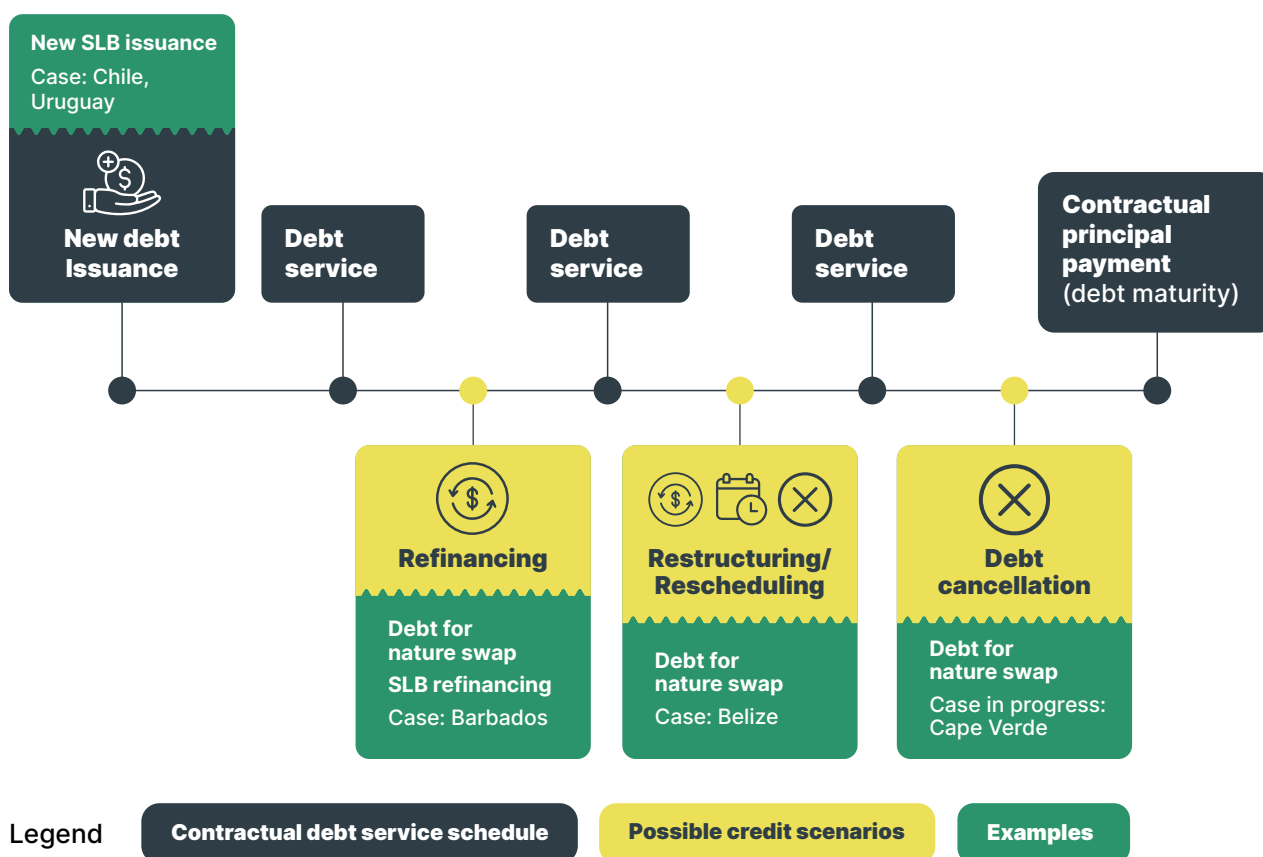
Sustainability-linked sovereign debt (SLSD) is a performance-based financial instrument that commits its issuer to achieving certain predefined and forward-looking sustainability targets. Unlike labelled use-of-proceed (UoP) debt instruments (e.g., green, social or blue bonds), SLSD is not project-based, and the issuance proceeds can be used for general budgetary purposes, meaning they need not necessarily be directed towards specific projects. Sustainability performance targets (SPTs) set out the overarching goals that the issuer seeks to achieve, which may already be specified in existing climate or nature conservation policies, or pledges such as the Paris Agreement’s Nationally Determined Contributions (NDCs).¹⁰ The targets should be ambitious and represent a material improvement in sustainability performance beyond “business as usual.” Progress towards achieving these targets is assessed through select key performance indicators (KPIs), which are relevant, material, quantifiable, externally verifiable metrics that can be benchmarked reliably. Finally, measurement, reporting, and verification (MRV) comprise the data and processes whereby performance is tracked and validated by investors and third parties.

KPI-linking can serve as an effective commitment mechanism, carrying certain advantages over their conventional and UoP labelled counterparts. By making targets financially binding, SLSD instruments can strengthen the credibility of their commitments to investors, society, and negotiating partners. In certain circumstances, they can complement and reinforce policy-based conditionality. Where investors incorporate the implied increase in future resilience to climate and nature shocks in their risk assessments and bond valuations, the credibility boost should be reflected in a higher “sustainability premium” at issuance compared to conventional bonds. This is in addition to the premium gained from tapping into deeper and more liquid pools of investors oriented by environment, social, and governance (ESG) criteria (i.e., the “Greenium”). SLSD may also enjoy greater liquidity over UoP instruments.

This is because the fungibility of sustainability-linked bonds (SLBs) proceeds means they can be used more readily to refinance existing outstanding debt instruments than UoP bonds.¹¹ Fungibility also renders SLBs compatible with the budgetary frameworks of many countries that restrict or prohibit earmarking of proceeds, which can be an impediment to UoP issuance.¹²

The building blocks of Sustainability-linked sovereign debt – performance targets, indicators, and tracking – can be arranged into many different structures. These building blocks constitute a feature set that can be inserted into many sovereign financing arrangements, of which sustainability-linked bonds (SLBs) are but one. For instance, recent debt-for-nature swaps (described below) contained a mix of use-of-proceed bonds and sustainability linked loans. At the core of each structure was a set of sustainability targets, KPIs, and tracking protocols. However as is argued below, adding complexity limits the scalability of such structures. The KPIs and their corresponding payoffs can be configured in any manner of ways to suit the idiosyncratic objectives and needs of the issuing entity. For instance, the debut SLB issued by Chile in 2022 contained only penalties for failing to meet climate transition SPTs (a step-up in coupon rates); the follow-on SLB issued by Uruguay added rewards for overperformance as well as introducing nature-based targets (see Box 1). In these examples the coupon step-up/downs were between 12.5 and 30 basis points, but they could be set higher to strengthen the incentives. Conceivably, any policy objective or issue area can be accommodated within this structure, such as fostering the development of biodiversity credit markets, while KPIs can link to practically any relevant metric, such as the issuance of such credits. Lastly, the SLSD features need not be restricted to only newly issued instruments, but rather they can be introduced at any stage of debt life cycle, including under a range of restructuring scenarios (see Figure 3).

Figure 3 SLSD in the sovereign debt life cycle and credit scenarios



Source: SSDH

The sustainability-linked sovereign bond (SLB) represents the most scalable SLSD instrument. The templates for these were provided by Chile in March 2022 with US\$2 billion 20-year SLB, and shortly after by Uruguay in October 2022 with a US\$1.5 billion SLB maturing in 2034 (see Box 1 for details). Both bonds were structured in alignment with ICMA Sustainability-Linked Bond Principles and issuance was preceded by a lengthy period of market socialisation. As a result, they were both several times oversubscribed.

BOX 1. Two Sustainability-Linked Sovereign Bonds to Date

Chile's US\$2 billion SLB maturing 2042¹³

The selection of KPIs followed the environmental objectives set by Chile's updated Nationally Determined Contributions (NDCs) and is aligned with Chile's strategy of development. The selected KPIs, as well as their rationale, can be found in Chile's Long-Term Climate Strategy (LTCS). The selected sustainability performance targets (SPTs) are consistent with the KPIs and Chile's sustainability goals, established under the LTCS. A step-up provision raises the coupon by 12.5 basis points per KPI, from 4.34% per annum at issuance to 4.59% if both KPIs underperform the SPT at the penalty event date.

SPT	KPI	Rationale
SPT 1: Achieve GHG emissions of 95 MtCO ₂ e by 2030; achieve a maximum of 1,100 MtCO ₂ e between 2020 and 2030.	KPI 1: GHG Emissions per year, measured in MtCO ₂ e.	The mitigation target is formulated in accordance with scientific recommendations, the mitigation requirement established in the Paris Agreement's objectives, and Chile's updated NDC.
SPT 2: Achieve 50% of electric generation derived from Non-Conventional Renewable Energy (NCRE) sources by 2028; achieve 60% of electric generation derived from NCRE sources by 2032.	KPI 2: Non-Conventional Renewable Energy, as a percentage of total generation in the National Electric System.	In an analysis included in the Long-Term Energy Plan 2018-2022, the Ministry of Energy determined that the national carbon targets, as well as the investment pipeline, were achievable with a participation of 40% (or higher) of NCRE in the total generation.

