

Introducing Sustainability-Linked World Bank Products: Overcoming Operational Constraints

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Executive Summary

The World Bank has piloted sustainability-linked lending (SLL) structures—most notably the 'Uruguay model'—that tie financial terms to the achievement of climate or development KPIs. Despite a mandate from the Financial Risk Committee, a standardized WB sustainability-linked loan product has not yet been created and rolled out. This paper draws on internal operational experience across Angola, Côte d'Ivoire, Ecuador, Eswatini, Kenya, Rwanda, Uruguay, and Uzbekistan—covering both direct lending (where the Bank is the lender) and guarantee structures (where a private-sector bank lends with Bank credit enhancement)—to identify the key operational barriers, assess which have been resolved, and outline what remains. The paper is organized into three parts.

Part I addresses internal (WB) operational constraints that have slowed product development:

- Accounting and derivative classification risk arising from variable-rate features linked to non-financial KPIs (§1);
- Environmental and social framework (ESF) complications when payments extend beyond project supervision (§2);
- Use-of-proceeds constraints that conflict with results-based payment logic (§3);
- The 'runway problem': mismatches between instrument timelines and the monitoring periods needed to verify durable results (§4); and
- Institutional and political economy barriers, including the absence of a product champion, IFC co-benefits methodology mismatch, and operational complexity for country economists (§5).

Most of these constraints are now largely resolved or have known workarounds, although these resolutions need clear expression and renewed management impetus if a SLL WB product is to be rolled out.

Part II turns to the financial structuring and external-facing agenda needed to move from individual pilots to a replicable approach:

- The KPI framework gap—the absence of standardized KPI frameworks for consistent measurement, pricing, and comparability, and the related question of step-up toxicity in ratchet design (§6); and
- Donor capital and credit enhancement—models that may leverage donor capital at greater effectiveness than direct payments, including revolving structures that recycle capital when KPIs are met (§7).

Part III summarizes and concludes. The following table provides the core issues, with resolutions detailed in the main text. The paper proposes next steps, arguing that the immediate goal should not yet be a formal Bank product—the institutional barriers to product creation are too high—but rather a codified approach, analogous to the debt-for-development swap framework.

Issue	Core Problem	Status
Part I: Internal and Donor Operational Constraints		
§1 Accounting: derivative classification	Variable interest = embedded derivative risk on bank books	Technically resolved
§2 ESF complications beyond project cycle	Payments past closure trigger safeguard requirements	Ad hoc workarounds
§3 Use-of-proceeds constraints	Donors want earmarking; results-based logic precludes it	Partially resolved
§4 Instrument timeline mismatch ('runway problem')	DPFs too short for climate KPIs; monitoring beyond closure sets precedent	Workarounds (e.g. DPF + RBCF)
§5.1 Product champion and institutional inertia	FRC mandate unfulfilled; no senior sponsor	Unresolved: action needed for WB SLL product
§5.2 IFC co-benefits methodology mismatch	Co-benefits framework activity-based, not outcome-based	Unresolved, but may not be a binding constraint
§5.3 Operational complexity for country economists	Need to consolidate and simplify and leverage client demand	In discussion internally
Part II: KPIs, Financial Model and Client Demand		
§6.1 KPI standardization	Bespoke negotiation per transaction	Unresolved
§6.2 KPI pricing	No methodology, comparability or pricing basis; pricing = size of available pot	Unresolved
§6.3 Step-up / step-down	Country paying more when failing is reputationally unacceptable	Resolved (SLLs step-down only)
§7 Donor capital and credit enhancement	Direct-payment model depletes funds; credit enhancement could leverage funds more effectively	In discussion internally

Table 1: Summary of Identified Issues

Recommended next step: Develop a codified approach—short of a formal product—that resolves these frictions across guarantee, DPF, and IPF modalities.

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Acronyms

bps: Basis points (one hundredth of a percentage point)
CAT DDO: Catastrophe Deferred Drawdown Option
CFO: Chief Financial Officer
DPF: Development Policy Financing (WB loan product for policy change)
ESF: Environmental and Social Framework
ESMAP: Energy Sector Management Assistance Program (World Bank)
FAB: Feasible and AmBitious framework for KPIs
FASB: Financial Accounting Standards Board
FCI: Finance, Competitiveness and Innovation (World Bank Global Practice)
FFI: Framework for Financial Incentives (WB framework for payments for cross border externalities)
FRC: Financial Risk Committee (World Bank internal committee)
IBRD: International Bank for Reconstruction and Development (the World Bank's lending arm for middle-income countries)
IDA: International Development Association (the WB's lending arm for low-income countries)
IFC: International Finance Corporation (the World Bank Group's private-sector lending arm)
IPF: Investment Project Financing (WB loan product for investment)
KPI: Key Performance Indicator
LPF: The Livable Planet Fund (World Bank trust fund)
MDB: Multilateral Development Bank
MRV: Monitoring, Reporting, and Verification
NDC: Nationally Determined Contribution (under the Paris Agreement)
OPCS: Operations Policy and Country Services (World Bank internal unit)
P4R: Payment-for-Results (WB product)
RBCF: Results-Based Climate Finance
SLL: Sustainability-Linked Lending/Loan
TCAF: Transformative Carbon Asset Facility (World Bank trust fund)

Introduction

The World Bank Group has long recognized the potential of sustainability-linked financial instruments to align borrower incentives with durable climate outcomes. In the private capital markets, sustainability-linked loans now constitute a market of roughly one trillion dollars. Yet within the Bank's own lending portfolio, progress has been halting. The Uruguay model — a sustainability-linked loan in which interest rate step-downs are triggered by the achievement of climate KPIs—remains the most prominent pilot.

