TOOLKIT

# A Nature-Positive and Socially Inclusive Transition Bond Toolkit

A practical guide for structuring fixed income instruments with biodiversity and social inclusion KPIs to enable a nature-positive transition

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UK PACT

ZSL Zoological Society of London

SAL FOREST

# About this toolkit

This toolkit is designed to support bond issuers, arrangers, technical advisors and government agencies in structuring a nature-positive, socially inclusive climate-transition bond.

It provides guidance on structuring mechanics: which instrument to choose, how to set credible KPIs for monitoring and verification systems, and what precedent exists. It was produced by the Zoological Society of London and Sal Forest with support from the UK Partnering for Accelerated Climate Transitions programme through the Thailand–UK PACT fund.

NAVIGATION

### How to use this toolkit

This toolkit can be used flexibly. If you already know which instrument you want to explore, go directly to the relevant chapter: Sustainability-Linked Bonds in Section 3, Outcome Bonds in Section 4, and Use-of-Proceeds Bonds in Section 5.

If you are still deciding, start with the overview and decision tree in Section 2. The KPI guidance in Sections 3.2 to 3.3 applies across all instruments.

Each chapter also includes case studies, while boxed notes highlight Thailand-specific regulatory and market considerations.

SUGGESTED CITATION

Zoological Society of London and Sal Forest (2026). A Nature-Positive and Socially Inclusive Transition Bond Toolkit. Produced with support from Thailand-UK PACT.

# Contents

# Executive summary

This toolkit sets out how to structure nature-positive, socially inclusive climate-transition capital across three instrument families: outcome bonds, sovereign and sub-sovereign bonds, and sustainability-linked bonds built on credible biodiversity and social KPIs.

| $700bn | 70% | 912bn THB |
|---|---|---|
| needed each year to meet the Global Biodiversity Framework's objectives | average decline in global wildlife populations over the past 50 years | Thailand's outstanding GSSS-labelled bond market, July 2025 |

The toolkit is organised in five parts:

- **Instrument selection** (Section 2): a decision tree for choosing between SLB, Use-of-Proceeds and Outcome Bond structures.
- **KPI methodology** (Sections 3.2–3.3): a step-by-step process for setting biodiversity and social KPIs that are material, measurable, benchmarked and externally verifiable — written to be reused whichever instrument is ultimately chosen.
- **Sustainability-Linked Bonds** (Section 3): including a step-by-step toolkit for setting, baselining and verifying biodiversity and social KPIs.
- **Outcome Bonds** (Section 4): how to design the MRV systems that underpin them, plus Thailand's proposed lighter-touch alternative for layering outcome funding onto a conventional SLB or Green Bond.
- **Use-of-Proceeds Bonds**, corporate, sovereign and sub-sovereign (Section 5): including Thailand-specific sector analysis for agriculture and aquaculture.

> *The open question is no longer whether these structures work — it is whether issuers set KPIs rigorous enough to earn investor trust.*

SECTION 01

# Introduction

Why fixed income markets are the leverage point for halting nature loss, and why that finance has to be socially inclusive to work.

SECTION ONE

# Introduction

Fixed income markets have significant potential to scale capital needed to achieve the goals articulated in the Kunming–Montreal Global Biodiversity Framework (GBF), which was adopted by 188 countries in 2022 and calls for a whole-of-economy transition to halt and reverse nature loss by 2030. With climate change as a key driver, nature is currently disappearing at a rate unprecedented in human history. With species extinction occurring tens to hundreds of times faster than the natural background rate, an estimated one million species are now at risk, while global wildlife populations have, on average, declined by nearly 70% in the past 50 years. Habitat destruction, overexploitation, pollution, invasive species, and climate change are eroding the ecosystems that underpin food security, water supply, climate stability, and economic resilience. Alongside, nature loss, climate and social inequality are deeply interconnected and entrenched social inequities continue to limit the effectiveness and fairness of sustainable development. Women, persons with disabilities, Indigenous Peoples, and other marginalised groups often bear a disproportionate share of environmental and economic risks while having the least access to decision-making and the benefits of investment.

> *An estimated $700 billion is needed to meet the Global Biodiversity Framework's objectives and shift economic sectors to sustainable practices. This finance must in turn be socially inclusive.*

The Global Biodiversity Framework provides a roadmap for governments, businesses, and investors to reverse biodiversity loss and safeguard the natural systems on which all life depends. Embedding Gender Equality, Disability, and Social Inclusion (GEDSI) standards ensures that sustainable investment also delivers equitable outcomes.

The bond market is a central pillar of both international and domestic financial systems, providing a stable and reliable source of capital for governments, companies, and infrastructure. As the largest segment of global capital markets, bonds exert significant influence over investment flows for economic activities at both the domestic and global level. Yet the vast majority of outstanding bonds remain conventional, non-labelled debt financing “business as usual,” with no retroactive environmental or social conditions. This means the opportunity to drive change lies primarily in shaping new issuances and refinancing points, where biodiversity and socially inclusive safeguards with GEDSI provisions can be embedded from the outset. Governments, as some of the largest bond issuers, have a particularly important role: sovereign bonds can set national benchmarks for environmental and social integrity, offering a way to embed biodiversity and climate outcomes directly into fiscal policy.

For bonds to become a true leverage point for halting and reversing nature loss in a socially inclusive way, stronger enforcement and accountability mechanisms are needed. Establishing clear nature-specific metrics and GEDSI criteria within the bond market is therefore essential to shift investment flows decisively toward restoration, conservation, and inclusive nature-positive activities.

This toolkit is designed to support bond issuers, arrangers, technical advisors and government agencies in utilising these principles to structure a nature-positive, socially inclusive climate-transition bond. The report provides guidance on structuring mechanics: which instrument to choose, how to set credible KPIs for monitoring and verification systems, and what precedent exists.

## 1.1 What makes a bond nature-positive and socially inclusive

Biodiversity decline and ecosystem degradation disproportionately impact women and marginalised communities by reducing access to food, clean water, fuel, and other ecosystem services essential for livelihoods and wellbeing.

At the same time, entrenched inequalities, such as insecure land and resource rights, exclusion from environmental governance, and limited access to training or finance, can prevent these groups from participating fully in conservation and stewardship efforts, undermining both social and environmental outcomes.

These dynamics underline why the gold standard for sustainable investment is to integrate both nature-positive and socially inclusive, and particularly gender-responsive objectives, into bond structures together. In doing so these approaches reinforce one another: restoring nature strengthens equity and resilience, while inclusive approaches ensure that the benefits of healthy ecosystems are equitably shared and sustained.