Uruguay's US\$1.5 billion SLB maturing 2034¹⁴

The SLB Framework links Uruguay's sovereign bond financing strategy to its climate and nature targets as established under the Paris Agreement. It describes Uruguay's sustainable strategic priorities and sets out goals with respect to two KPIs, tied to the evolution of the intensity of Greenhouse Gas (GHG) emissions and the area of native forests in the country. The bond included a symmetrical step-up and step-down provision of 15 basis points per KPI in the event of under- or overperformance on the SPTs, respectively.

SPT	KPI	Rationale
SPT 1.1: Achieve a 50% reduction in GHG emissions intensity by 2025 from the 1990 reference year.	KPI 1: Reduction of aggregate gross GHG emissions (in CO ₂ equivalent) per real GDP unit with respect to reference year 1990 (in %).	NDC-aligned, linked to economy-wide Uruguay's performance on the material issue of GHG emissions.
SPT 1.2: Achieve a 52% reduction in GHG emissions intensity by 2025 from the 1990 reference year.		
SPT 2.1: Maintain 100% of the native forest area compared to reference year 2012.	KPI 2: Maintenance of native forest area with respect to reference year 2012 (in %).	NDC-aligned, direct measure of Uruguay's performance on the material issue of native forest area preservation.
SPT 2.2: Achieve a 3% increase of the native forest area compared to reference year 2012.		

Integrating sustainability-linked KPIs into debt relief and debt restructuring can ensure ex-ante that debtor countries follow both sustainable debt and development paths.

The Seychelles and Belize debt-for-nature conversions provided proofs-of-concept that nature outcomes can be incorporated into debt restructuring. Blue bonds were issued in both instances to buy back distressed and defaulted debt, respectively. This effectively swapped vanilla debt for use-of-proceeds debt linked to conservation commitments – designating 30 percent of its national waters as protected areas. Conceptually, the structure could be backed by SLBs instead of blue or green bonds, with the added advantage of writing targets and KPIs into the bond contract. Under an alternative arrangement, straight debt-relief can be conditioned by creditors on debtor commitments to carry out certain actions in support of climate and/or nature related outcomes. For example, in January 2023, the Portuguese government signed an agreement to swap the Cape Verde's debt for an investment in the environment and climate fund that will allow Cape Verde to invest in energy transition and fight against climate change.¹⁵ Nature and climate KPIs could also be built into debt service relief, such as the Debt Service Suspension Initiative (DSSI), to complement and reinforce policy-based conditionality.

Refinancing via labelled or linked debt is not restricted to distressed sovereigns.

The refinancing of the Barbados debt showed that the debt-for-nature swaps can be applied not only as an emergency intervention but also to reduce the costs of debt service before there is an imminent need for restructuring. Similarly, while the fiscal savings generated through credit enhancements were critical for both deals (by underpinning the funding for conservation endowments), credit enhancements are not necessary for all sovereigns, especially higher rated ones. Thus, Chile and Uruguay's sovereign ratings were in the investment grade 'A' and 'BBB' bands at the time of their issuance, and their public debt profiles were manageable. They received significant interest even without credit enhancements.

Performance-linked financing presents its own set of challenges.

The effectiveness of SLSD as a commitment device ultimately depends on whether the KPIs and corresponding payoffs are sufficiently material to induce the necessary actions to achieve the stated targets. In other words, the penalties from a step-up in the coupon may be dwarfed by the actual outlays required to achieve the sustainability performance targets (SPTs), thereby weakening the strength of the incentives.¹⁶ Setting penalties too low may also undermine the credibility of commitments vis-a-vis investors, thereby diluting the potential sustainability.¹⁷ Credibility may also be harmed by concerns about transparency and integrity of the data underlying the KPIs, especially given the inherent incentives for issuers to manipulate data to achieve the target.¹⁸ Investors, for their part, face a perverse incentive to “root for failure” to secure a step-up, although it is unlikely that they would be capable of engineering such an outcome. By contrast, if a step-down looks likely, then it may reduce liquidity for the bond. This is unless investors interpret over-performance to mean an improvement in the credit fundamentals and that merits a higher price for the issue. That prospect is uncertain, however, meaning a step-down might not translate into broader and lasting reductions in borrowing costs. From an issuer standpoint, especially for those in acute debt distress, the long-time lag to reaching the first observation point when a step-down might occur means any relief in debt service costs is deferred to well after the moment when it is most needed. These and other challenges are summarized in Box 2, alongside some counterpoints.

BOX 2. Challenges with KPI-linked instruments

Characteristic	Challenge	Counterpoints
Materiality of incentives	The present value of penalties for under-achieving a SPT is below the cost of achieving the SPT, diluting the potency of the incentive.	Alignment of penalties/rewards with costs of achieving SPTs.
Data transparency and integrity	Perverse incentives to manipulate data to avoid under-achieving SPT or to falsely claim the reward.	Stronger data protection and monitoring technology (e.g., blockchain), independent validation and verification, consistency with international standards, etc.
Time lag to observation point	Upside for either issuer or investor is deferred too far into the future to influence behaviour or provide immediate relief.	Earlier and more frequent observation points.
“Rooting for failure”	Investors stand to benefit individually from issuers under-performing their targets.	A step-up arguably represents a deterioration in the credit fundamentals, which should be reflected in lower valuations. Plus, investors are unlikely to engineer such an outcome.
Liquidity effects of step-up/step-down	Indicators of likely step-downs may sap liquidity from the market; indications of step-ups may make liability management operations harder to execute.	A step-down arguably represents an improvement in credit fundamentals, which should be reflected in better liquidity.
Transaction costs	Additional issuance costs related to second-party opinions and related services, additional fees for sustainability structuring advisors, investments in additional technical capacity/data infrastructure.	Estimates of the marginal tangible cost of SLB issuance do not appear exceedingly high ¹⁹ , and is partially offset by a sustainability premium.
Reputational costs	Aside from a step-up in coupons, issuers may incur additional risk premia from perceived reductions in resilience, and by extension, creditworthiness.	Symmetrical risk distribution via step-up/step-downs.
Regulatory treatment	Uncertainty regarding treatment of SLBs by different sustainable finance regulation across jurisdictions.	Development of common sovereign KPI frameworks and an enhanced dialogue between the supervising agencies, investors' associations and legislators.

Scaling Pathways



Scaling Pathways

The extent to which sustainability-linked sovereign debt can advance sustainable sovereign financing depends on its scalability.

Modestly scaled deals, including refinancing of the whole debt stock of smaller sovereigns, have been effective in delivering proof of concept and policy engagement. However, the needed scale cannot be achieved through the organic growth of the volume of such deals, whatever their individual merits.

Developing a self-sustaining market for SLSD instruments requires unblocking supply- and demand-side constraints.

Supply-side constraints encompass a lack of market access, limited headroom for additional debt (because of already elevated levels), and high transaction costs of structuring deals involving multiple stakeholders. The high transaction costs are magnified for countries with technical, human, and technological capacity limitations such as the lack of timely, standardised, and high-quality data needed to generate KPI. On the demand side, constraints include investors' lack of risk appetite for lower-rated issuers that arguably benefit most from SLSD. In addition, there are concerns about liquidity and regulatory treatment, plus uncertainty over the credibility of commitments and compliance with sustainability performance target (SPTs).

Addressing these constraints to scale SLSD requires a combination of financial innovation, broader policy commitments, improved metrics, development of standards, and engagement by both sovereign creditors and the private sector. The following list in Table 1 identifies seven principal pathways through which the SLSD market could be scaled up. The list is not exhaustive and may expand as the market develops and new drivers emerge.

Table 1 7 Scaling Pathways for Sustainability-linked Sovereign Debt

- 1**  **CREDIT ENHANCEMENT**
stimulates demand for SLSD, and by extension, lowers the borrowing costs of SLSD by de-risking transactions and crowding in private investors to multiply the impact of public funds.
- 2**  **CLIMATE/NATURE/DISASTER RISK**
finance initiatives can incorporate SLSD in their arrangements to strengthen the credibility of commitments and crowd-in private finance.
- 3**  **STANDARDISATION**
creates a common denominator for market participants to measure and evaluate performance, promote best practices and build trust between the contractual parties.
- 4**  **CAPACITY BUILDING**
covers the variety of efforts to make up for shortfall in technical and human capacity needed to structure and launch SLSDs on the issuer side, as well as campaigns to raise awareness and address misconceptions on the investor side.
- 5**  **ENABLING REGULATION AND MARKET DEVELOPMENT**
encompasses rules set by financial and monetary authorities that can hinder or support market uptake and liquidity, as well as direct policy interventions to stimulate demand for SLSD instruments.
- 6**  **FISCAL RULES AND FRAMEWORKS**
can encourage (or hinder) the adoption of SLSD instruments by sovereigns, and so impact the extent to which these instruments can be accommodated within longer-term budget plans and public financial management strategies.
- 7**  **NATURE MARKET LINKAGES**
both expand the range of KPIs and SPTs available for SLSDs, and connect nature-based revenues that can support performance in pursuit of nature-related goals.

The following sections unpack these pathways with examples and illustrations where available.