Since that pilot, the Bank has accumulated operational experience across a wider range of structures: direct lending with performance-linked step-downs (Uruguay), guarantee-backed commercial SLLs (the Côte d'Ivoire transaction with Standard Chartered, using the first combined IBRD–MIGA guarantee), IDA credit enhancement for domestic capital markets (the Rwanda Development Bank SLB), results-based policy crediting (the Uzbekistan iCRAFT program and a similar Ecuador diesel subsidy program in preparation), and earlier attempts that were partially or fully de-linked during preparation (Eswatini, Kenya, Angola). Outside the Bank, Chile and Uruguay have issued sovereign sustainability-linked bonds on the capital markets, and several countries have executed large-scale debt-for-nature swaps with other multilateral support (Ecuador, Barbados, Belize). A detailed transaction reference table is provided in Appendix 1.

These structures take two broad forms. In the first, the Bank itself is the lender: an IBRD or IDA credit carries a sustainability linkage—typically a step-down in interest rate conditional on KPI achievement. In the second, the Bank provides a guarantee or credit enhancement that enables a private-sector lender to offer more favorable terms, with the sustainability linkage embedded in the commercial loan. The two models raise overlapping but distinct operational issues: direct lending engages the Bank's own accounting, ESF, and supervision frameworks; guarantee structures have fewer internal frictions but involve coordination with private lenders and raise questions about where KPI monitoring responsibility sits.

This paper synthesizes recent internal discussions among WB staff to map the operational barriers that have prevented these structures from scaling, and to outline potential paths forward.

Part One addresses internal operational constraints: accounting and derivative classification (§1), ESF complications (§2), use-of-proceeds constraints (§3), the instrument timeline or 'runway' problem (§4), and institutional barriers including the absence of a product champion, IFC co-benefits methodology, and operational complexity for country economists (§5).

Part Two turns to the external-facing agenda: KPI standardization, pricing, and step-up toxicity (§6), and the donor capital and credit enhancement opportunity (§7).

Part Three concludes and turns to the next steps. The aim is not to propose a finished product, but to codify an approach—analogue to the debt-for-development swap framework—that can inform further institutional deliberation.

Part I: Internal and Donor Operational Constraints

1. Accounting: derivative classification risk

When loan interest rates vary with the achievement of non-financial KPIs, the loan acquires characteristics of a derivative instrument. In the private sector, this issue has been managed by keeping the interest rate ratchets de minimis—typically in the range of five to fifteen basis points—so that the loan can be booked as a standard loan rather than reclassified to a different risk book with different committee oversight. This is why the private-sector SLL market is large (roughly a trillion dollars in linked loans) while the sustainability-linked bond market remains small: banks keep ratchets tiny to avoid accounting complications, which in turn limits the sustainability ambition of the instruments.

Within the World Bank, the accounting teams initially raised similar objections during the Uruguay pilot, arguing that variable interest payments linked to KPIs constituted a derivative. This hurdle appears to have been largely overcome: the FASB-aligned view is that the sustainability linkage is delinked from the underlying credit and therefore does not trigger derivative classification. However, the episode contributed to institutional caution.

2. ESF complications beyond project cycle

The Bank's Environmental and Social Framework (ESF) was designed around the assumption that the Bank finances activities with identifiable impacts. When the Bank purchases emission reduction credits—as in the IPF-based TCAF transactions—the logic is that the Bank is buying a defined output, and therefore ESF obligations are minimal. But when payments extend beyond the project cycle, or when there is any suggestion that the proceeds will be directed to specific activities, the ESF machinery activates: stakeholder engagement plans, beneficiary assessments, safeguard reviews.

This was vividly illustrated in the Ecuador diesel subsidy reform transaction discussion, where a relatively small results-based payment for subsidy reform nearly triggered a full stakeholder engagement process. The Country Economist's concern was practical: if you open a stakeholder assessment on a subsidy reform, you risk reopening the entire political debate around that reform. The resolution appears to be a “soft earmarking” approach, as used in the Uzbekistan case: the project documentation indicates potential uses for the proceeds without creating a binding procurement plan, providing enough assurance that the funds will flow to appropriate sectors without triggering the full ESF apparatus.

This approach works, but it is fragile. Different teams within the Bank interpret the requirements differently, and the lack of a settled institutional position means that each transaction re-litigates the same questions. For DPF-based structures, the tension is especially acute because the instrument is explicitly policy-focused, yet the ESF team may insist on activity-level safeguards for any associated payments.

3. Use-of-proceeds constraints

Donors who contribute to trust funds such as TCAF (Transformative Carbon Asset Facility) or the LPF (Livable Planet Fund) expect to see their money directed to identifiable development activities—they want to cut ribbons, or at minimum, tell taxpayers where the money went. This creates a tension with the results-based logic of sustainability-linked instruments, where the

payment is for an outcome (emission reductions achieved, policy maintained) rather than for a specific expenditure.

In the Eswatini case, this tension contributed to the complete de-linkage of the grant from the loan: what began as a sustainability-linked structure ended as two parallel, unconnected instruments—a loan and a co-financing grant—because the accounting and use-of-proceeds requirements could not be reconciled within a single structure. The task team had no incentive to be ambitious about the grant component, since it provided no real additionality.