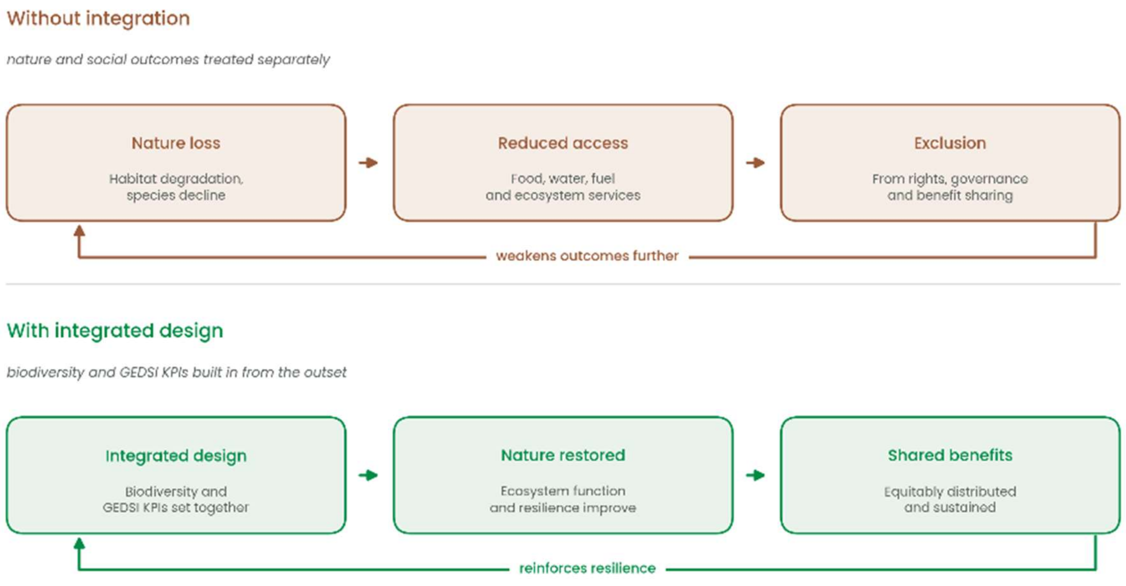



**Figure 1** Without integration, nature loss and social exclusion reinforce each other. An integrated bond design turns this into a reinforcing cycle of restoration and equity.

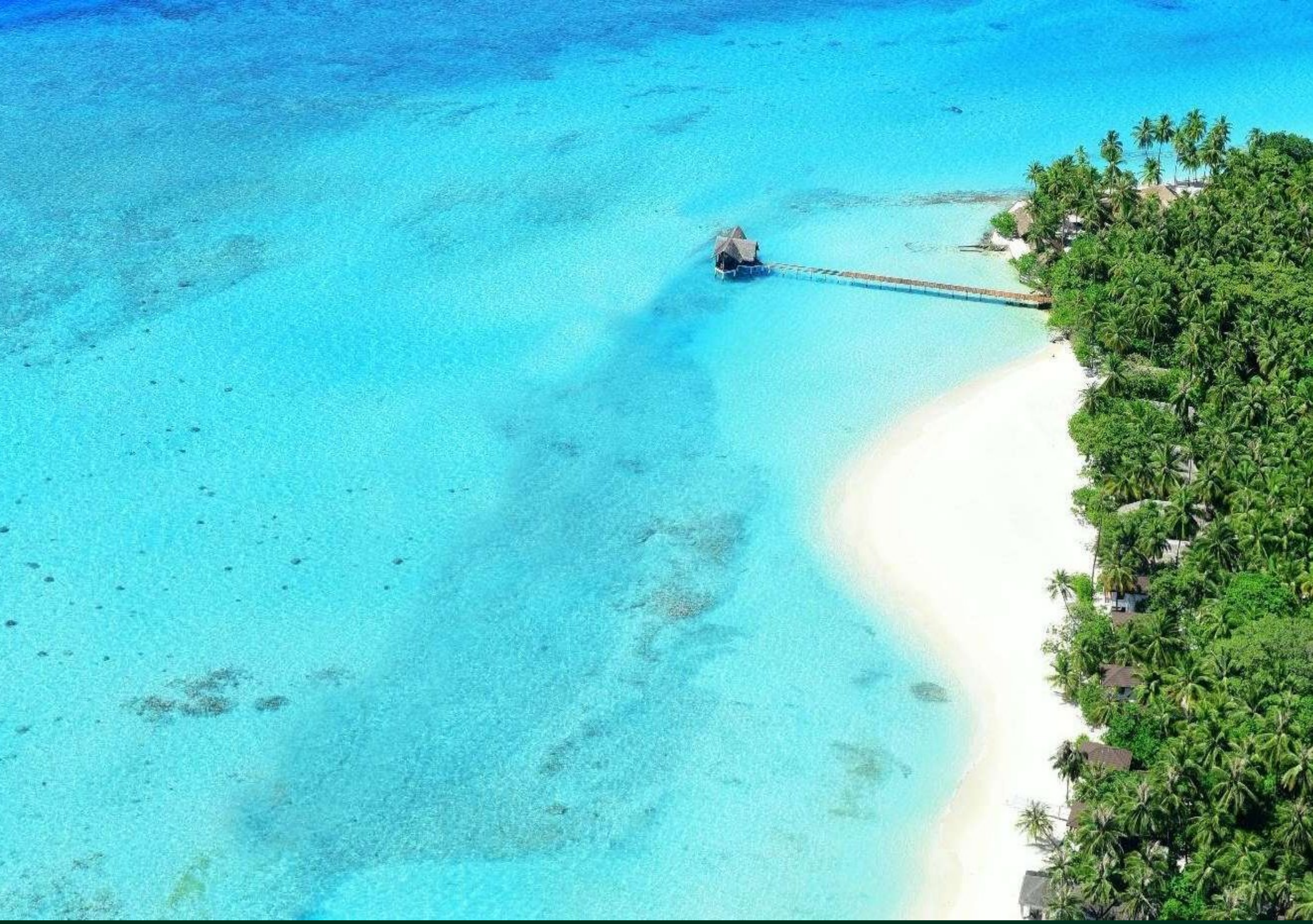
This guidance builds on current principles shared by the International Capital Markets Association (ICMA). However, to support increased ambition, this guide explicitly outlines the structuring of 'nature-positive' transition bonds, in which demonstrable contributions to measurable outcomes, such as ecosystem restoration, species recovery, or net biodiversity gain, are achieved. This goes further than the ICMA guidance on an optional 'nature' label currently provided, which in many cases seeks to avoid harm and requires robust baselines, credible monitoring, and above-business-as-usual targets.

Further, the guide supports the inclusion of stronger Gender Equality, Disability, and Social Inclusion (GEDSI) criteria with measurable benefit for groups typically underserved by mainstream finance, including women, smallholders, Indigenous Peoples, and rural communities, and tracked with the same rigour as environmental outcomes, structured from the outset rather than claimed as a co-benefit.

## 1.2 The standards landscape

Both the Climate Bonds Initiative (CBI) and the International Capital Market Association (ICMA) play crucial roles in shaping the sustainable bond market. While CBI has become the dominant framework, particularly among institutional investors and sovereign or multilateral development issuers, certification is granted only if a project contributes significantly to reducing or avoiding greenhouse gas emissions. As a result, nature-based projects with strong biodiversity outcomes may not be eligible unless they also deliver robust mitigation impacts, while projects that cause harm to biodiversity, such as monoculture plantations or large infrastructure projects, may still be certified if their climate metrics are sufficiently strong.

In June 2025, ICMA released Sustainable Bonds for Nature: A Practitioner's Guide, allowing issuers of green, social, or sustainability bonds to apply an optional "Nature Bond" label to use-of-proceeds instruments aligned with the Green Bond Principles. This label enables investments to be aligned with nature-related goals yet may still fall short of delivering transformative biodiversity recovery, in some cases simply adhering to a "do no harm" principle. This highlights a critical gap: to scale finance that meaningfully contributes to reversing nature loss, a dedicated 'nature-positive' framework or label is needed across all major bond standards. This toolkit's KPI guidance provides direction on how issuers go beyond that voluntary label to structure verifiable, nature-positive outcomes.