CREDIT ENHANCEMENT

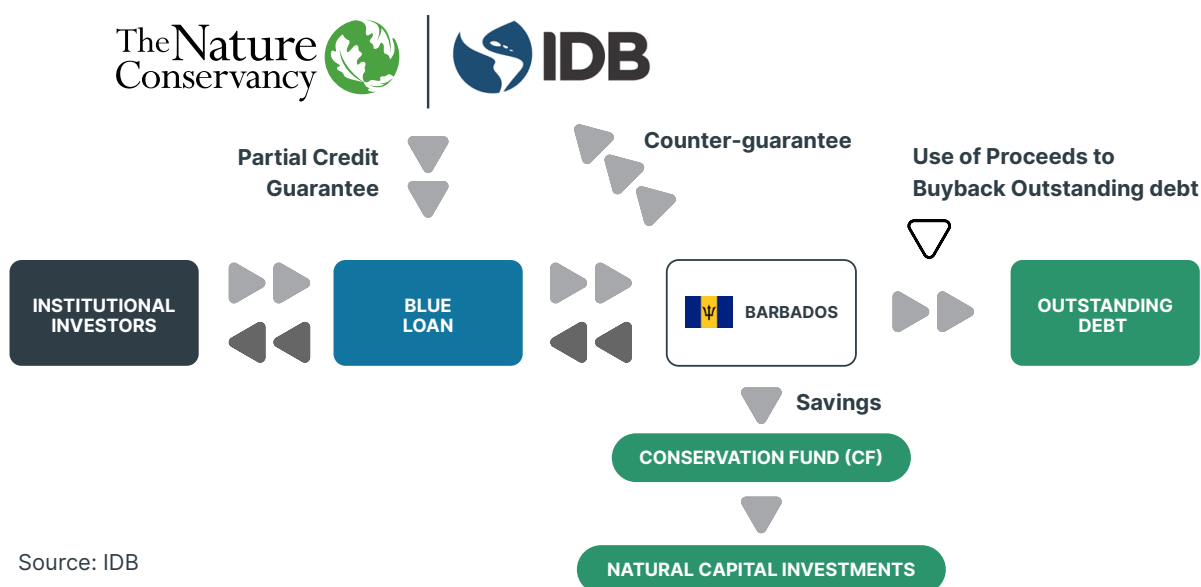
Credit enhancement products transfer a portion or all the sovereign credit risk to guarantors such as multilateral development banks (MDBs), bilateral development financial institutions, and private insurers.²⁰ In the context of SLSD, credit enhancement typically takes the form of Partial Credit Guarantees (PCG), Partial Risk (also known as Political Risk) Guarantees (PRGs), parametric disaster risk insurance, and sovereign indemnity insurance. The first two assume the obligation of the sovereign borrower in the event of non-performance or default on covered instruments; the latter two pay out on the insurance policy if certain parameters or insured losses exceed predefined thresholds.

Credit enhancement can catalyse SLSD growth by de-risking transactions and crowding in private investors to multiply the impact of public funds. Transferring all or part of the credit risk on enhanced sovereign debt has the benefit of lowering the risk premia demanded

by investors for covered instruments, and by extension, the borrowing costs of issuers. The former is especially salient for credit constrained and lower-rated sovereigns who wish to issue sustainability-labelled debt but fail to attract sufficient interest from impact-oriented but sovereign risk-averse investors. A credit guarantee, insurance policy, or other enhancement mechanism should result in a higher rating for an instrument over and above the sovereign ceiling, thereby unlocking demand from more conservative investors. The Barbados Blue Loan (see Box 3) and the blue bond issued in Belize as part of its debt for nature swap (see Box 4) both received significant rating uplift from credit enhancement. The latter obtained a Moody's credit rating of Aa2, a full 16 notches above its sovereign rating of Caa3. At the time, it attracted a large pool of global insurance companies, pension funds, high-net-worth individuals, and asset managers that would likely otherwise have eschewed Belize sovereign exposure.²¹

BOX 3. Credit enhancement in the Barbados refinancing operation²²

In September 2022, Barbados completed a US\$150 million Debt for Nature Conversion backed by a US\$150 million guarantee from the Inter-American Development Bank (IDB) and The Nature Conservancy (TNC), allowing the country to reduce borrowing costs and use savings to finance a long-term marine conservation programme. This structure included a US\$100 million guarantee from the IDB and another US\$50 million guarantee from TNC that enhanced a loan provided to Barbados (Blue Loan) to buyback existing debt. This is the first instrument to be guaranteed by both a multilateral institution and a non-governmental organization.



Source: IDB

Sovereign insurance against catastrophic risks is another form of credit enhancement that can stimulate demand for SLSD.

Sovereign insurance can mitigate fiscal risks stemming from natural hazards such as earthquakes or extreme weather events and can serve as adaptation policies for countries with exposure to climate risks.²³ They can take the form of indemnity or parametric policies wherein a payout is triggered, if, respectively, losses experienced by the insured exceed a predefined level or a parameter such as if wind speed breaches a given threshold. To date parametric insurance has been incorporated into at least one SLSD transaction (see Box 4). Other debt restructurings - specifically those of Barbados and Grenada - have featured climate resilience disaster clauses (CRDCs). These clauses are written into sovereign debt contracts and contain a KPI-linked trigger to defer a sovereign's repayments for a pre-agreed period in the event of a predefined, severe climate shock or natural disaster.

They aim to avoid a chaotic and lengthy debt restructuring process and/or payment default for a country already in crisis and preserve much needed FX liquidity to support disaster relief.²⁴

Performance funds are an innovative twist on credit enhancement. For example, a fund backed by DFIs and donors could invest in countries' conventional debt based on pre-agreed sustainability commitments, taking a "first loss" on a covered credit event and thereby mitigate the risk faced by private investors in mezzanine/senior tranches. Such funds and structures have already been successfully implemented, for instance, the US\$1.42 billion IFC-Amundi EGO fund set up in 2018.²⁵ The innovative twist could be that, as a further incentive, DFIs would funnel some of their returns earned from investing in the fund back to countries that meet their goals. This could improve both market access for governments and the use of below-market, concessional finance from DFIs to leverage private capital and avoid the fragmentation of sovereign debt markets.²⁶

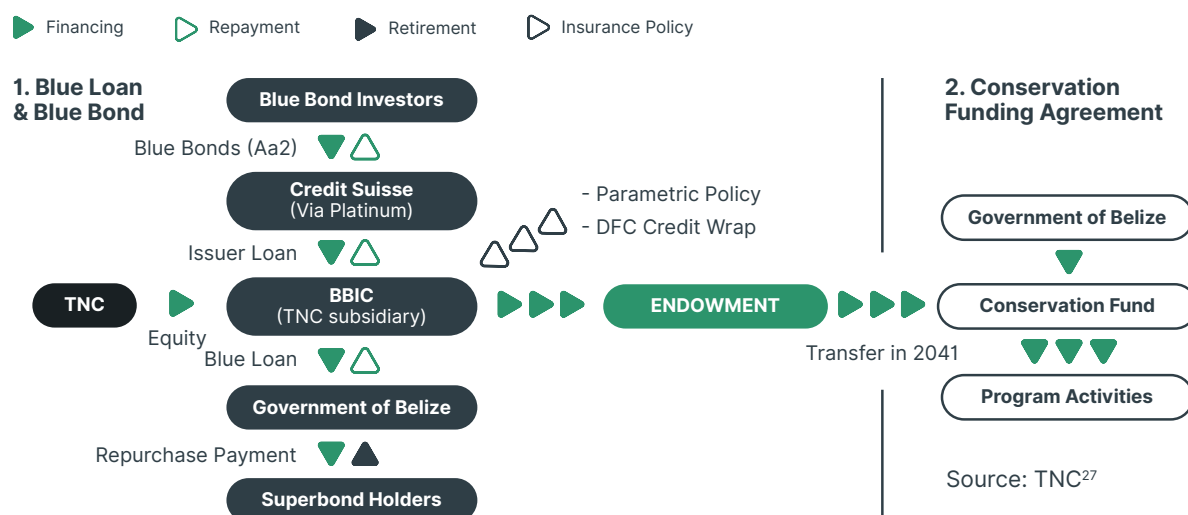
BOX 4. Insurance in the Belize debt-for-nature conversions²⁷

Belize Blue Bond

In November 2021, Belize executed a debt-for-nature conversion backed by The Nature Conservancy (TNC) via a US\$364 million "blue loan" to the Belize government, which allowed the country to repurchase its defaulted superbond. Because the transaction directly funded marine conservation, the TNC's subsidiary, Belize Blue Investment Company (BBIC), secured a credit enhancement for the blue loan from the United States International Development Finance Corporation (DFC), which in turn allowed BBIC to fully finance the loan through blue bonds issued by Credit Suisse.

Hurricanes and large storms are a risk to the Belize economy and to government revenues, so the blue loan structure also incorporated commercial sovereign debt catastrophe insurance cover. The parametric insurance policy, designed by Willis Towers & Watson and underwritten by a Munich Re subsidiary, provides coverage for blue loan coupon and principal payments following an eligible hurricane event in Belize.

Belize Blue Loan / Blue Bond & Conservation Funding Agreement Structure





CLIMATE, BIODIVERSITY AND DISASTER RISK FINANCE INITIATIVES

Sustainability-linked sovereign debt (SLSD) solutions can be embedded within the mosaic of financing initiatives that have been launched recently to address both climate/nature mitigation and adaptation, as well as residual loss and damage risks. Soaring sovereign debt levels and climate risks, aggravated by the COVID-19 pandemic and the war in Ukraine, have pushed market participants to consider new approaches to handling the obligations of sovereign debtors affected by climate-related shocks. These include a plethora of dedicated funds and financing initiatives launched in recent years that aim to accelerate funding for mitigation, adaptation, and loss and damage. SLSD instruments, especially SLBs, have a critical role to play in these initiatives, by crowding-in private funding – especially when paired with credit enhancement – and by providing an additional commitment device to complement policy-based conditionality.