In Ecuador and similar debt-swap structures, the use-of-proceeds issue takes a more extreme form. The Ecuador debt swap involved an offshore trust in Delaware with ring-fenced proceeds—a structure the Bank could never support for its own operations. For Bank-managed structures, the resolution lies somewhere between full ring-fencing and total fungibility, and the soft earmarking approach described above may be adequate. But the donor communication challenge remains — it is harder to explain catalytic credit enhancement than a direct payment for forest protection.

4. Instrument timeline mismatch ('runway problem')

A key operational tension is **timing**. Development Policy Financing (DPF) typically closes within 2–3 years, while meaningful climate KPIs—such as forest cover or emissions—require 5–15 years to assess. In Uruguay, KPI payments ran from years 5 to 15, creating a gap: once the DPF closes, Bank supervision ends, raising questions about monitoring outcomes beyond closure.

This creates an institutional concern. If the Bank monitors long-term KPI outcomes for sustainability-linked finance, why not do so for all projects? Given that IBRD loans can span decades, extending supervision risks opening a “Pandora’s box” the institution is not set up to manage.

Mitigations exist. IPF and P4R allow longer supervision, CAT DDOs extend DPF timelines modestly, and third-party verification could shift monitoring outside the Bank. Focusing on **macro KPIs** (e.g. national forest cover) rather than project-level metrics could also reduce the burden.

5. Institutional and political economy barriers

5.1 Product champion and institutional inertia

Beyond technical and legal considerations, institutional factors have contributed to delays in moving this work forward. Governance processes have at times lacked the clarity and internal momentum needed to advance new product development efficiently. The appetite for this product line has varied across relevant stakeholders. Policy interpretations within key operational units have evolved in ways that limit the available design space. There has also been tightening of the interpretation of the contingent finance toolkit in ways that constrain innovation. More broadly, internal processes and incentive structures have not always kept pace with the growing demand for more responsive and flexible client support. Some of the accounting objections have now been overcome, but the institutional changes perhaps now lack momentum and a champion.

5.2 IFC co-benefits methodology mismatch

IFC's existing co-benefits methodology was designed around activity-based and input-based metrics rather than the outcome-based measures that sustainability-linked structures require. Because the SLL logic pays for results—emission reductions achieved, policy commitments maintained—rather than for activities undertaken, the IFC framework does not map cleanly onto these instruments. Rewriting the co-benefits methodology for outcome-based SLL structures remains an open task, though it may not be a binding constraint for near-term World Bank (IBRD/IDA) transactions.

5.3 Operational complexity for country economists

Country economists also face a legitimate bandwidth problem. They have absorbed Paris alignment, co-benefits methodologies, and other new frameworks. Adding sustainability-linked conditionality without clear product guidance and institutional support simply creates another burden. Making the product accessible requires integrating it into existing workflows—ideally as part of a single scorecard or process rather than an additional layer.

One underutilized resource is client advocacy. Countries that have used sustainability-linked structures—Uruguay, Chile, Rwanda, Côte d'Ivoire—are enthusiastic advocates. Uruguay's debt office has been vocal about the value of linking financial terms to policy commitments, even if the dollar amounts are small. Bringing client voices into internal institutional debates could shift the dynamic in ways that staff advocacy alone has not.

Summary of Part I

The internal operational constraints discussed above are, for the most part, understood and either resolved or amenable to known workarounds. The derivative classification question has been settled on FASB-aligned grounds; and the ESF and use-of-proceeds frictions can be managed through soft earmarking. The runway problem remains a design constraint but can be mitigated by choosing longer-horizon instruments (IPF, P4R, CAT DDO) and by distinguishing macro-level KPIs from those requiring project-specific MRV. The institutional barriers—lack of a product champion, IFC methodology mismatch, and operational complexity for country economists—are real but political rather than technical. The following actions would consolidate these resolutions into a usable operational foundation:

1. Clarify the ESF treatment of sustainability-linked payments that extend beyond the project supervision period, establishing a settled institutional position rather than re-litigating this issue for each transaction.
2. Document the accounting resolution achieved during the Uruguay pilot and confirm its applicability to future transactions.
3. Map existing instrument modalities (DPF, IPF, P4R, guarantee, DPF-DDO) to different sustainability-linked use cases, identifying which operational barriers apply to each and how they can be mitigated.

Part II: KPIs, Financial Model and Client Demand

6. The KPI framework gap

A recurring theme across all sustainability-linked structures — both Bank and private sectors — is the absence of a standardized KPI framework. Without standardization, each transaction requires bespoke negotiation over what to measure, how to measure it, what baseline to use, and what level of ambition justifies a given financial incentive. In the private sector, this has led investors to throw up their hands: as one participant noted, banks are not sustainability experts and will not invest in teams to model KPI probability and pricing when they can simply book volume with a negligible ratchet.