SECTION 02

# The instrument landscape at a glance

Four structures, one decision. What each instrument does, and how to choose between them.

SECTION TWO

# The instrument landscape at a glance

## 2.1 Options for bond structures

Table 1 Options for various bond structures

| Structure | Mechanism | Frameworks and principles | Typical ambition | To reach nature-positive / inclusive |
|---|---|---|---|---|
| **Green / Social / Sustainability Bond** | Proceeds fund eligible green or social projects (ICMA GBP/SBG). Nature-related projects eligible, not required. | Green Bond Principles; Social Bond Principles; Sustainability Bond Guidelines | Do no significant harm | Add biodiversity and social KPIs to the use-of-proceeds framework |
| **Nature Bond (optional label)** | A Green or Sustainability Bond where all proceeds target nature. Self-designated, unverified. | Sustainable Bonds for Nature: A Practitioner's Guide | Proceeds to nature; net gain not guaranteed | Pair with verifiable biodiversity KPIs, Sustainability Performance Targets and GEDSI targets |
| **Sustainability-Linked Bond (SLB)** | Coupon or terms vary based on predefined KPIs and Sustainability Performance Targets (SPTs). | Sustainability-Linked Bond Principles | Structurally capable of nature-positive design | Select outcome-focused KPIs; set ambitious SPTs |
| **Outcome Bond** | Investor repayment linked directly to independently verified results, often via a third-party outcome payer. | No formal guide exists. Guidance available on outcome-based financing at the Government Outcomes Lab. | Most direct link to verified outcomes | Requires robust MRV and a credible outcome payer |

*Sovereign and sub-sovereign bonds, also covered in this guide, can apply to any of the above, issued by a national (sovereign) or sub-national (sub-sovereign) government or agency.*

## 2.2 Choosing an instrument

Selecting the right instrument is the first and most consequential decision in structuring a nature-positive, socially inclusive bond. As a starting point:

- **SLB:** issuer wants financing costs linked to entity- or sector-wide biodiversity/social performance, and reliable baseline data exists or can be built.
- **Outcome bond:** a narrow, well-defined ecological or social outcome can be rigorously verified, and a credible outcome payer (donor, DFI, etc.) can be secured.
- **Sovereign or sub-sovereign use-of-proceeds:** financing a defined pipeline of eligible projects, with credit strength (own or guaranteed) to support standard terms.

These can combine; Chile paired a use-of-proceeds sustainability bond with a linked SLB tranche. The modules below treat each in depth with worked examples.

BOX 1

### A note on blue bonds

Blue bonds are use-of-proceeds fixed-income instruments earmarked for financing projects that support the sustainable management and health of marine and aquatic ecosystems. They are recognised as a sub-category of Green Bonds; like the new optional 'nature' label they are issued voluntarily, typically by aligning with the ICMA Green Bond Principles but focused exclusively on ocean and water-related environmental outcomes.

Since the first sovereign issuance, by Seychelles in 2018, multilateral development banks have issued around USD 2 billion, and the private sector roughly USD 9 billion, in blue bonds so far, predominantly in Asia. To date, sustainability-linked bonds present an underused route for marine-focused finance; the only ocean-focused SLB to date was a USD 151 million issuance in 2021 by seafood company Thai Union, with the coupon value linked to targets such as improved monitoring of fishing practices.

Cumulative labelled issuance is still a fraction of the annual green bond market, however best practices are beginning to standardise, following ADB and IFC's publication of Bonds to Finance the Sustainable Blue Economy: A Practitioners' Guide in 2023.

Blue bonds have a clear and growing role within mainstreaming nature in bond markets. With the Kunming–Montreal Global Biodiversity Framework calling for the protection of 30% of oceans by 2030, blue bonds represent a critical financing instrument to achieve this target. Many financed activities, including coral reef restoration, mangrove protection, or sustainable fisheries, directly support biodiversity and ecosystem services. Where such projects deliver and are able to demonstrate measurable net gains, for example through improved marine biodiversity indices or expanded marine protected areas, they hold strong potential to align with and scale a nature-positive ambition.

BOX 2

### A note on gender and social bonds

Gender and Social Bonds (GSBs) are fixed income instruments whose proceeds are exclusively allocated to projects that advance gender equality, social inclusion, and empowerment of marginalised groups. These bonds aim to generate measurable social impact, particularly for women, persons with disabilities, Indigenous Peoples, and other underserved populations, while supporting sustainable economic outcomes. GSBs fall within the broader category of Social Bonds as defined by the ICMA Social Bond Principles. Use-of-proceeds may include investments in women-led enterprises, workforce participation, leadership development, and products or services that improve

> gender outcomes. Like Green Bonds, GSBs rely on a clearly defined framework, transparent reporting, and measurable outcomes.
>
> While many social bonds reference gender or social outcomes, a robust GSB framework requires enforceable inclusion criteria, rigorous monitoring, and accountability mechanisms to ensure that proceeds deliver tangible benefits for target groups. Several global frameworks provide guidance and benchmarks for credible issuance, including the World Bank Gender Bond Framework and the Asian Development Bank Gender Thematic Bond Framework.
>
> The 2X Challenge Criteria, established by DFIs, set eligibility thresholds for investments to be considered “gender-smart”. These include clear definitions of target beneficiaries and eligible projects; integrated international standards such as SDG 5 and the UN Women’s Empowerment Principles; gender-disaggregated indicators to measure impact in employment, leadership, entrepreneurship, and access to services; accountability mechanisms such as step-up coupons, penalties, or linked KPIs; social safeguards to prevent harm, including the inclusion of persons with disabilities and Indigenous Peoples; and robust monitoring, reporting, and verification systems to track allocation and social impact throughout the bond’s life and for post-issuance reporting to investors.

Selecting the right instrument follows from what the issuer is financing.

- Investment intended to improve environmental and social performance across a sector or entity points toward a Sustainability-Linked Bond, where financial terms are tied to measurable KPIs and Sustainability Performance Targets rather than to ring-fenced spend.
- Investment for a defined environmental and/or social project should utilise a Use-of-Proceeds Bond where the underlying investment is commercially viable in its own right, or an Outcome Bond where a verifiable impact is intended that requires a concessional or outcome-funded structure to achieve.

Once an instrument is selected, two further layers of ambition are available: a Use-of-Proceeds Bond financing wholly nature-related activity can carry the optional ICMA Nature Label.

Both Sustainability-Linked and Use-of-Proceeds structures can move beyond baseline compliance by pairing credible GEDSI criteria and nature-positive biodiversity KPIs and SPTs with robust monitoring and verification. The decision tree opposite sets this process out in full.

All nature- or social-themed bonds should report on one or more relevant impact indicators to demonstrate the project’s measurable contribution to nature. Issuers should report on any environmental or social co-benefits of projects. These indicators should measure improvements in project outcomes. Once the instrument is chosen, the process of selecting key performance indicators is crucial to ensuring fixed income instruments are credible and impactful (ICMA, 2024).