Several initiatives seek to coalesce and coordinate creditor and debtor countries around energy transition and nature conservation goals while giving due consideration to debt sustainability challenges. These include country specific platforms, such as the Just Energy Transition Partnerships (JETPs), Forest and Land-use Investment Packages (FLIPs) and Positive Conservation Partnerships (PCPs), which facilitate and accelerate policy development and funding to achieve targeted sustainable, fiscal and economic objectives (see Box 5). Likewise, regional avenues such as the Sustainable Debt Coalition (SDC) Initiative, introduced by the Egyptian presidency of COP27 and the United Nations Economic Commission for Africa (UNECA), aim to encourage green growth and address environmental challenges through additional sustainable and green investments. They also provide diplomatic opportunities to align the use of KPIs for refinancing or new disbursements of debt.²⁸ SLSD solutions play an integral role in fulfilling these funding requirements and strengthening commitment mechanisms via built-in financial incentives.

Significant funding is being mobilised to address loss and damage exposures of vulnerable countries. ‘Loss and damage’ risks refer to the negative impacts of climate change that go beyond the levels to which countries can adapt.²⁹ It is a consequence of the failure to reduce GHG emissions sufficiently and the failure to adequately implement the necessary adaptation measures. The IPCC’s 6th Assessment Report differentiates between ‘soft’ adaptation limits – where adaptation options exist but countries lack the access to financial resources needed to execute them – and ‘hard’ adaptation limits – where “there are no reasonable prospects for avoiding intolerable risks.”³⁰ Developed countries agreed at COP27 in 2022 to set up a fund for addressing loss and damage in particularly vulnerable nations. This will complement the existing financing from the Green Climate Fund (GCF) and non-UNFCCC funds such as the the Global Facility for Disaster Reduction and Recovery (GFDRR), the Global Risk Financing Facility (GRiF), and the Global Shield against Climate Risk.³¹ In addition to existing vehicles, proposed reforms of the Bretton-Woods system would improve access to affordable funding for climate resilience in low-income climate vulnerable countries. For example, the Bridgetown Initiative calls for the re-channeling “of at least US\$100 billion of unused [IMF] Special Drawing Rights (SDRs) to those [countries which] need it.”³² Some of these uncommitted SDRs could be allocated to designated countries to address loss and damage exposures, for instance, via the Fund’s Resilience and Sustainability Trust (RST).³³

Loss and damage initiatives create additional opportunities for SLSD. Instruments such as SLBs can mobilize private capital to complement multi-lateral and bilateral commitments and to cover funding gaps for “soft” adaptation solutions. Credit enhancements and adaptation-related KPIs render such instruments more “investable” for the private sector by successfully lowering risk perceptions. This can also strengthen the credibility of a country’s adaptation commitments. Similarly, new SDR allocations could also embed adaptation-related performance-based KPIs to further incentivize action and investments to minimise loss and damage exposure.

BOX 5. SLSD in climate finance initiatives

Just Energy Transition Partnerships (JETPs)

JETPs are new innovative financing cooperation mechanisms to assist coal-dependent developing countries transition to cleaner sources of energy by working with climate finance donors and private investors. Simultaneously, they aim to create new jobs, economic growth and resilience. The first JETP was announced at COP26 in Glasgow by South Africa, which was promised US\$8.5 billion in financing by France, Germany, United Kingdom, United States, and the European Union.³⁴ The country's JETP Implementation Plan (IP) laid out an emissions KPI trajectory for the country and how to achieve it: peaking power sector emissions by 2030, not the previous 2037, and capping carbon dioxide emissions levels about a quarter lower than previously expected by the same time. The funding to meet the goals of South Africa's JETP IP is estimated to almost US\$99 billion, around a third of which is expected to be mobilized by the private sector.³⁵ Although the first tranche of financing announced at COP26 consisted of concessional loans and guarantees, the presence of KPI creates opportunities for adding SLBs and other SLSD instruments to the funding mix.

More countries have followed South Africa's example and announced their own JETP plans. India, Indonesia, Vietnam, and Senegal are exploring the mechanism. Indonesia has announced a deal of US\$20 billion over three to five years, from both the partner governments and from the private sector.³⁶ JETPs involve a small number of actors and have the potential to make fast progress on financing the energy transitions of target countries. Countries may consider issuance of sovereign SLBs as well as use-of-proceeds green bonds to attract additional financing to their Implementation Plans which, as the case of South Africa shows, can drastically exceed the initial funding provided by the supporting partners.

Forest and Land Use Investment Packages (FLIPs)

Representatives of governments, civil society, philanthropy, Indigenous Peoples' organisations and financial institutions have embarked on developing the concept of 'Forest and Land Use Investment Packages' (FLIPs). FLIPs may be considered as an expansion of JETPs into sustainable development areas beyond energy transitions, with similar scope for leveraging SLSD. They integrate technical, financial and diplomatic support, as well as investment, and business partnerships. They engage a wide range of stakeholders – public, private, multilat-

eral and philanthropic institutions – to support the implementation of a country's climate target, with a particular focus on forests and other land uses. For indigenous peoples, local communities and land-owners, FLIPs could provide support for conservation, restoration, and sustainable agriculture, and other economic activities consistent with forest and climate objectives. And for other participating partners, FLIPs could help reduce overlaps and gaps in programs and financing, generate opportunities for co-investment and blended finance, help unlock barriers to investment, and help better synchronise policy, finance, and investment around a mutually-recognised set of goals. The working group of over 70 interested stakeholders held its initial meeting in January 2023 and is planning to deploy the FLIP model in 2 - 4 Forests and Climate Leaders Partnership member countries, with the goal of announcing packages of coordinated policy and support by COP28.

Positive Conservation Partnerships (PCPs)

International leaders convened during COP27 to express their willingness to collaborate on protecting the vital stores of carbon and biodiversity, and to form Positive Conservation Partnerships (PCPs). These carbon and biodiversity reserves areas, such as peatlands, mangroves and old growth forests concentrate more than 75% of so called "irrecoverable carbon"³⁷ and over 90% of the vertebrate species habitats. If these landscapes were destroyed, large amounts of carbon would be released into the atmosphere and cause the disappearance of many species of flora and fauna. The objective of PCPs is to give these areas a special status at the international level and support the countries that host them with political as well as financial contracts to secure their conservation.³⁸

These partnerships could facilitate developing the right mix of financial resources, both public and private, in the form of debt, grants, equity, as well as carbon and biodiversity credits. In addition, they could deliver the required policy support to scale the positive impacts of regional nature-related markets. Again, the development, integration and monitoring of appropriate, policy aligned KPI frameworks will be critical to ensuring the desired impacts. The PCPs should look to create solutions that not only secure a nominal increase of protected areas but also provide climate and nature-loss risk adaptation as well as new revenue streams which can economically and socially empower local communities and contribute further to building the countries' resilience.

¹ "Irrecoverable carbon" refers to the vast stores of carbon in nature that are vulnerable to release from human activity and, if lost, could not be restored by 2050. (Source: Conservation International)



STANDARDISATION

A prerequisite for the orderly scaling of any market is the existence of widely accepted standards that provide a common denominator for all market participants.

They are necessary to establish a common language to measure and evaluate performance, promote best practices and facilitate building the trust between the contractual parties. For standards to play their catalysing role in scaling sustainability-linked sovereign debt instruments, they need to provide guidance on structuring features, disclosures and reporting. This must be supplemented by examples of good practices to illustrate the practical applicability of the guidance for transactions and market developments.

There is a growing body of work dedicated to the development of principles and guidelines for selecting SPTs and corresponding KPIs, as well as best practices for reporting and verification of performance. Work published by the World Bank in November 2021 provided initial blueprint of what a framework for assessing the suitability of KPIs might look like. It builds on existing standards from the ICMA Sustainability-Linked Bond Principles (SLBP), with a focus on emergent demand from issuers and investors in the sovereign space (see Box 6). The report³⁹ proposes criteria to screen the robustness of KPIs based on their underlying data and how performance targets can be set.

BOX 6. ICMA Sustainability-Linked Bond Principles

The International Capital Markets Association (ICMA) has published and is curating the Sustainability-linked Bond Principles (SLBP). A special sub-working group within ICMA was set up in 2022 to review the guidance and accompanying materials, including additional KPIs designed for sovereigns, to accommodate for the specifics of the sovereign issuers of SLBs.

The SLBP recommend a clear process and transparent commitments for issuers, which investors, banks, underwriters, placement agents and others may use to understand the financial and/or structural characteristics of any given SLB. The SLBP emphasise the recommended and necessary transparency, accuracy and integrity of information that will be disclosed and reported by issuers to stakeholders.