6.1 KPI standardization

The discussion identified two fundamentally different motivations for sustainability-linked KPIs, each implying different measurement needs:

- **Transformation:** The goal is to create, demonstrate, and scale new business or financial models or technologies in contexts where they are not or were not previously deployed at scale. Here, the KPI framework must capture progress along a pathway — deployment milestones, cost reductions, adoption rates—rather than simply measuring tonnes of carbon. This can include renewable energy metrics as well as deployment of other replicable technologies and financial and business models; as well as ‘preventing undesirable transformation’ (e.g. avoiding marginal Amazon rainforest destruction, so preventing local forest desertification tipping point).
- **Carbon accounting (stock and flow):** The goal is to maintain and verify a country’s carbon balance in a way that complements—rather than undermines—its Nationally Determined Contribution (NDC). The current carbon credit market creates a perverse incentive: the weaker a country’s NDC, the more headroom it has to sell credits. A standardized stock-and-flow carbon accounting framework for forests, paired with emissions accounting, could counteract this dynamic.

For the second motivation, a feasible starting point would be to develop standardized carbon accounting for a set of small, low-income countries—particularly in West Africa—covering forest carbon stocks and flows, potentially offset against emissions (and therefore valuing emission reductions). This would generate a comparable KPI set that could be applied across the guarantee model, DPF-based structures, and IPF-based instruments. Private-sector participants indicated strong demand for such a framework: if the Bank produced standardized KPI metrics, commercial lenders could embed them directly in their own sustainability-linked instruments without needing to develop bespoke capacity.

6.2 KPI pricing

Even with standardized KPIs, the question of pricing remains unresolved. In Uruguay, the value of the sustainability linkage was simply a function of how much money was available in the pot—there was no fundamental pricing methodology. Two distinct pricing questions arise: first, what metric to price (requiring a combined, comparable indicator); and second, how much to pay per unit of that metric. In theory, a functioning carbon market with a forward curve would provide a benchmark, but no such market exists for most of the KPI categories in question. In its absence, the Bank would need to establish pricing conventions, which would themselves become a form of standard-setting.

6.3 Step-up / step-down?

A related issue is the direction of the interest rate ratchet. In private markets, sustainability-linked loans use both step-ups (penalties for missed targets) and step-downs (rewards for success). For sovereigns, step-ups are seen as unacceptable—raising rates when a country is failing (e.g. during forest loss) creates poor optics. The World Bank therefore uses step-down-only structures, as in Uruguay and Rwanda. While this resolves the optics problem, it limits the range of incentive designs. Guarantee-backed structures may use step-up/down because the commercial lender sets those terms (see Côte d'Ivoire transaction).

7. Donor capital and credit enhancement

A promising way to scale sustainability-linked finance is to use donor capital for **credit enhancement** rather than direct payments. As first-loss capital, guarantees, or collateral, the same funds could leverage a large multiple of their value. This reflects lower borrowing costs reducing risk, the fact that capital is only used in default, and the Bank's advantages (e.g. preferred creditor status, indemnification structures). Furthermore, capital is not necessarily 'used up' and can be recycled

Country examples illustrate the model. In Côte d'Ivoire, an IBRD guarantee backed a Standard Chartered loan: while the sustainability link drew attention, the real value came from credit enhancement. Kenya and Rwanda transactions suggest further possibilities. Adding carbon-linked payments on top of guarantees could raise incentives to around **100 bps**, far above typical private offerings (~15 bps). In, IDA credits combined with repayable results-based climate finance suggest a **revolving model**: if KPIs are met and carbon credits generated, funds are repaid and reused, extending scarce donor capital.

The main open issue is donor alignment. Facilities like TCAF are designed to pay for emissions reductions; shifting toward returnable credit enhancement requires reframing their mandate, and that transition is still underway.

Summary of Part II

The Part II challenges are more fundamental: without standardized KPIs, a pricing methodology, and an efficient financial model, sustainability-linked structures will remain bespoke. Three actions would build the external-facing framework needed:

1. Develop a standardized KPI framework, starting with forest carbon stock/flow accounting and renewable energy metrics across a few LICs.
2. Elaborate the credit enhancement model — including Rwanda's revolving/returnable capital structure — and quantify its leverage advantage over direct payments.
3. Engage client countries through the Coalition of Finance Ministries for Climate Action once the framework is ready to present.

Part III: Conclusions and Next Steps

The experience surveyed in this paper — across eight countries, four instrument modalities, and both direct lending and guarantee structures — points to a clear finding: the technical barriers to sustainability-linked lending at the World Bank are largely solved, but the institutional and design barriers are not.

On the internal side, the picture is encouraging. The derivative classification question has been settled. The ESF and use-of-proceeds frictions have workable, if fragile, solutions in soft earmarking. The runway problem can be managed through instrument choice. What remains is consolidation: documenting these resolutions in one place, establishing settled institutional positions so that each new transaction does not re-litigate the same questions, and finding a senior champion willing to carry the agenda forward.

On the external side, the gaps are more fundamental. Without standardized KPIs, every transaction requires bespoke negotiation — expensive for the Bank, opaque to investors, and impossible to price systematically. Without a credit enhancement model that makes efficient use of scarce donor capital, the financial proposition will remain weak: direct payments deplete funds, while the same money used as a first-loss buffer or revolving guarantee could leverage ten to twenty times its value. And without client demand visibly organized — through forums like the Coalition of Finance Ministries for Climate Action — the internal case for institutional investment in this product line will continue to stall.

The issues matrix and transaction reference table that follow summarize, respectively, the eleven operational barriers and their status, and the full set of sovereign sustainability-linked transactions from which these lessons are drawn. External resources include the [Anthropocene Fixed Income Institute](#) (which has conducted extensive research on linked financing structures) and the [Sustainability Sovereign Debt Hub](#), which convenes MDBs and private-sector participants around credit enhancement and linked financing issues.