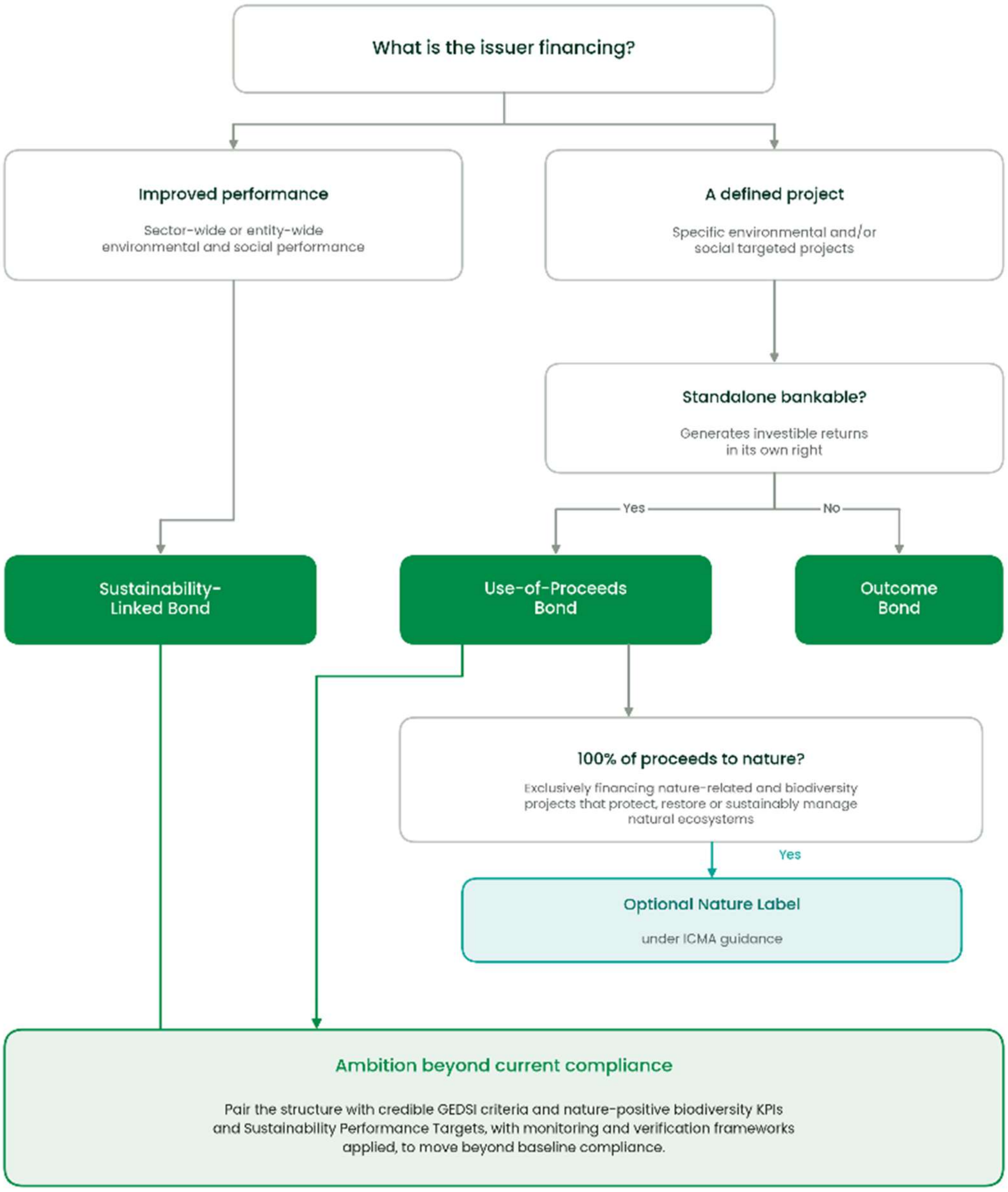



**Figure 2** Selecting the right bond instrument.

SECTION 03

# Sustainability-Linked Bonds

Financing costs tied to entity-wide performance. The KPI methodology in this section applies whichever instrument is finally chosen.

SECTION THREE

# Sustainability-Linked Bonds with biodiversity and social KPIs

Sustainability-Linked Bonds (SLBs) are fixed income instruments in which financial terms, typically the coupon, vary depending on whether the issuer meets predefined KPIs and Sustainability Performance Targets (SPTs). Unlike use-of-proceeds bonds, SLB proceeds are unrestricted and do not have to be channelled to particular climate or social-focused projects. Instead, the incentive is tied to entity-wide or policy-wide performance on the environment or equitable inclusion, and delivers quantified improvements in biodiversity. This makes SLBs well suited to issuers wanting to link financing costs to biodiversity and social outcomes across their whole operations rather than a single project, and allows issuers to underline nature-related strategies and contribute towards the Global Biodiversity Framework. They have been identified as a key instrument to support the global transition to a net zero economy. Although the majority of SLBs and the related instrument, Sustainability Linked Loans (SLLs), have targeted emission reductions, there is a small but growing number of issuances focused on biodiversity and nature.

| $4.8bn | $447bn | 1KPI |
|---|---|---|
| global SLB asset value in 2017, the year of first issuance | global SLB asset value by 2022 | the majority of SLBs carry a single KPI; SLLs rarely exceed four |

## 3.1 Structuring mechanics

ICMA's SLB Principles set out five elements, applying equally to corporate, sovereign and sub-sovereign issuers — the Principles explicitly extend 'sovereign issuer' to sub-sovereigns:

- **KPI selection:** material to the issuer's core business or policy mandate.
- **SPT calibration:** the ambition level, benchmarked against external references where possible.
- **Bond characteristics:** the financial consequence of meeting or missing the SPT, usually a coupon step-up on missing.
- **Reporting:** at least annual, on performance against baseline.
- **Verification:** independent, external, at least annual.

Because SLB proceeds are unrestricted, credibility rests entirely on KPI and SPT quality — making the KPI-setting toolkit below the single most consequential design decision.

## 3.2 Setting biodiversity KPIs

Key Performance Indicators (KPIs) are quantifiable metrics used to measure an organisation's performance. Biodiversity KPIs are linked to specific sustainability objectives and serve as a mechanism to assess sustainability performance. Within SLBs and SLLs, KPIs are core contractual features that are linked to financial outcomes, such as coupon rates or loan margins. Within outcome bonds, KPIs measure and verify the outcomes of a project and may determine payments and other financial features. For a green, blue or social use-of-proceeds project, KPIs are used as impact and reporting indicators rather than being contractual.

KPIs should be material to the organisation’s core business, measurable, benchmarkable against recognised standards, and externally verifiable. Once KPIs are set, Sustainability Performance Targets (SPTs) are established. SPTs define the level of performance to be achieved within a set timeframe — the target for each KPI (ICMA, 2024).