The SLBP have five core components:

1. Selection of Key Performance Indicators (KPIs)
2. Calibration of Sustainability Performance Targets (SPTs)
3. Bond characteristics
4. Reporting
5. Verification

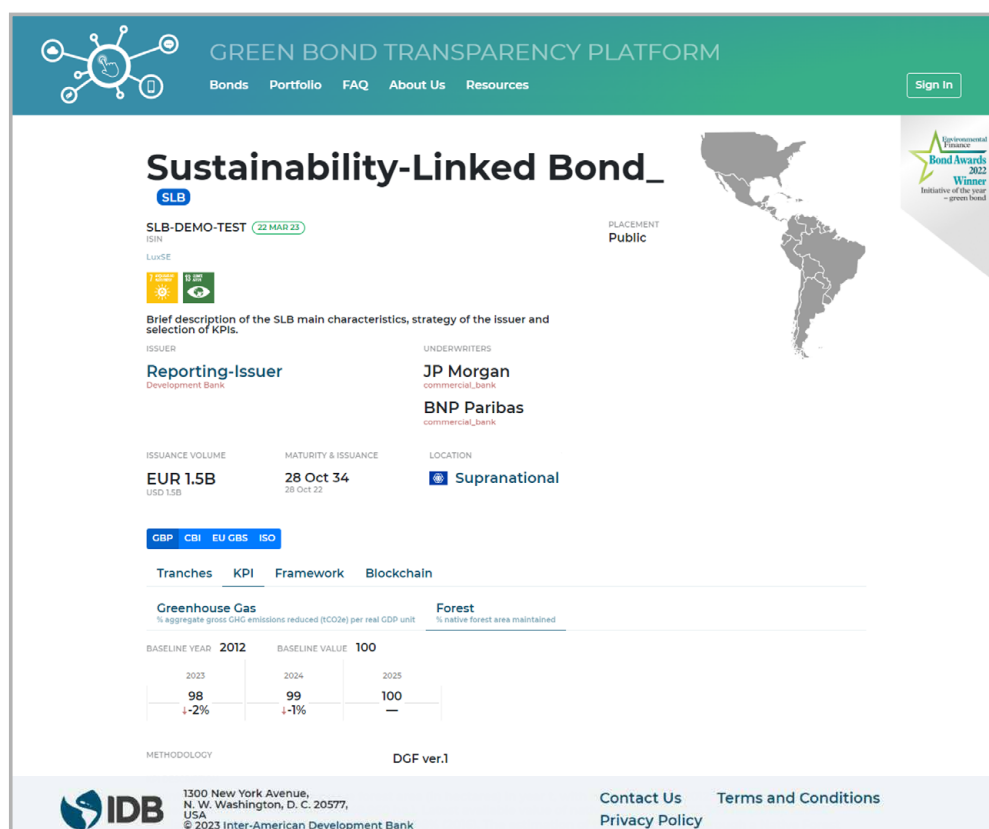
The SLBP recommend that issuers publicly communicate their rationale for the selection of their KPIs (i.e. relevance, materiality), the motivation for the SPTs (i.e. ambition level, consistency with overall strategic planning and benchmarking approach), the potential change of bond financial and/or structural characteristics and the trigger events leading to such a change, intended post issuance reporting and independent verification, as well as an overall representation of the issuer's alignment with the SLBP.⁴⁰

The aforementioned World Bank report sets out a long list of potential sovereign KPIs that are available based on existing data as well as credible third-party providers. These include KPIs linked to energy (e.g., the percentage share of renewable energy, PM2.5 air pollution), climate (e.g., the total greenhouse gas emissions), and biodiversity and natural capital (e.g., the proportion of fish stocks within biologically sustainable levels). Similar efforts to build out a set of harmonised KPIs are being undertaken by industry bodies such as the Assessing Sovereign Climate-Related Opportunities and Risks (ASCOR) Project. This framework helps asset owners and managers incorporate material climate change information into the assessment of sovereign bond investments.⁴¹

Once KPIs are selected, with harmonised data requirements and other technical specifications, they can be disseminated to prospective SLSD adopters via KPI registries and other data platforms. The ICMA is currently advancing its work on sovereign voluntary KPI registry within its working group on SLBPs. To this end, they can build on the successful example of enhanced transparency and harmonisation in the Green Bond space, such as the Inter-American Development Bank's (IDB) Green Bond Transparency Platform (GBTP, see Figure 4).

The scope of standardisation in the broader SLSD context also encompasses disaster clauses. On this front, the climate resilience debt clauses (CRDCs) initiative developed and presented by the Private Sector Working Group (PSWG) is a leading example.⁴² It seeks to extend CRDCs beyond the pioneering first uses by Barbados⁴³ and Grenada further afield to the Pacific, Africa, Central and Southeast Asia. It also agreed that, while technically no country is excluded from scope, CRDCs were likely to be most suitable for low-income countries, Small Island Developing States, or other developing countries particularly vulnerable to the impacts of climate change.⁴⁴

Figure 4 A mock-up of a sovereign sustainability-linked bond in IDB's GBTP





CAPACITY BUILDING

The complexity of SLSD transactions requires a wide network of stakeholders to support knowledge sharing and capability building for both issuers and investors. Sovereigns need to not only gain an understanding of the benefits that SLSD can provide, but also to develop the sufficient technical capacity. Most importantly, they need a system of coordination across the many ministries and public agencies involved in the structuring and subsequent monitoring and reporting processes. The experience of successful sovereign SLB issuers such as Chile and Uruguay, as well as other SLSD transactions, provide valuable lessons. Non-profit platforms such as the Sustainability-linked Sovereign Debt Hub have an important role to play in facilitating and encouraging the necessary knowledge transfers across the sovereign debt ecosystem. In addition, access to technical assistance and funding must become as streamlined and accessible as possible. Philanthropies, especially if well-coordinated, can provide the required funding and substantially improve the availability of technical assistance to the issuers.

The investment community needs common frameworks and clear guidelines, both statutory and voluntary, to integrate nature into sovereign debt transactions and management. For instance, the Taskforce on Nature-related Financial Disclosures (TNFD) is - in consultation with a wide range of financial institutions - incorporating sovereign debt into its draft framework. This will enable companies and financial institutions to integrate nature into sovereign debt-related decision making and reporting. Financial industry associations such as the Institute of International Finance (IIF) and ICMA can contribute to the dissemination of know-how on sustainability-linked sovereign debt and help overcome the obstacles that might appear in the investment decision processes, such as the specifics in the valuation of KPI-linked bonds.

To level the asymmetry of information and capabilities, issuers and investors need to be brought together and conversations facilitated well ahead of planned issuance. The sell- and buy- side should have permanent venues that enable them to address frictions in the pipeline of sovereign SLB issuance well ahead of a specific subscription. Platforms such as the SSDH can provide the required channels for these engagements to advance and become regular. In addition, bilateral DFIs could coordinate with the MDBs to pool their credit enhancement and technical assistance capacities, enabling sustainability-linked debt transactions in debtor countries that lack access to the markets.

Educating stakeholders is the first step in socialising SLSD instruments amongst sovereigns and the market. Aside from disseminating learnings from successful SLSD transactions and providing guidance on practical matters like how to solicit technical assistance, education also involves dispelling possible misconceptions about perverse incentives embedded in the step-up/step-down feature. A common criticism of SLBs is that they encourage investors to “root for failure”, since under-performance on KPIs result in higher interest income. As a counter point, a step-up may also imply weaker credit fundamentals and therefore lower valuations, offsetting any gain from higher coupon rates.



ENABLING REGULATION AND MARKET DEVELOPMENT

Financial and monetary authorities are instrumental in creating an enabling regulatory environment for SLSD instruments to thrive in local and international markets. This is especially important for increasing liquidity in the emerging SLB asset class – a key concern of investors. Central banks can help to stimulate demand for SLSB instruments by, *inter alia*, granting them greater weight or more favourable treatment in their bond purchase programs and/or collateral frameworks. This is the approach that was taken by the European Central Bank (ECB) in July 2022, albeit for the time being limited to corporate bonds.⁴⁵ Similar treatment for SLSD could provide a significant boost to liquidity. Financial authorities can also influence the demand and design of SLSD instruments via their regulatory powers of the asset management industry. For example, stricter enforcement of asset managers' adherence to their stated ESG goals and standards, as contemplated by the European Union's Sustainable Finance Disclosure Regulation (SFDR), may render them more discerning with regards to the SLSDs that they purchase, thereby increasing pressure on issuers to furnish sounder sustainability frameworks and more credible commitments.⁴⁶

The development of green bond markets in the last decade could give some valuable lessons for countries supporting the emergence of SLBs. For example, the rapid development and scale-up of China's green bond market was driven to a significant extent by government policies and regulation aimed at creating a conducive regulatory environment and financial infrastructure for investors and green bond issuers.⁴⁷

Although the major share of the Chinese green bond issuance growth has come from financial and non-financial corporates,⁴⁸ it is conceivable that the growth and acceptance of corporate labelled bonds could spill over to the sovereign bond market as the familiarity of investors with these specific bond class increases. Building on its success in scaling up the green bond market, Chinese policymakers and regulators have adopted a similar market development blueprint for other thematic bond markets, including SLBs. Thus, in April 2021, the Chinese National Association of Financial Market Institutional Investors (NAFMII) – a self-regulatory body of China's interbank bond market under the central bank – launched SLB regulation⁴⁹ based on ICMA principles, followed in November of that year by a pilot scheme that permits foreign issuers to place social and sustainability bonds in China.⁵⁰ The latter has the potential to make a China international centre for the issuance and secondary market trading in the sustainability labelled bonds.