The immediate next steps agreed in the discussion are as follows. Consultations will be held with others on the DPF-based approach they are developing, including how they propose to address the runway and ESF issues. Soundings will be taken internally. This framing note will be prepared for internal circulation, and the group will reconvene monthly to iterate. External resources should be consulted as the approach develops, though the most powerful external advocates will be client countries themselves.

The immediate goal should not be a formal Bank product. The institutional barriers to product creation are too high, and the design questions — particularly around KPI frameworks and financial model optimization — are too unresolved. The right target is a codified approach, analogous to the debt-for-development swap framework: a set of documented principles, instrument mappings, and KPI conventions that task teams can draw on without needing to build from scratch each time. This approach should be applicable across guarantee, DPF, P4R/RBCF, and IPF modalities.

Issue	Country Examples	Resolution / Path Forward	Status
Part I: Internal and Donor Operational Constraints			
§1 Accounting: derivative classification	Uruguay (initial objections from treasury/accounting teams)	FASB-aligned view: sustainability linkage delinked from underlying credit, not a derivative. In private sector, ratchets kept de minimis (5–15 bps) to avoid reclassification.	Technically resolved
§2 ESF complications beyond project cycle	Ecuador (stakeholder engagement nearly triggered for subsidy reform RBCF), Uruguay, Uzbekistan	‘Soft earmarking’: documentation indicates potential uses without binding procurement plan (Uzbekistan precedent). Gives assurance without full ESF activation.	Ad hoc workarounds
§3 Use-of-proceeds constraints	Eswatini (complete de-linkage), Ecuador (offshore trust), Uzbekistan	Soft earmarking approach. For IPF credit-purchasing logic, contradiction is structural. Donor communication needs reframing around catalytic capital use.	Partially resolved
§4 Instrument timeline mismatch (‘runway problem’)	Uruguay (KPIs years 5–15), Eswatini, Kenya	IPF and P4R instruments offer longer horizons. CAT DDO extends DPF window to ~6 years. Third-party verification could decouple monitoring from Bank supervision. Macro-level KPIs (e.g. forest cover) tracked anyway may not need loan-specific MRV.	Workarounds (e.g. DPF + RBCF)
§5.1 Product champion and institutional inertia	Cross-cutting (FRC mandate post-Uruguay unfulfilled; OPCS tightening contingent finance toolkit)	Codify approach (not formal product) analogous to debt-swap framework. Use client advocates (Uruguay, Chile, Rwanda, Côte d’Ivoire). Engage Coalition of Finance Ministries for Climate Action.	Unresolved: action needed for WB SLL product
§5.2 IFC co-benefits methodology mismatch	IFC SLL portfolio generally	Co-benefits methodology built around activities/inputs, not outcomes. Needs rewriting for outcome-based SLL structures.	Unresolved, but may not be a binding constraint
§5.3 Operational complexity for country economists	Country economists may find the proliferation of products and green requirements hard to understand, and may lack incentives to adopt new products	Consolidate and simplify. Leverage client demand.	In discussion internally

Part II: KPIs, Financial Model and Client Demand

§6.1 KPI standardization	Uruguay (bespoke livestock KPIs), Kenya, Côte d'Ivoire, all SLL transactions	Develop standardized framework: (a) transformation KPIs (scaling business models) and (b) carbon accounting (stock/flow). Start with forest carbon + renewables for low-income countries. Strong private-sector demand for Bank-produced standards.	Unresolved
§6.2 KPI pricing	Uruguay (pricing = available pot, no methodology), Kenya	What metric/indicator, what baseline (if needed) and how much interest reduction per unit of metric. Carbon forward market would provide benchmark but does not exist. Bank conventions would become de facto standard-setting.	Unresolved
§6.3 Step-up / step-down?	Uruguay (step-down only), Rwanda (step-down only)	Bank avoids step-ups entirely. Country paying more when failing (e.g. forests burning) is reputationally unacceptable. Market convention: step-down only for sovereigns. But this could reduce the incentive if reputation is not lost and if step downs are small.	Resolved (step-down only)
§7 Donor capital and credit enhancement	TCAF/LPF/FFI generally; Kenya credit enhancement)	Credit enhancement: same capital as first-loss buffer leverages perhaps 10–20x vs direct payment. Rwanda model: RBCF repayable if KPIs met, recycling capital. Requires donor buy-in to shift mandate.	In discussion internally

Table 2: Issues and Resolution Matrix

Appendix 1: Existing Sustainability-Linked Sovereign Transactions

The table below summarizes key sustainability-linked sovereign transactions, including both World Bank-involved operations and independent capital market issuances. It covers a range of structures — sustainability-linked loans and bonds, results-based climate finance, guarantee-backed instruments, and debt-for-nature swaps — highlighting their financial terms, KPI design, and status. Together, these transactions illustrate the rapid evolution of performance-linked sovereign finance over the decade.