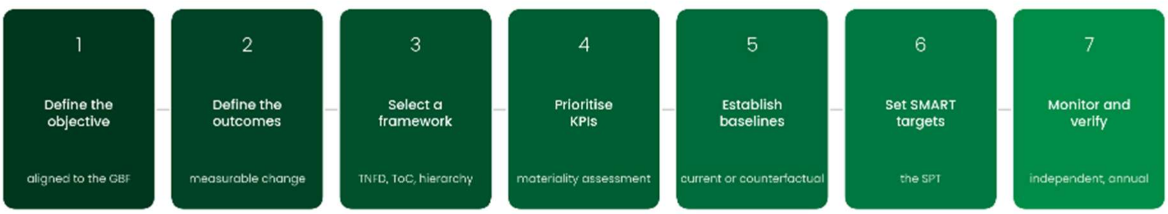
The majority of SLBs and SLLs have one KPI, with SLLs more likely to have multiple KPIs, almost all of which have fewer than four. KPIs should not include business-as-usual activities such as compliance with regulation.

ICMA’s principles provide guidance on the selection of KPIs. They should be:

- Relevant, core and material to the corporate issuer’s overall business and of strategic significance to the issuer’s current and/or future operations
- Consistent with the overall issuer’s sustainability strategy or policies and also reflecting the most material strategic issues for the issuer
- Measurable or quantifiable on a consistent methodological basis
- Externally verifiable by a third party, such as ZSL
- Able to be benchmarked, that is, as much as possible using an external reference or definitions to facilitate the assessment of the SPT’s level of ambition.

Issuers are encouraged to make use of KPIs that have been included in previous reports — annual reports, sustainability reports, Sustainable Development Goals reports. This allows investors to evaluate the historical performance of the KPIs selected (ICMA, 2024).

### 3.2.1 The general process




The KPI-setting process, applied in order.

1. Define the biodiversity objective — the intended outcome, aligned to broader strategy and the Global Biodiversity Framework.
2. Define ecological and social outcomes — the measurable changes required, for example for mangrove restoration: extent, habitat quality, species richness.
3. Select a framework: TNFD for corporate finance, the Mitigation Hierarchy for project finance, Theory of Change for Outcome Bonds.
4. Identify indicators and prioritise KPIs via materiality assessment.
5. Establish baselines.
6. Set SMART targets.
7. Develop monitoring and reporting systems, including verification with a third party.

### 3.2.2 Materiality, quality and baselines for nature

Materiality has two dimensions that should overlap: ecological, meaning which biodiversity components matter most for the objective, and financial, meaning which outcomes create the greatest financial risk or opportunity. Good KPIs measure outcomes not activity, are cost-effective to monitor, cover diverse taxonomic groups, are informative at multiple scales, allow annual reporting, and respond predictably to management change. No single indicator scores well on every criterion, so treat this as a trade-off checklist.

**Table 2 Baseline types for biodiversity KPIs**

| Baseline type | Definition | Best suited to |
|---|---|---|
| Current condition | Ecological state immediately before implementation. | Most projects; the default. |
| Historical | Biodiversity at a defined prior point in time. | Restoration projects recovering a prior state. |
| Reference | Comparison to an intact, similar ecosystem. | Restoration with an accessible reference site. |
| Counterfactual | What would have happened without the project. | Outcome bonds; most rigorous but most data-intensive. |

### 3.2.3 Frameworks for identifying biodiversity KPIs

No single methodology is universal; the right choice depends on the type of financing.

Table 3 **Frameworks for identifying biodiversity KPIs**

| Framework | Steps and logic | Best suited to |
|---|---|---|
| **TNFD-LEAP** | – Locate priority ecosystems and species<br>– Evaluate pressures and condition indicators<br>– Assess financial materiality<br>– Prepare SMART KPIs and monitoring plans | Corporate or entity-wide financing |
| **Theory of Change** | – Define the goal<br>– Map the causal pathway and assumptions<br>– Identify outcomes<br>– Select indicators and prioritise if payment-linked<br>– Fully define KPIs: unit, frequency, target, baseline | Nature finance, outcome bonds, conservation-impact projects |
| **Mitigation Hierarchy** | – Avoid<br>– Minimise<br>– Remediate<br>– Offset, against a no-net-loss or net-gain goal and a counterfactual | Project finance with an unavoidable footprint: plantations, infrastructure, aquaculture |

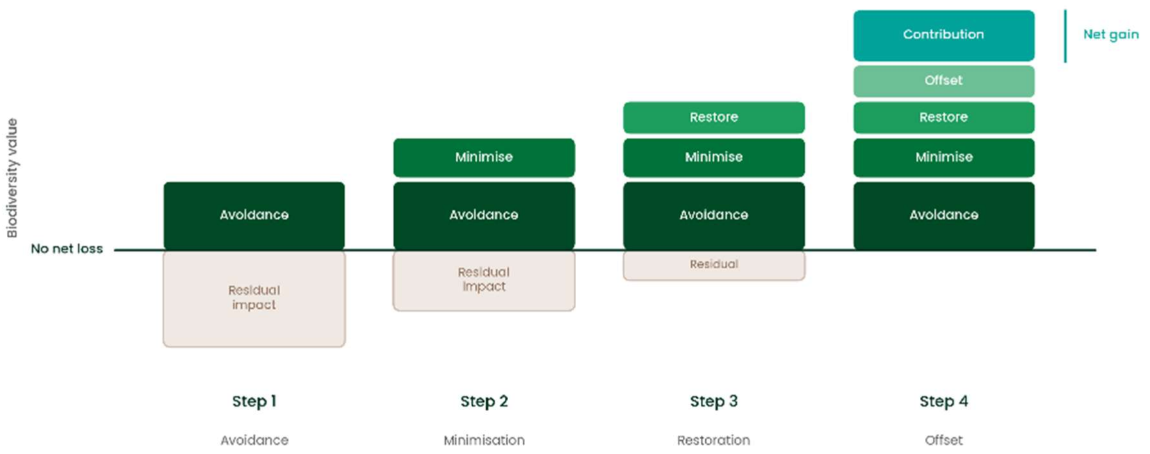



Figure 3 The mitigation hierarchy. *Adapted from Ecology by Design.*

### 3.2.4 Setting social KPIs

Social KPIs measure performance against inclusion objectives, gender equality, women's economic empowerment, and outcomes for smallholders, Indigenous Peoples and rural communities. They need the same rigour as biodiversity KPIs: material, measurable, benchmarked, externally verifiable. The process mirrors that for biodiversity KPIs:

1. Define the social objective and intended beneficiary outcomes

2. Select a framework
3. Prioritise via materiality assessment
4. Find baseline with disaggregated data, by gender, income and community
5. Set SMART SPTs
6. Monitor, report and verify through a third party.

Social materiality — which outcomes matter most to beneficiaries given sector and geography, for example labour conditions and coastal access in Thai aquaculture — should overlap with financial materiality, meaning reputational risk and DFI mandate alignment. Good social KPIs measure outcomes not activity, use disaggregated data, are practical to monitor, avoid rewarding business-as-usual compliance, and are externally verifiable.