Creditor countries can also play a decisive role in shaping SLB markets. Aside from providing credit enhancements for climate and nature-linked debt instruments as a means to address the climate and nature related resilience in debtor countries, they can also set an example by issuing SLBs themselves to meet their own biodiversity and climate commitments. This would not only provide a powerful demonstration effect, but also help to further socialize the instruments among global investors and enhance liquidity via greater secondary market trading.



FISCAL RULES AND FISCAL FRAMEWORKS

Performance on fiscal rules and SLSD arrangement is mutually reinforcing. Fiscal rules are statutory constraints on fiscal policy based on quantitative limits on budgetary aggregates – either fiscal revenue, public expenditures, budget balances, public debt, or some combination of the four – aimed at ensuring fiscal responsibility and debt sustainability. As of end-2021, around 105 economies have at least one fiscal rule, with the majority comprising debt ceilings and/or expenditure caps (see Figure 5).⁵¹ Beyond the fact that both rules and SLSD serve as commitment mechanisms that reward or penalize performance on some underlying target or indicator, there are several overlaps between the two.

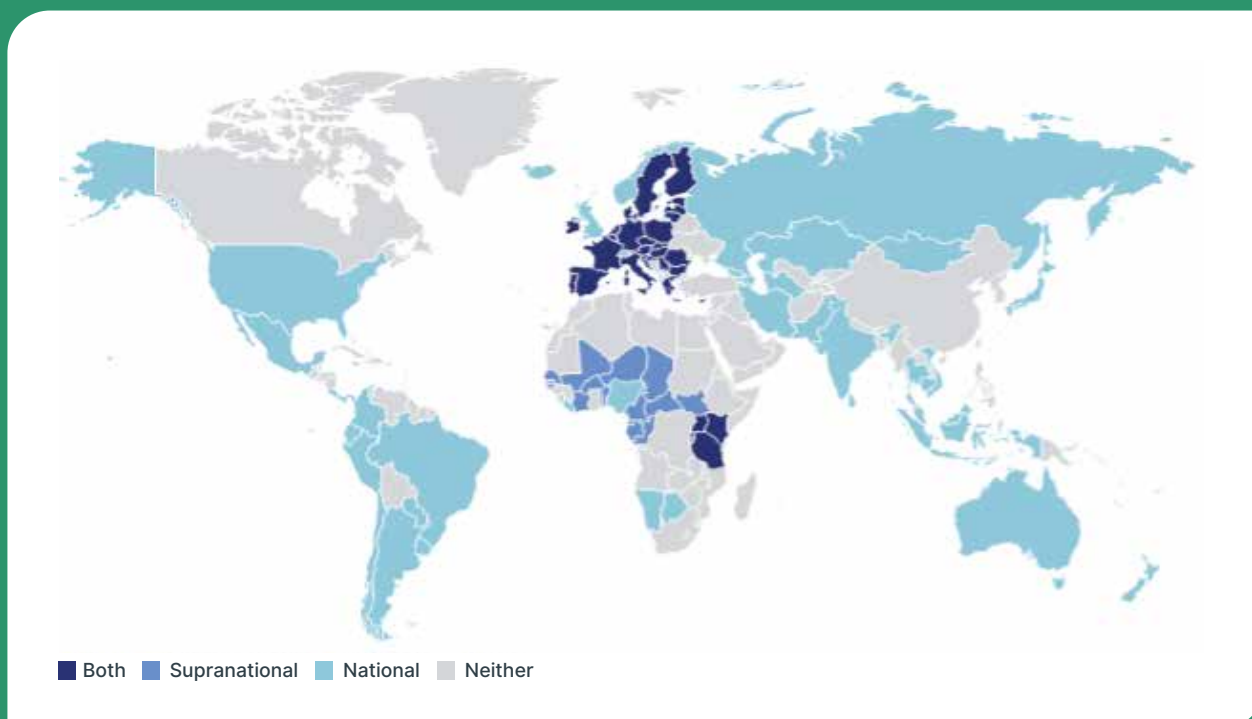
First, the performance on KPI-linked instruments has a direct bearing on the performance of the fiscal rule since any net debt-service savings/penalties feed through to the fiscal aggregates. To the extent that over/underperformance on KPIs impacts macroeconomic fundamentals, this will also have an indirect impact on fiscal outcomes and hence compliance with the rules.

Second and relatedly, to the extent that SLSD instruments such as SLBs can offer a lower cost of capital – e.g., when they are credit enhanced – increasing their share in the funding mix can help governments comply with rules, especially for sovereigns with limited headroom under their caps.

And third, to the extent that SLSD improve fiscal resilience to exogenous shocks that are not covered by escape clauses – as is the case with most nature loss scenarios – they further support compliance with rules.

Conceivably, linking SLSD solutions to fiscal rules can create a powerful, additional incentive mechanism to reinforce both SPT achievement and debt sustainability.

There are several ways of linking SLSD provisions and fiscal rules more directly. For instance, some economists argue that fiscal rules should be indexed to underlying drivers of fiscal resilience, for example, via an automatic stabilizer that allows for more climate-friendly infrastructure spending during recessions.⁵² SLSD instruments could provide cost-effecting funding to that end – alongside use-of-proceeds instruments – while also unlocking fiscal savings via coupon step-downs if the investments feed through to KPI overachievement. Furthermore, it is conceivable that future fiscal rules might share common performance indicators, such that overperformance on KPIs also triggers some relaxation of limits. The additional fiscal space that this opens up would serve as an additional incentive to achieve SPTs.

Figure 5 Fiscal Rules across the globe (as of end-2021)

Source: IMF⁵³

Sovereigns will generally draft medium-term fiscal frameworks (MTFFs) as part of their fiscal responsibility commitments, where SLSD can also play an integral role. MTFFs translate macro-fiscal objectives into budget aggregates and spending plans, typically with a view to achieving fiscal targets and complying with fiscal rules. The drafting of such frameworks relies heavily on macroeconomic forecasting and debt sustainability analysis (DSA), typically covering a 3- to 5-year time horizon. Although these exercises are highly sensitive to the many underlying assumptions, MTFFs are effective in providing an indication of the financing requirements under a range of scenarios. Here there is an opportunity to elucidate the potential gains of SLSD in terms of savings on debt service as well as the broader fiscal implications of over-/under- delivering on SPTs. The latter would, in turn, entail modelling the impact of nature losses, which should be done in any case given the growing risk of nature collapse on public finances. A recent NatureFinance report considered nature collapse scenarios in debt sustainability analysis. The report showed how the collapse of ecosystem services such as forestry, fisheries and pollination services could have more adverse economic effects on debt metrics than the Covid-19 pandemic for many countries.⁵⁴ Omitting nature risks could therefore lead to poor calibration of fiscal plans under the MTFF. Conversely, factoring in such risks during MTFF formulation can help to identify the relevant and material SPTs to include in SLSD structures.

NATURE MARKET LINKAGES

Nature credit markets have emerged as a promising source of nature-based revenue that can be linked to SLSD structures in a variety of ways. Nature credit markets, which comprise both carbon offset markets and biodiversity credit markets⁵⁵ more broadly, offer a way to accelerate the internalisation of climate and nature-related externalities. There are several avenues for linking these markets with SLSD. First, the revenue stream from the issuance and sale of nature credits can be integrated into SLSD as a form of collateralisation, for example, via a sinking fund. Gabon, for example, is planning to earmark one quarter of the proceeds of its REDD+ sovereign carbon credits for servicing its existing debt.⁵⁶ As several other countries (e.g. Honduras, Belize and Papua New Guinea) are exploring the possibilities of selling sovereign carbon credits,⁵⁷ there arises an opportunity to standardise the integration of REDD+ credits into the issuance of new SLSD or refinancing/restructuring of existing debt. Second, to the extent that the revenue mobilisation enhances the sovereign risk profile, it can improve the uptake of SLSD instruments among a wider pool of investors. Third, the issuance of carbon credits can itself be a KPI. For instance, in February 2023, the World Bank issued an Emission

Reduction-linked Bond whose coupon payments are linked to the issuance of Verified Carbon Units (VCUs) for a water purification project in Vietnam.⁵⁸

A structure like the World Bank's Emission Reduction-Linked Bond could be used for scaling sovereign debt instruments as well. For instance, a country could structure a step-down SLB with KPIs and SPTs tied to the acreage of mangrove covered areas. If it meets the targets, the coupon interest payments would decrease by the predetermined amount. To meet the target, the country would support projects to plant mangroves in areas exposed to risk of flooding. These projects would reduce the potential loss and damage from floods, as well as create carbon and biodiversity credits from sequestration and biodiversity. The credits could be integrated in full or partially in the bond structure to collateralise the coupon interest payments.

Beyond carbon and the emerging biodiversity credits, a variety of linkages to other nature markets should be explored. In a recent study, the Taskforce on Nature Markets identified additional types of nature-specific trade (see Figure 6).