Transaction	Structure	Financial Details	KPI Approach	Status / Notes
World Bank-Involved Sustainability-Linked Transactions				
Uruguay WB SLL	Direct SLL (DPF with step-down)	\$350m IBRD DPF. Interest step-down if KPIs met; up to \$12.5m savings funded via FIGPS trust fund. UNDP verifier. (source)	Methane emissions intensity per unit beef production vs 1990 baseline (≥33% by 2028–32, ≥36% by 2033–37).	Active. Approved Nov 2023. First WB sovereign SLL. Evaluation begins 2028. (factsheet)
Côte d'Ivoire WB guarantee SLL	Guarantee-backed SLL (IBRD PBG + MIGA)	€433m SLL from Standard Chartered. IBRD €260m first-loss + MIGA €373m second-loss guarantee. 15-year. Step-up/down. (MIGA , WB)	Renewable energy (excl. hydro) ≥11% of installed capacity by 2030. Forest loss ≤300k ha (2025–30). WB FAB methodology.	Active. Signed Sep 2025. First combined IBRD+MIGA guarantee. First sovereign SLL in Africa. (StanChart)
Rwanda BRD SLB (IDA credit enhancement)	SLB with IDA collateral	Dev Bank of Rwanda RWF 30bn (~\$25m) domestic SLB. \$10m IDA as collateral, leveraging ~3×. Part of RWF 150bn program. (source)	ESG compliance in local finance sector; 30% portfolio to women-led projects; 13,000 affordable housing units by 2028.	Active. Issued Sep 2023. First SLB by a national dev bank globally. Oversubscribed (100+ investors). (source)
Uzbekistan iCRAFT / TCAF	RBCF policy crediting (IPF + ERPA)	\$46.3m TCAF grant. Pays \$15/tCO ₂ for verified ERs from energy subsidy reform. Dual: domestic VERs + Art. 6 ITMOs. (source)	Verified emission reductions from energy tariff reform. Target ~60 MtCO ₂ lifetime; iCRAFT purchases ~2.5 Mt.	Active. Signed Oct 2023. World's first policy crediting program. \$7.5m paid Jun 2024. (payment , feature)
Ecuador TCAF diesel subsidy	RBCF / policy crediting (in preparation)	TCAF-supported. Results-based payments linked to diesel subsidy reform. Structure under development.	Emission reductions from fossil fuel subsidy reform (diesel). Crediting methodology in development.	In process. Referenced in paper for ESF complications (stakeholder engagement risk).
Eswatini ASCENT / LPF	IPF + LPF performance grant (de-linked)	\$51m IBRD + \$39m IDA + \$10m LPF grant. Originally SLL; grant de-linked from loan during prep. (link)	Originally SLL-linked. Final: LPF grant for energy access / RE targets. SLL conditionality dropped.	Active (Feb 2025). SLL abandoned accountancy, use-of-proceeds issue

Transaction	Structure	Financial Details	KPI Approach	Status / Notes
Kenya WB-backed SLL + sovereign SLB	Sovereign SLL (WB guarantee-backed) + sovereign SLB (capital markets, WB framework)	(i) \$1.2bn DPO (May 2024) gives enabling policy layer. (ii) \$500m SLB Mar 2026 with WB-developed framework. (iii) SLL inside Affordable Housing Project: \$360m from commercial lenders' WB \$375m concessional + SLL support; OPEC Fund \$75m (DPO , housing , SLB)	SLB: forestation (30% tree cover by 2032) and rural electrification. SLL: deforestation reduction and rural energy access. DPO supports carbon markets, green transport, and forest cover.	In preparation. SLB planned Mar 2026 (Africa's first). SLL board approval expected May 2026. Commercial SLL target scaled back from \$900m to \$360m.
Other Sovereign Sustainability-Linked / Results-Linked Transactions				
Chile Sovereign SLBs	Sovereign SLB (capital markets)	~\$8bn across multiple issuances. First: \$2bn 20-yr (Mar 2022). Jun 2023: EUR SLB with gender KPI. Step-up only (12.5–25 bps). (Chile MoF , award)	GHG emissions ≤95 MtCO ₂ eq by 2030; NCRE ≥60% of power by 2032. 2023 adds women on boards.	Active. First sovereign SLB globally. ~29% of Chile's debt in ESG instruments.
Uruguay Sovereign SLB	Sovereign SLB (capital markets)	\$1.5bn 12-yr (Oct 2022) + \$700m tap (Nov 2023). Unique symmetric ±15 bps step-up/down. IDB framework; UNDP verifier. (Uruguay MoF , IDB)	GHG intensity vs 1990 GDP baseline (≥52% reduction); native forest area (≥3% increase vs 2012).	Active. Only sovereign SLB with step-down. First observation Dec 2025.
Ecuador Galápagos debt-for-nature	Debt-for-nature swap (SPV + blue bond)	\$1.6bn bonds at ~40c/\$. \$656m Galápagos Bond. DFC \$656m insurance + IDB \$85m guarantee. Savings ~\$1.1bn/17 yrs. (IDB)	Marine conservation: ~\$18m/yr for 20 yrs. Galápagos + Hermandad reserves. Covenants = event of default.	Active (May 2023). The world's largest debt-for-nature swap. No direct WB role.
Barbados Debt-for-climate swap	Debt-for-climate swap	\$300m swap backed by EIB + IDB guarantees (Nov 2023). Savings directed to water infrastructure. (WEF)	Climate resilience / water infrastructure commitments.	Active. Caribbean's largest debt-for-climate swap
Belize Debt-for-marine swap	Debt-for-nature swap	\$553m debt at ~45c/\$. Blue bond with DFC + TNC support (Nov 2021). (source)	Protect 30% of ocean territory; marine conservation endowment.	Active. Early modern-scale debt-for-nature model.