### 3.2.5 Frameworks

Table 4 Frameworks for identifying social KPIs

| Framework | What it offers | Best suited to |
|---|---|---|
| ICMA Social Bond Principles | Use of proceeds, project evaluation, management of proceeds, reporting — mirrors the Green Bond Principles. | Social or gender elements alongside an SLB or use-of-proceeds bond |
| 2X Challenge Criteria | Quantitative ‘gender-smart’ thresholds across ownership, leadership, employment, products and finance. | Concrete, benchmarkable gender SPTs |
| UN Women’s Empowerment Principles / SDG 5 | International reference points for meaningful gender progress. | Benchmarking ambition, investor alignment |
| World Bank / ADB Gender Bond frameworks | Tested precedent combining use-of-proceeds with measurable indicators. | Sovereign or sub-sovereign issuers wanting a tested template |

Table 5 2X Challenge criteria

| Focus area | What it requires | Example indicator |
|---|---|---|
| Basic 2X ESG (gateway) | Sound environmental and social risk management to international standards, including safeguarding against gender-based violence and harassment. The investee must not harm women. | GBVH policy and grievance channel in place |
| Governance and accountability (gateway) | Codifies intentionality: gender strategy or oversight and at least one gender-data requirement. | Board or senior oversight of gender targets; sex-disaggregated data collected |

| Focus area | What it requires | Example indicator |
|---|---|---|
| Entrepreneurship and ownership | At least 51% women-owned, or founded by a woman. | Share of women ownership |
| Leadership | Women well represented in senior management or on the board or investment committee. | Threshold is country and sector specific (2X Threshold Tool) |
| Employment | Share of women in the workforce above benchmark and one 'quality' indicator beyond legal compliance. | Threshold is country and sector specific; plus, for example, paid parental leave or safe transport |
| Supply chain | Commitment to source from women-owned businesses or support women in the value chain. | Percentage of procurement spend with women-owned suppliers |
| Products and services | A product or service that specifically or disproportionately benefits women. | Yes / No |
| Portfolio (financial intermediaries and funds) | Share of on-lending or portfolio meeting a direct 2X criterion. | Percentage of loan book to women-led enterprises |

### 3.2.6 Four accountability pillars

Mirroring the Green Bond Principles: first, define scope and use of proceeds and target beneficiaries; second, document the process and materiality behind KPI selection; third, maintain transparent, disaggregated reporting, not just financial allocation; and fourth, secure independent verification to guard against 'social-washing'.

> BOX 3
>
> **Why this matters for Thailand**
>
> GSSS bond disclosures in Thailand have not systematically reported disaggregated employment, gender or community outcomes. Building social KPIs to the same standard as biodiversity KPIs is an opportunity to set a higher domestic benchmark from the outset.

## 3.3 Reporting and verification

- Publish annual reports on KPI performance against baseline, publicly accessible.
- Report biodiversity and social KPIs with equal rigour and frequency — asymmetric reporting undermines the socially inclusive claim.
- Secure independent verification at least annually, ideally covering both ecological and social expertise.

- Reuse KPIs already tracked in annual, sustainability or SDG reports where possible, so investors can assess historical performance.

## 3.4 Case studies

### 3.4.1 Thailand's sovereign SLB, 2024

Thailand issued a THB 30 billion, approximately USD 890 million, 15-year bond, increasing the initial plan of THB 20 billion due to strong demand, with an oversubscription rate of 2.7 times. This bond represents the first sovereign SLB in Asia and the third globally, following similar issues from Chile and Uruguay. The Asian Development Bank and the Global Green Growth Institute provided technical support for the key performance indicators and sustainability performance targets, while DNV offered a second-party opinion. The bond includes two KPIs, both focused on climate: a target to reduce greenhouse gas emissions by 30% from business-as-usual levels, which amounts to 388.5 $MtCO_2e$ by 2030, and a 476% increase in zero-emission vehicle registrations, targeting 440,000 vehicles by 2030. Failing to meet these targets will result in a 2.5-basis-point increase in the coupon rate.

Furthermore, Thailand's Public Debt Management Office has announced plans for a second SLB, estimated at approximately THB 15 billion, with pricing expected in September 2026. This new bond will incorporate a biodiversity KPI aiming to designate at least 30% of the national territory as protected areas, in alignment with the 30x30 Global Biodiversity Framework target. This addition directly addresses the goals outlined in Sections 3.2 to 3.3 to improve structure.

### 3.4.2 Chile's sovereign SLB, 2022–2025

In March 2022, Chile made history by issuing the world's first SLB, a USD 2 billion offering with a 20-year maturity tied to greenhouse gas emissions reductions and the share of renewable energy. Since this milestone, the Chilean Ministry of Finance has progressively enhanced its policy framework by introducing innovative environmental and social KPIs. In 2023, the government mandated that at least 40% of corporate board members supervised by financial regulators must be women by 2031, making this the first social KPI in any sovereign SLB framework globally. Chile further advanced this framework in July 2025 by launching a biodiversity KPI linked to the coverage of protected areas. This initiative explicitly aligns its debt structures with the 30x30 Global Biodiversity Framework and represents the world's first sovereign SLB to tie coupon payments to verified ecological metrics.

The terms for step-up penalties for unmet commitments vary by year of issuance. For instance, the 2023 issuance imposes a 15 basis point increase in the coupon interest rate for each missed milestone, directly linking the country's macroeconomic borrowing costs to its international climate objectives, corporate governance goals, and commitments to ecological preservation.

### 3.4.3 Thai Union SLB, 2021

In July 2021, Thai Union Group achieved a significant milestone by issuing Thailand's first corporate SLB. This bond, valued at THB 5 billion (USD 151 million) and rated A+, was supported by second-party opinions from DNV and Sustainalytics. Thai Union issued two further sustainability-linked tranches in November 2021, maturing in 2026 and 2031. Total sustainability-linked issuance in 2021 reached THB 11 billion.

The bond framework links financial incentives to three specific KPIs: the Dow Jones Sustainability Index ranking for the food products industry, the intensity of greenhouse gas emissions, and the percentage of tuna vessels equipped with electronic monitoring systems or human observers. This marine-centric metric serves as an innovative fisheries management tool to improve working conditions on vessels and combat illegal, unreported, and unregulated fishing.

By successfully meeting its performance targets, Thai Union triggered a coupon step-down, marking the first such event in SLB history worldwide. This bond remains the only significant ocean-focused SLB globally, underscoring the ongoing underutilisation of performance-linked debt to support marine and aquaculture biodiversity outcomes. Thai Union extended the programme in September 2025. It issued two further sustainability-linked tranches, maturing in 2032 and 2035, alongside a green bond aligned to international guidance on financing the sustainable blue economy. Combined issuance in September 2025 reached THB 9 billion.

SECTION 04

# Outcome Bonds

Repayment linked to independently verified results — the most direct link between capital markets and demonstrated impact.

SECTION FOUR

# Outcome Bonds

Outcome bonds link investor repayment, usually a success payment rather than periodic coupons, directly to independently verified results. In nature finance, this has funded discrete ecological outcomes such as species recovery or habitat restoration, underpinned by rigorous MRV. It offers the most direct link between capital markets and demonstrated impact, at the cost of higher transaction complexity and, to date, reliance on concessional or grant capital.

## 4.1 Structuring mechanics

Outcome bonds typically separate two roles combined in a conventional bond: principal is repaid by a conventional guarantor, often an MDB, giving investors a familiar credit profile, while the success payment is funded by a distinct outcome payer — a donor, foundation, or corporate buyer of verified results — contingent on independent verification.