Figure 6 The nature markets taxonomy includes four types of nature-specific trade

Type	Description	Category	Traded element	Segments
Asset Markets	Markets in which the right to use ecosystem assets with long-lived value are traded	Real assets	Rights to use an entire ecosystem asset and resulting services	<i>Agricultural land, timberland, water rights, biodiversity IP, additional ecosystems assets</i>
Intrinsic Markets	Markets in which provisioning, regulating, or cultural ecosystem services are traded	Products	Use of provisioning services	Hard and soft commodities, legal and illegal wildlife, genetic materials, water rights leases
		Conservation	Conservation of nature for direct economic benefit or altruistic value	Payments for ecosystem services, overseas development aid, philanthropic grants, sustainability-linked debt
		Access	Access to/use of cultural services	Wildlife tourism
Credit Markets	Markets in which credits that reflect efforts to enhance or conserve ecosystem assets or services are traded	Nature-specific credits	Credits that reflect the value of ecosystem services	Mitigation banks, water quality credits, <i>voluntary biodiversity credits</i>
		Nature-related carbon credits	Credits that reflect the value or carbon sequestration or storage	Nature-related voluntary carbon credits, AFOLU sector compliance carbon allowances
Derivative Markets	Markets for financial products which directly reflect ecosystem values or ecosystem risks	Financial products	Financial products directly tied to ecosystem assets or services	Commodity derivatives, nature-related insurance, wildlife NFTs, <i>biodiversity loss insurance, securitisation of ecosystem assets, water futures</i>

Source: Taskforce on Nature Markets

Note: Segments in italics are not included in the current market sizing analysis but are further discussed in the nascent market segments section of the report.

Payments for ecosystem services could become a supplementary revenue source, and as such, be integrated into the KPI-linked debt instruments' structures. For example, more than half of the 979 hydropower dams operating in tropical developing countries, and additional 686 planned, depend on water from cloud forests. This water is a critical service to downstream economic activity, including cities, hydroelectric dams, and agricultural and industrial water users, creating a buffer for dry seasons and periods of drought.⁵⁹ Building on their research in this space, Earth Security is proposing the introduction of Cloud Forest Bonds that could create new revenue streams for 25 governments where 90% of these forests stand. In addition to REDD+ carbon credits originating from newly protected cloud forests, governments could monetise the extra water supply and the sediment reduction the hydroelectric plants are benefiting from. This would create additional revenue streams while simultaneously unlocking access to cheaper financing through the issuance of a step-down SLB or a debt-for-nature swap mechanism which incorporate the protection of these forests into their structures.

Eco-tourism in newly protected natural areas is often proposed as the most widely applicable economic activity to generate additional revenues from nature-based solutions. It has the potential to generate extra tax revenues for the issuing sovereign. Inclusive of local populations, eco-tourism can play a decisive, catalytic role in socio-economic development by creating multiplicative economic effects across local supply chains and supporting systems in the rural communities.

Sizing the Prize



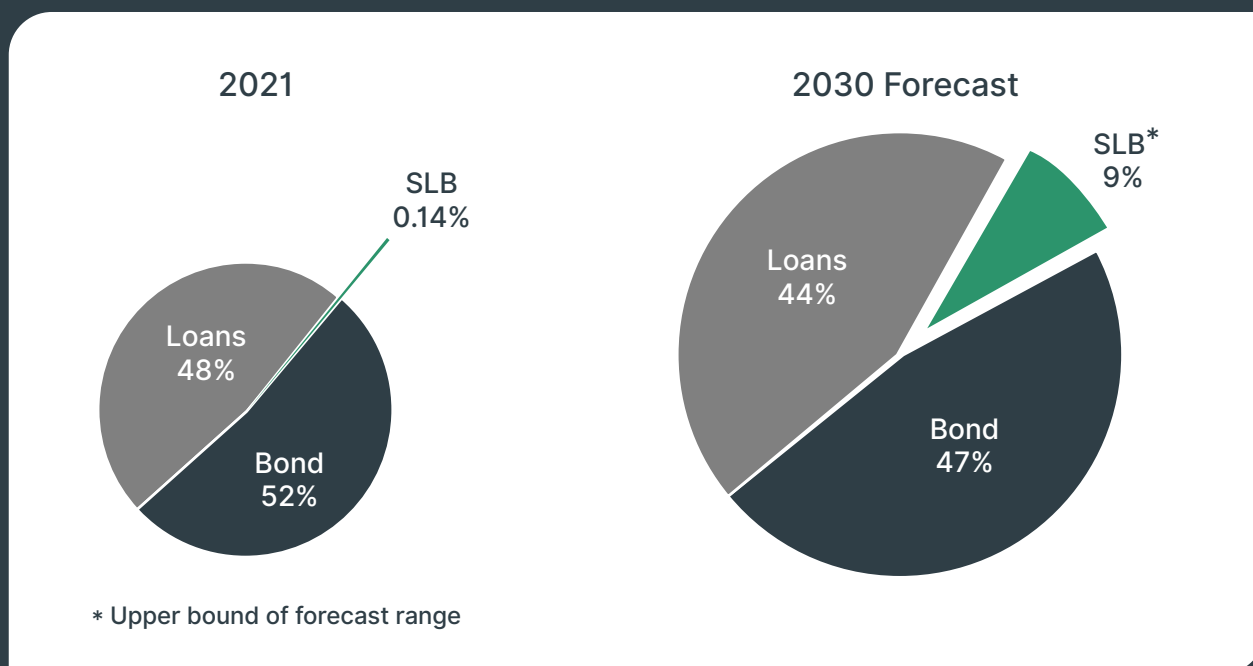
Sizing the Prize

From the starting point of a mere US\$3.5 billion at the end of 2022, the issuance of sustainability-linked bonds from emerging market and developing economy sovereigns has the potential to reach between US\$250 billion and US\$400 billion by 2030, according to NatureFinance estimates (see Annex 1 for the assumptions and methodology underpinning these forecasts). Coming off a low base, the volume of issuance has the potential to grow approximately 100-fold over this period, driven by an anticipated easing of the demand and supply constraints identified above. Under a baseline scenario, every sovereign with market access presently can be expected to issue at least two bonds during the seven-year forecast horizon. This performance would mirror the trajectory of the sovereign ESG debt issuance more broadly, which grew from under US\$1 billion in 2016 to over US\$120 billion of green, social, sustainable, and sustainability-linked (GSSS) bonds five years later.⁶⁰

Under these projections, SLBs could make up between 6-9 percent of the stock of EMDE external public debt estimated for 2030, or 11-18 percent of bond debt. That compares to current levels for GSSS of 3 percent and 5.7 percent, respectively (see Figure 7). The estimates are conservative given that they do not include the potential growth of local market or local currency SLBs, which remains in its infancy even for labelled bonds but shows significant promise. For example, Colombia, Fiji, and Nigeria have each issued domestic green bonds in the past five years.⁶¹

The potential for performance-based refinancing of external debt by sovereigns with limited or no market access is estimated at US\$40-80 billion. This covers 58 sovereigns currently rated at or below B+ and includes at least five in default at the time of writing – with total outstanding external debt totalling around US\$1 trillion. Of this, roughly two-thirds are held by private and bilateral creditors, and hence amenable to refinancing using SLBs. A crucial assumption here concerns the share of debt that is refinanced, which is assumed to be around 75 percent for sovereigns with less than US\$1 billion of external debt outstanding (e.g., Fiji, Grenada, Lesotho), but only 15% for those with a higher stock of debt.

Figure 7 Potential size of pie



Source: World Bank, IMF, SSDH

Barriers to Scale



Barriers to Scale

The scaling pathways laid out above are themselves subject to barriers.

These create bottlenecks and pitfalls along the SLSD value chain, and can be categorised into five groups:

1. Restrictive accounting rules
2. Outdated rating agency methodologies
3. Data and technology constraints
4. Coordination failures
5. Market fragmentation

Restrictive accounting rules: MDBs apply the same accounting treatment and similar pricing policies to guarantees as to loans in order to conservatively reflect the risk exposure on their balance sheets and preserve their credit ratings. From the MDBs' perspective, this can incentivise the use of loans over guarantees, since they are easier to structure, book, and socialise internally.⁶² The resulting higher transaction costs may also dissuade borrowers from choosing guarantees over loans.⁶³ Furthermore, the widely accepted OECD methodology for measuring Official Development Assistance (ODA) does not include guarantees in its definition. This arguably discourages bilateral creditors from issuing guarantees over loans. Amending these accounting rules to realign incentives is a fraught undertaking since it requires extensive internal reform as well as coordination with third parties such as credit rating agencies who reflect these accounting rules in their scorecards.

Rating agency methodologies: sovereign credit rating agencies constrain SLSD market potential through multiple channels.

First, as noted above, their rating criteria for MDBs apply the same risk weightings for guarantees as for loans, limiting any potential uplift in terms of capital adequacy.⁶⁴ Second, their treatment of guarantees on the sovereign rating is similarly conservative. Guarantees only provide uplift on the instrument rating (not the issuer rating), and even then, they only recognise credit enhancement interest payments, not principal.⁶⁵ Third, they generally do not account for nature-related risks in their methodologies, and even when they do reflect them in ESG scores, these do not currently affect the sovereign credit rating. This is notwithstanding estimates by the World Bank that projects the potential hit to global GDP from a collapse in services such as wild pollination, provision of food and timber in the order of 2.3 percent of global GDP (US\$ 2.7 trillion) annually by 2030.⁶⁶ As these risks crystallize and create significant contingent liabilities for sovereigns, they will become harder to ignore. Elucidating the interlinkages and impacts can persuade CRAs to amend their methodologies, especially if they are raised by issuers themselves.