Table 3: Issues and Resolution Matrix

Appendix 2: Resources on Sustainability-Linked Sovereign Finance

This table provides an annotated guide to the principal external resources relevant to the operational issues discussed in this paper. It is organized by section of the main paper, so that readers can locate the most pertinent literature for each topic.

Coverage is naturally heavier on the external-facing agenda (§§6–7) — KPI standardization, pricing, and credit enhancement — where a substantial body of work by ICMA, the Sustainability-linked Sovereign Debt Hub, the Anthropocene Fixed Income Institute, and the World Bank's own Global Program on Sustainability now exists. The earlier sections (§§1–5) deal primarily with internal operational constraints for which there is less published external literature, though the market standards (LMA/ICMA principles) and specific transaction documentation are referenced where relevant. Sections §2 (ESF) and §5.2–5.3 (IFC co-benefits methodology, operational complexity) are entirely internal matters with no external literature to cite and are therefore omitted.

Note that the sustainability-linked bond market is predominantly step-up (penalty for missed targets), reflecting bondholder demand for downside protection, whereas the Bank's own SLL structures use step-down only (reward for achievement), reflecting the reputational constraints on a development lender penalizing a country in difficulty. Guarantee-backed commercial SLLs, such as the Côte d'Ivoire transaction, may use symmetric step-up/down ratchets because the commercial lender — not the Bank — sets those terms. These structural distinctions should be borne in mind when reading across the different sources.

Source	Key Content	Relevance
§1 Accounting: Derivative Classification		
LMA/APLMA/LSTA Sustainability-Linked Loan Principles (March 2025) Link	Loan-market standard. 2025 update clarifies SLLs as transition instruments; margin adjustments one of several incentive mechanisms. Governs how ratchets are structured.	Sets the external framework within which de minimis ratchets (5–15 bps) are kept to avoid derivative reclassification.
§2 ESF Complications Beyond Project Cycle		
World Bank, Environmental and Social Framework (Aug 2016; effective Oct 2018) Link	Ten Environmental and Social Standards (ESS1–10) for IPF. Requires E&S risk assessment, stakeholder engagement plans, and grievance mechanisms throughout the project cycle. Applies to IPF only—not to DPF.	The core reference. The ESF's IPF-only scope is what creates the tension: SLL payments extending beyond project closure, or linked to DPF-based structures, sit in an ambiguous zone.
World Bank, DPF Operational Policy (OP/BP 8.60) and E&S Guidance Link	DPF governed by OP 8.60, not the ESF. Separate, lighter-touch E&S provisions: Bank screens for 'likely significant effects' on environment, forests, and natural resources. No mandatory stakeholder engagement plan.	The DPF/ESF boundary is central to §2. SLL structures layered onto DPF inherit DPF's lighter E&S requirements—until associated payments suggest activity-level earmarking, which risks triggering ESF-like obligations.
IEG, Managing Environmental and Social Risks in Development Policy Financing (2015) Link	Found significantly more actions with E&S risk than Bank task teams identified. Concluded that there was 'no formal definition' of E&S risks in DPF policy. Recommended strengthening risk assessment and accountability.	Established that the DPF E&S framework has weaknesses. Relevant to the 'fragile' institutional position described in §2: each SLL transaction re-litigates the same questions.

Source	Key Content	Relevance
IEG, Implementing the World Bank's ESF: Developmental Evaluation (Approach Paper, 2024) Link	Reviews ESF implementation after five years. Notes lagging areas: monitoring/reporting quality, grievance redress, harmonization with IFC/MIGA. Recommends reorienting resources toward risk management during implementation.	Broader ESF implementation context. The harmonization gap with IFC/MIGA echoes the co-benefits methodology mismatch in §5.2.
§3 Use-of-Proceeds Constraints		
World Bank, Uzbekistan iCRAFT / TCAF Policy Crediting (Oct 2023) Link	\$46.3m TCAF grant; \$15/tCO ₂ for verified ERs from energy subsidy reform. World's first policy crediting program.	Establishes the 'soft earmarking' precedent: documentation indicates potential uses without binding procurement plan.
IDB, Ecuador Galápagos Debt-for-Nature Conversion (May 2023) Link	\$1.6bn swap; \$656m blue bond; DFC insurance + IDB guarantee. Offshore SPV with ring-fenced proceeds in Delaware.	Illustrates the full ring-fencing approach the Bank cannot replicate. Contrast case for soft earmarking.
§4 Instrument Timeline Mismatch ('Runway Problem')		
World Bank, Uruguay Sustainability-Linked DPF (Nov 2023) Link	\$350m IBRD DPF. KPI payments structured years 5–15. UNDP as third-party verifier. Methane intensity targets for livestock sector.	The primary case study for the runway problem: KPI window extends well beyond DPF closure.
§5 Institutional and Political Economy Barriers		
Coalition of Finance Ministers for Climate Action Link	Forum of 80+ finance ministers. Helsinki Principles commit members to integrating climate into fiscal and financial policy.	Recommended venue for mobilizing client demand. Uruguay, Chile, Rwanda, Cdl are members and natural advocates.
§6.1 KPI Standardization		
World Bank, Striking the Right Note: KPIs for Sovereign SLBs (Jan 2022) Link	Screens existing datasets for potential sovereign KPIs. Proposes top-down framework for robustness, country alignment, and ambition assessment.	The Bank's foundational KPI report. Starting point for the standardized framework the paper calls for.
World Bank, FAB Matrix: Feasibility and Ambitiousness Assessment (2023–2024) Link	Two-dimensional target-setting tool. Historical feasibility (peer comparison) + forward-looking ambitiousness (vs BAU). Free tool; 171 indicators, 213 economies.	The Bank's operational methodology for KPI target-setting. Applied in Cdl; scalable across transactions.
World Bank, Benchmarked KPIs and Amazon SLB (Working Paper, 2023) Link	Model-based KPIs separating policy effort from exogenous factors (commodity prices, FX). Applied to Brazilian Amazon deforestation; proposes Amazon SLB.	Demonstrates the carbon stock/flow approach recommended for West African LICs. Shows how to benchmark sovereign environmental performance.
ICMA SLB Principles: Sovereign KPI Registry (June 2025 update) Link	Illustrative KPI registry with sovereign-specific additions (2025). Environmental and social themes; core vs secondary classification.	External standard for KPI selection. Bank frameworks should be compatible with the ICMA registry.
AFII, Deforestation and Fixed Income Markets: A Primer (Nov 2025) Link	Deforestation exposure in sovereign and corporate debt. 'Deforestation Debt Universe' for identifying and monitoring exposed issuers. Investor toolkit.	Investor-side demand evidence for standardized forest/nature KPIs. Supports the case for starting with forest carbon.
§6.2 KPI Pricing		
AFII, The SLB Handbook (2024) Link	Practitioner's guide; 40+ case studies. Option-theoretic approach to SLB pricing. Covers ambition assessment and market integrity.	The most developed external pricing framework. Directly relevant to the unresolved pricing methodology gap.