1. Define a single, narrow, rigorously measurable outcome. Broad or diffuse outcomes can be hard to verify or price.
2. Map the Theory of Change to achieve this outcome and design an associated MRV framework first. This is important to achieve early, as credibility rests on independent, expert verification.
3. Secure a credible outcome payer. Historically this has been donors and the public sector, although recent issuances demonstrate an increasing number of corporates buying verified results, for example through carbon removal units.
4. Structure the issuer and principal guarantee, typically via a multilateral development bank.
5. Set baselines and targets for subsequent measurement, reporting and verification by a third party.

## 4.2 Case studies

### 4.2.1 Wildlife Conservation Bond, the 'Rhino Bond', 2022

The first Wildlife Conservation Bond, informally the “Rhino” Bond, saw proceeds fund conservation in two South African parks; instead of coupons, a final success payment, funded by the Global Environment Facility, is paid if verified data shows rhino population growth. IBRD, the lending arm of the World Bank, guarantees principal back to investors.

ZSL, with the IUCN/SSC African Rhino Specialist Group, built a rhino-specific Theory of Change yielding seven KPIs, but linked only one — increased rhino population over five years

— to payment; the other six incentivised the monitoring rigour needed to measure it with confidence. This represents a useful design principle, demonstrating that not every KPI needs to be a payment trigger.

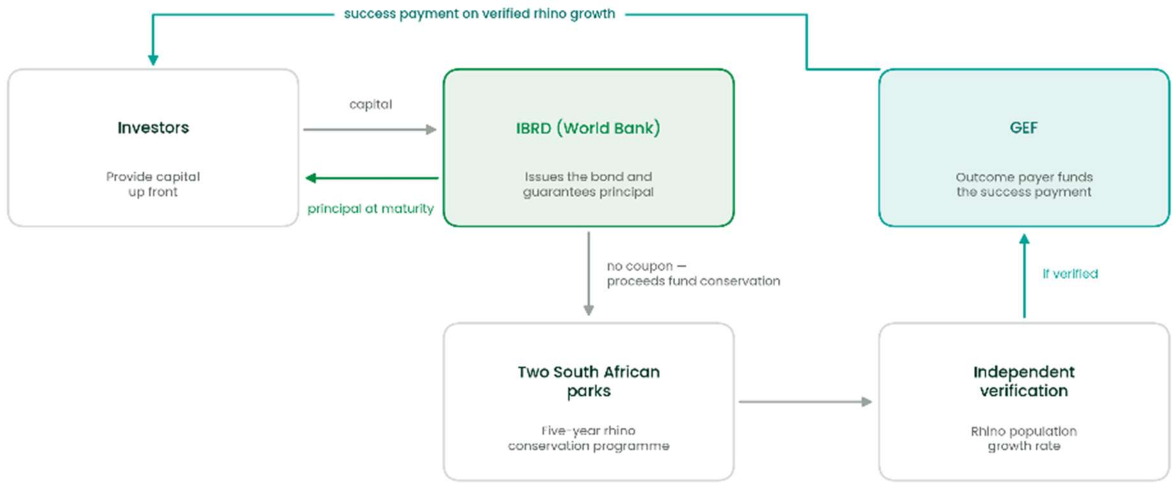



Figure 4 Rhino Bond design.

### 4.2.2 Amazon reforestation-linked outcome bond, 2024

World Bank, USD 225 million, financing Amazon reforestation by Mombak, with success measured via Carbon Removal Units which Microsoft has committed to purchase. Through this structure the corporate buyer substitutes for a donor-funded outcome payer. Like the Wildlife Conservation Bond, IBRD guarantees principal.

The World Bank has issued at least five outcome bonds to date, also covering plastic waste reduction in Ghana and Indonesia; other MDBs and corporate banks are exploring the structure, though transactions remain small and often concessionally funded.

SECTION 05

# Use-of-Proceeds Bonds

A defined pipeline of eligible projects, and the Thailand-specific sector analysis for agriculture and aquaculture.

SECTION FIVE

# Use-of-Proceeds Bonds

Green, blue and sustainability bonds fund a defined pipeline of projects under a published framework aligned to ICMA principles.

## 5.1 Corporate use-of-proceeds bonds

Corporates are the largest single issuer group in the global labelled bond market. Outstanding corporate-issued sustainable bonds reached USD 2.4 trillion at end-2024, ahead of the combined public total of USD 2.2 trillion. Corporates have also driven recent growth specifically within green bonds: their share of USD-denominated green bond issuance rose from 50% in 2020 to roughly two-thirds by 2025. Green bonds remain the largest labelled category overall, representing around 60% of the cumulative GSSS+ market.

| | | |
|---|---|---|
| 2.4tn USD<br>outstanding corporate-issued sustainable bonds at end-2024 | 60%<br>green bonds' share of the cumulative GSSS+ market | 34%<br>public sector share of the cumulative USD 6.1tn labelled market |

- Build the framework on ICMA's four core components: use of proceeds, process for project evaluation and selection, management of proceeds, and reporting.
- Secure a second-party opinion or certification pre-issuance. The Climate Bonds Standard and regional equivalents, such as the ASEAN Green, Social and Sustainability Bond Standard, offer certifiable structuring routes with pre-built eligibility criteria.
- Pair proceeds allocation with entity-level sustainability disclosure where possible, so investors can assess the issuer's wider transition, not just the ring-fenced project.
- Report allocation and impact at least annually, disaggregated enough that investors can distinguish nature-positive spend from general environmental spend.

## 5.2 Sovereign use-of-proceeds bonds

When issued by sovereigns or sub-sovereigns, nature-related proceeds should align to the issuer's National Biodiversity Strategy and Action Plan. Public sector issuance — sovereign, agency and sub-national combined — is around 34%, or USD 2.07 trillion, of the cumulative USD 6.1 trillion labelled bond market, with sovereigns 34% of that and green bonds the dominant instrument at 59%.

- Publish a framework mapping eligible expenditure to budget lines.

- Secure a second-party opinion pre-issuance.
- Align nature-related proceeds to the NBSAP.
- Draw on MDB or bilateral technical assistance for first-time nature-themed issuance, following ADB, GGGI, IDB Invest and IFC precedent.

## 5.3 Sub-sovereign use-of-proceeds bonds

Sub-sovereign issuers — a national or sub-national state, provincial or municipal government or agency — currently account for around 20% of cumulative public-sector labelled issuance. The US municipal green bond market alone grew to 213 unique issuers by 2021, dominated by water and sewer at 30% and transit at 24%, both of which are relevant to biodiversity. Nature-based solutions suit this segment well: Moody's estimates that around 15% of 2024 green and sustainability proceeds went to nature projects, and many nature-based solutions — coastal protection, watershed management, urban green infrastructure — are inherently local government mandates.

Sub-sovereign issuers typically carry weaker standalone credit and a narrower revenue base than the sovereign, changing structuring priorities:

- **Credit enhancement:** guarantees or concessional co-financing from national governments, MDBs or donor-backed facilities. Seychelles' 2018 blue bond used a World Bank guarantee, cutting borrowing costs by around 5 points.
- **Revenue structure:** clarify general obligation, meaning tax-backed, versus revenue bond, meaning project cash flow such as utility tariffs.
- **Aggregation:** pool smaller projects or municipalities to reach efficient issuance size.
- **National alignment:** map eligible categories to the national taxonomy, for example Thailand's, to reduce framework cost and build investor confidence.
- **Technical assistance:** typically a bigger capacity gap than sovereign debt offices; consistently the deciding factor in successful precedent deals.