Data and technology constraints: poor data quality or gaps in coverage alongside inadequate data infrastructure and management, exacerbate information asymmetries and transaction costs. As the IMF noted recently: “Data provision processes remain manual, cumbersome, and costly.”⁶⁷ These can limit the range of KPIs that can be reliably tracked, and by extension, curtail the ambitions of SPTs or render SLBs outright unfeasible. Data gaps and quality issues need to be addressed in order to improve transparency, verification, and reporting processes.⁶⁸ This can be accomplished to a certain extent by new enabling technologies such as application programming interfaces (APIs) to streamline data capture and processing; internet-of-things (IoT) and geographic information systems (GIS) to capture data at source and in real time. Blockchain platforms can also be used to strengthen KPI database management and transparency. However, deploying these technologies presents its own challenges, especially in jurisdictions lacking proper governance structures and data infrastructure.

Intra-governmental coordination failures: The task of marshalling the resources needed to successfully launch and maintain a SLSD instrument throughout its life cycle is exceedingly difficult without a political champion and a high degree of cooperation between different government agencies and line ministries. At a minimum, this requires strong DMO leadership, or an interagency coordination body that can orchestrate and oversee operations related to the SLSD.⁶⁹ However, such efforts are often stymied by bureaucratic politics, ill-defined governance procedures for projects cutting across various line ministries, and information silos that hamper data sharing. Such fragmentation can undermine communication with the market, which in turn can erode the credibility of commitments. To overcome these failures, strong political leadership is indispensable to break down bureaucratic barriers and facilitate cooperation across ministries, agencies, and government departments.⁷⁰ Although the cost of administrative changes to accommodate the operation of SLSD is not trivial, it is generally a one-time outlay that can be amortised over subsequent issuances. Furthermore, technical assistance can help to accelerate these changes, including technology sprints to upgrade the data infrastructure.

Market fragmentation: For example, the market for credit enhancement, including guarantees and grants as well as ancillary advisory and technical services, is highly fragmented. Many parties may be willing to support SLBs but are unsure how to take the first step. Overcoming these coordination failures requires increased standardisation (especially on impact metrics and management) and a streamlined process for collaboration (typically led by a project anchor). In the case of sub-investment grade countries, pooled credit enhancement capacity is required from DFIs and private (re)insurers to catalyse the transaction. Discussions with the providers of guarantees and private insurers have illustrated that there is a case for an inclusive common platform for DFIs, international insurance brokers, insurers and investors that could assist with pooling capacity and facilitating transactions.⁷¹

The path forward

Sustainability-linked sovereign debt offers a scalable solution to meaningfully tackle the current triple crisis of escalating public debt distress, climate shocks, and nature degradation. By establishing contractual obligations to pursue predetermined climate/-nature targets and establishing clear financial incentives for action to those ends, SLSD can enhance the credibility of commitments to investors and society at large. Enhanced with credit guarantees and disaster risk insurance, SLSD can insulate the sovereign, to an extent, from financial and physical shocks such as climate catastrophes, while lowering the cost of capital and tapping into deeper pools of capital. As a feature set, KPI-linking can be plugged into a wide array of sovereign financing solutions, including major climate/nature financing initiatives such as JETPs and FLIPs, and collective debt management proposals such as the Common Framework. Arguably less contentious than policy-based conditionality, performance-based financing solutions are a possible pathway towards progressing current global sovereign debt negotiations.

SLSD is unlikely to scale to its potential without coordinated, ambitious interventions by key stakeholders in this space. This report has charted out possible pathways to reaching a market size in the order of US\$250-400 billion in EMDEs alone. Credit enhancement, catalytic financing, standardisation, capacity building, regulation, fiscal frameworks, and nature market linkages all have important roles to play in developing the SLSD market. But the journey along each of these is also beset by barriers and pitfalls, from data and technology shortfalls to restrictive accounting practices and coordination failures among key stakeholders. Challenges surrounding the design and implementation of effective performance incentives cannot be discounted either.

Fortunately, surmounting these barriers does not require far-reaching political consensus among major creditor and debtor groups.

Rather, they are amenable to several technical fixes and collective efforts on certain key fronts. Thus:

Credit enhancements can be mobilized by facilitating cooperation among major issuers and by pooling capacity around a shared goal of climate action and nature preservation.

Consultations with standard setters and credit ratings agencies can advance the case for granting credit enhancements more favourable treatment and for giving due consideration to nature risks.

A growing suite of enabling technologies can help to plug data gaps and improve data quality, thereby create a richer set of KPIs and SPTs for issuers to choose from.

Technical assistance can accelerate upgrades to data infrastructure and coordinate efforts by government agencies and line ministries involved in structuring and maintaining SLSDs.

Market fragmentation can be addressed through standardisation, collaborative data- and risk-sharing platforms, as well as harmonised KPI registries.

Finally, advanced economies issuers need to be prodded into more actively building the market, not least by issuing SLSDs themselves, both in pursuit of their own sustainability targets as well as to support liquidity and standardisation.

All of these are areas where the Sustainability-linked Sovereign Debt Hub is innovating and driving forward progress with the aim of creating a viable, self-sustaining market for sustainability-linked debt.

ANNEX 1

NatureFinance's methodology for sizing the SLB market by 2030

Estimating the growth of specific asset classes is a hazardous undertaking given the multiplicity of assumptions that go into forecasting financing requirements and funding decisions. The volume of bonds issuance depends, inter alia, on the sovereigns' amortization schedules and assumptions about the funding mix (domestic vs external issuance, local vs foreign currency, etc.) and rollover/refinancing rates. The volume also depends on stock-flow adjustments due to asset drawdowns, currency fluctuations, and debt restructurings. These assumptions, in turn, are shaped by prevailing market conditions and political considerations at the time of issuance, which are impossible to predict beyond a few months at best. Hence, this exercise makes no attempt of estimating overall bond issuance.

Given these complexities, we rely on third-party sources for forecasts where possible and assume stability in the overall composition of sovereign debt in terms of the share of external versus domestic debt, and bonds versus other obligations. Beyond that, we consider the green bond market as a proxy for a possible growth pattern, coupled with a basic, bottom-up approach that assumes sovereigns with international bonds in the market at present will issue two SLBs of average ticket size as in the recent past.

To summarise:

The baseline stock of public debt is derived from projections in the IMF's latest (October 2022) World Economic Outlook⁷² to 2027, extended to 2030 using a linear extrapolation based on the end-of-period trend in debt and nominal GDP.

The share of overall external and bonded public debt is obtained from the latest World Bank International Debt Statistics (IDS)⁷³, with the average composition of the past five years (2016-2021) applied to the 2030 headline projection on a country- by-country basis.

The lower bound of the sovereign SLB market size is calculated by simply scaling up the current market value (i.e., the Chile and Uruguay SLBs) by the growth factor of sovereign green bonds between 2016 and 2021 – a compound annual growth rate of around 150%.

The upper bound is set by assuming that every sovereign that has issued conventional international bonds during the past five years will issue at least two SLBs of similar average ticket size.

Besides the limitations stated above, there are some additional caveats to these assumptions. First, they are based on the IMF classification of EMDE, rather than the universe of rated sovereigns (i.e., it does not break out sovereigns such as Abu Dhabi and Sharjah which place international bonds under their own names rather than the United Arab Emirates). Second, no assumption is made that countries without international bonds outstanding at present (e.g., Malawi or Nepal) will enter the market during the forecast period, or likewise, that current issuers will drop out. Third, no assumptions are made with regards to the eventual outcomes of the debt restructurings currently underway or likely to occur over the coming years, let alone any comprehensive debt relief under the Common Framework or other initiatives.

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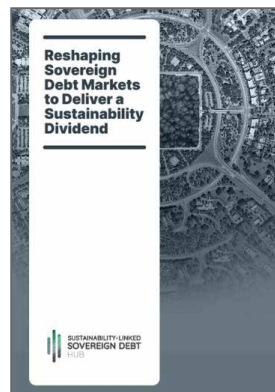
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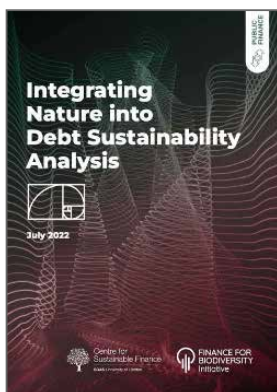
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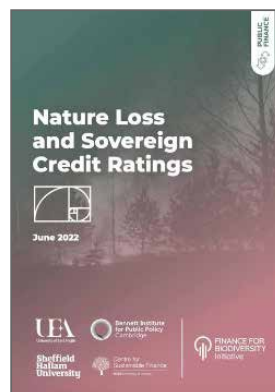
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Our use of Fibonacci sequence imagery is inspired by the association of this unique ratio with the maintenance of balance, and its appearance everywhere in nature- from the arrangement of leaves on a stem to atoms, uncurling ferns, hurricanes and celestial bodies.

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