Source	Key Content	Relevance
World Bank, FAB Matrix – Pricing Calibration Application Link	FAB feasibility intervals can inform the calibration of step-down sizes: higher-ambition targets with moderate feasibility justify larger basis-point incentives.	Potential bridge between target-setting and pricing questions. Not yet a full pricing methodology but a building block.
§6.3 Step-Up / Step-Down		
MIGA, Côte d'Ivoire SLL Press Release (Sep 2025) Link	€433m SLL from Standard Chartered. Symmetric step-up/down ratchet in the commercial loan. IBRD first-loss + MIGA second-loss guarantee.	Shows step-up/down is acceptable in guarantee-backed commercial structures.
Uruguay Sovereign SLB (capital markets, Oct 2022) Link	\$1.5bn 12-yr SLB. Unique symmetric ± 15 bps step-up/down. IDB framework; UNDP verifier. First observation Dec 2025.	A sovereign SLB with a symmetric structure. Most SLBs are step-up only. Sovereign-MDB SLLs are mostly step down only.
§7 Donor Capital and Credit Enhancement		
SSDH/Nature Finance, More for Less: Scaling Sustainability-Linked Sovereign Debt (March 2023) Link	Seven scaling pathways; \$250–400bn target by 2030. Calls for pooled MDB credit enhancement. Addresses barriers: data shortfalls, accounting restrictions, coordination failures.	Flagship strategic paper. Directly supports the credit enhancement and revolving capital arguments.
OECD, Sustainability-Linked Bonds in Developing Countries (2024) Link	Six constraints to SLB scale in developing countries; corresponding donor interventions. Luxembourg Stock Exchange data.	External/donor perspective on how to reframe the donor proposition from direct payments to catalytic capital.
World Bank Blog, Rwanda BRD Sustainability-Linked Bond (2023) Link	RWF 30bn domestic SLB; \$10m IDA collateral; ~3x leverage. Part of RWF 150bn program. Oversubscribed (100+ investors).	Illustrates the revolving/returnable model: if KPIs met and carbon credits generated, credit enhancement capital is recycled.
ICMA/LMA, Guidelines for SLL-financing Bonds (June 2024) Link	Guidelines for bonds that finance SLL portfolios. Use-of-proceeds structure applied to SLL assets.	Relevant if Bank or commercial partners wished to securitize or refinance sovereign SLL exposures to recycle capital.
Cross-Cutting: Platforms and Data		
Sustainability-linked Sovereign Debt Hub (SSDH) Link	Cooperative platform: World Bank, EBRD, AIIB, ICMA, CBI. Hosts research, technical guidance, investor statement of intent. Nature Finance as secretariat.	Convening body. Resources page aggregates most of the market literature. Identified in paper's conclusions.
Anthropocene Fixed Income Institute (AFII) Link	Non-profit research on SLB pricing, bondholder engagement, sovereign climate risk. Option-theoretic SLB valuation.	Primary external source on SLB pricing methodology.
World Bank Sovereign ESG Data Portal Link	Open-access platform: ESG indicators for 213 economies; FAB Matrix tool; publications on sovereign sustainability-linked finance.	Operational data backbone for KPI selection and target-setting in bank-supported SLL/SLB transactions.
IFC/Amundi, Emerging Market Green Bonds Report 2024 (June 2025) Link	GSSS bond issuance data: \$800bn cumulative in EMs. SLB local-currency share rising. Comprehensive market sizing.	Market-size evidence for the product line and EM investor appetite.
UN DESA/UNDP, Guidance on Sovereign SDG Bonds (2024) Link	Structuring guidance for sovereign bonds aligned with SDGs. Covers use-of-proceeds and sustainability-linked. \$4tn annual financing shortfall.	Broader development-finance framing within which the Bank's SLL work sits.

Table 4: External Resources on Sustainability-Linked Sovereign Credit Instruments