Table 6 **Sovereign versus sub-sovereign considerations**

| Consideration | Sovereign | Sub-sovereign |
|---|---|---|
| Credit profile | National rating; usually investable | Often needs guarantee or enhancement |
| Revenue backing | General tax revenue | General obligation or project revenue |
| Scale | Larger, for example THB 30–130bn | Smaller; aggregation often needed |
| Nature-based solutions fit | National NBSAP alignment | Often a natural local-government mandate |

## 5.4 Potential sectors

There are key sectors which demonstrate potential for green, blue, social or sustainability bonds, with nature-positive indicators and increased ambition on GEDSI criteria.

BOX 5

### Potential sectors in Thailand

Agriculture employs around 30% of Thailand's workforce for around 10% of GDP; rice is the largest agricultural greenhouse gas source, the sector is the largest water user, at 95% for 8% of GDP, and the largest water polluter, and smallholder households face acute financial vulnerability, with 40% below the poverty line.

Aquaculture generated USD 1.5 billion in 2022 exports but has driven major mangrove loss, water pollution and biodiversity loss, alongside documented labour abuses and severe smallholder disease and debt exposure.

### 5.4.1 Mapping sector risk to instrument choice

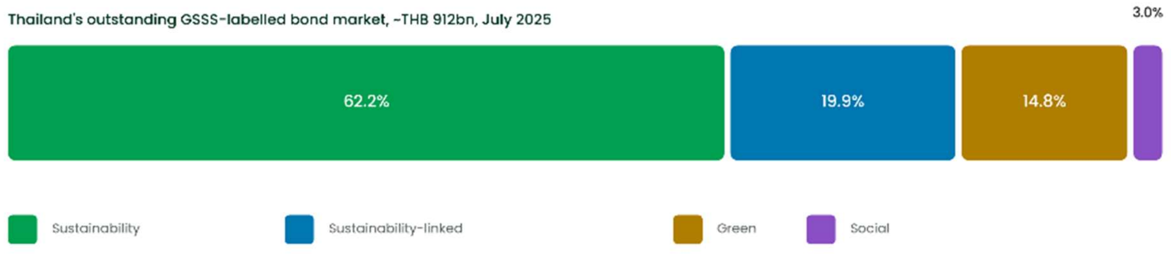
Table 7 Mapping sector risk to instrument choice

| Sector risk or opportunity | Why |
|---|---|
| Methane reduction in rice, on the existing NAMA baseline | Sector-wide KPI; builds on the existing sovereign SLB precedent |
| Smallholder credit access, fair-price contracts | Needs proceeds allocation paired with disaggregated reporting, on the TLFF template |
| Provincial water and irrigation, coastal protection | Natural sub-national mandate; matches the global sub-sovereign pattern |
| Forced labour and tenure risk in aquaculture | Requires disaggregated, verified social KPIs regardless of structure |

Six conditions, drawn from the Climate Policy Initiative's nature-based solutions toolbox and contextualised for Thailand, will determine uptake:

1. **Coordinated investment architecture:** multi-stakeholder platforms with interoperable data and consistent project criteria.
2. **Policy and regulatory clarity:** SEC and ThaiBMA infrastructure exists, but biodiversity-specific eligibility criteria are not yet systematically embedded.
3. **Beneficiary engagement:** community-led models such as UNDP BIOFIN, reaching over 100,000 households, exist but need stable financing to scale.
4. **Guarantees and blended finance:** the consistent enabler in comparable early-stage deals, such as Seychelles, could be necessary for a first sub-sovereign or sovereign bond.

5. **Project bankability:** smallholder and community projects often lack the financial structuring and governance capital markets require.
6. **Credible impact measurement:** investment-grade, independently verified KPIs are essential, as generic indicators will not satisfy investor due diligence.




Composition of Thailand's GSSS-labelled bond market. *Source: Thai Bond Market Association GSSS registry, 2025.*

> BOX 6
>
> ### Thailand's GSS-labelled market
>
> Thailand's GSSS-labelled bond market reached around THB 912 billion outstanding by July 2025 — 62.2% sustainability, 19.9% sustainability-linked, 14.8% green and 3.0% social bonds — a credible platform to build on. What is missing is systematic biodiversity and disaggregated social performance reporting within that existing market, not market infrastructure itself.
>
> No Thai sub-sovereign green, blue, or nature bond has been issued yet. Government and state-owned enterprise bonds already make up around 73% of the domestic bond market, so the institutional base exists; however, a defined sub-sovereign project pipeline aligned with the national taxonomy will be required to further develop issuance.

## 5.4.2 Potential barriers

**Table 8** Potential barriers

| Challenge | Implication |
|---|---|
| Extra cost and resource burden | Framework development and reporting exceed a plain-vanilla bond; a World Bank survey found this the top reason sovereigns decline thematic issuance. |
| Thin project pipeline | Tenure uncertainty, smallholder fragmentation and biosecurity risk constrain pipeline; project-preparation facilities and blended finance to bundle small projects are needed. |
| Limited 'greenium' | Pricing advantage is small and inconsistent globally; Thai issuers report no clear cost benefit over conventional bonds. |
| Capacity constraints | Capacity-building for issuers, verifiers and investors remains a precondition. |

SECTION 06

# Conclusion

What matters more than the instrument, and the gaps still worth naming.

SECTION SIX

# Conclusion

Nature-positive and socially inclusive bond structures are no longer theoretical. Thailand's own sovereign SLB, Thai Union's coupon step-down, and the growing family of biodiversity-linked instruments worldwide show that credible KPIs can move real capital.

The open question is no longer whether these structures work — it is whether issuers set KPIs rigorous enough to earn investor trust, with biodiversity and social outcomes built in from the outset rather than added later. Three things matter more than which instrument an issuer eventually picks:

1. **Start with the KPI, not the instrument.** The methodology in Sections 3.2 and 3.3 works whichever structure is chosen: an SLB, an Outcome Bond, a Use-of-Proceeds bond, or the blended structure in Section 4.2. KPI quality is what makes any of these credible.
2. **Match the structure to what the issuer can deliver.** A full Outcome Bond needs an MDB guarantor and a credible outcome payer; the blended structure needs neither. Sovereign, sub-sovereign, and corporate issuers face different credit, data, and capacity constraints, and the right structure reflects that rather than chasing the most ambitious option available.
3. **Report what happened, not just what was promised.** Thai Union's step-down and Suzano's 2026 step-up both matter for the same reason: they show the mechanism working as designed. A market built on verified outcomes, including missed ones, is worth more than one built on unverified ambition.

The gaps that remain are worth naming rather than glossing over. Most SLBs issued to date, including Thailand's own, are still climate-only. No completed nature-linked bond in the region yet pairs biodiversity and social KPIs at meaningful scale. And structures combining tranching or subordinated capital with nature outcomes remain largely untested. Closing these gaps is exactly what the Mangrove Restoration Outcomes Bond and BAAC Agriculture Bond prototypes developed under this programme are designed to do, subject to applicable regulatory permissions and full compliance with all relevant local regulations.

> *The next issuance, not the next toolkit, is what will prove whether this approach scales.*

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# A Nature-Positive and Socially Inclusive Transition Bond Toolkit

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