Planet Tracker

# A DEFORESTATION-LINKED SOVEREIGN BOND

## BRAZIL PROVIDES A CASE STUDY FOR A NEW VARIETY OF SUSTAINABILITY-LINKED SOVEREIGN BOND


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## Why read this report?

Deforestation is a significant problem for the world in terms of limiting climate change and a threat to the natural capital[1] base that underpins the economic strength of a number of countries, including Brazil.

This report recommends an innovative **Deforestation-Linked Sovereign Bond**, linking coupon payments to success in reducing deforestation as part of the solution - see Figure 1.

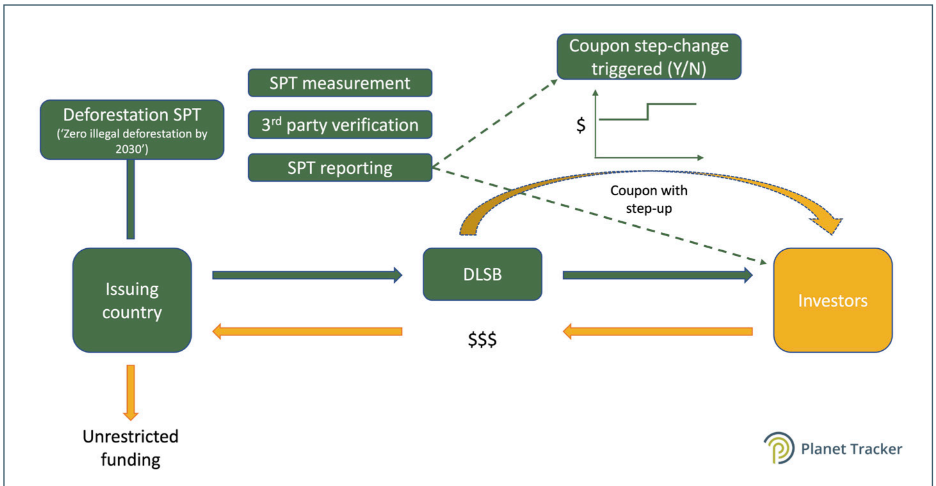
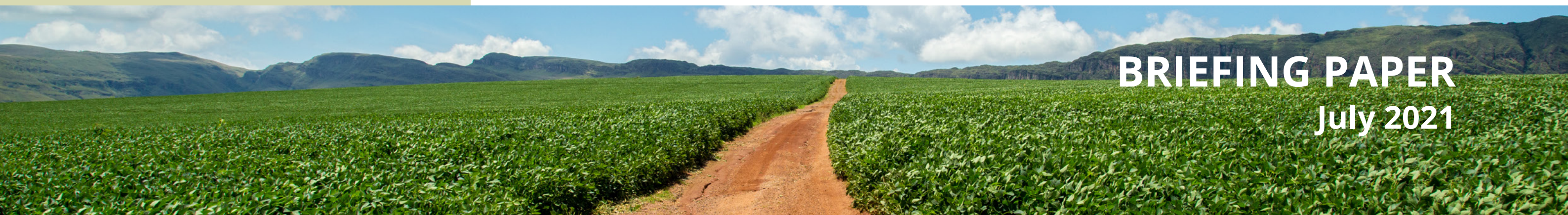



*Figure 1: Deforestation-Linked Sovereign Bond. (Source: Planet Tracker)*

## Executive Summary

We recommend a **Deforestation-Linked Sovereign Bond** (DLSB) to help countries with valuable state-owned forests to fund their transition to a sustainable economy. A DLSB would align the government's fiscal and sustainability incentives and boost the country's sovereign health.

[1] The stock of renewable and non-renewable resources (e.g. plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people



BRIEFING PAPER
July 2021

# Case study: Brazil

## Brazil's sovereign health challenges are mounting

We use Brazil as a case study for a Deforestation-Linked Sovereign Bond because Brazil's sovereign health is being negatively impacted by deforestation.

As we discussed in our recent report (**Brazil: roadmap to sustainable sovereign bonds**) jointly written by Planet Tracker and the Grantham Research Institute,[2] increasing deforestation remains the biggest threat to Brazil's natural capital base, accelerating global warming, harming biodiversity and impacting Brazil's rainfall and temperature patterns.

As a result, Brazil's current climate trajectory is rated 'highly insufficient' by ClimateActionTracker.org (on a path to 3-4°C by 2050 compared to the Paris target of 20°C).

## A DLSB as part of a roadmap to boosting sovereign health

A Sustainability-Linked Sovereign Bond (SLSB) is a flexible financial instrument that does not restrict a government in terms of the use of proceeds, but which commits the sovereign to coupons which vary depending on its success or failure in meeting specific Sustainability Performance Targets (SPTs).

SLSBs are particularly useful where government projects are too small to support the size of bond issuance normally required by international markets (since the proceeds can be used for specific projects and general spending), and/or where governments want to fund the projects required to transition to a more sustainable economy and can commit to specific performance targets based on progress to that objective.

The ESG-labelled bond market has grown significantly in 2020 and demand remains strong, creating an opportunity for countries to gain access to cheaper finance by linking some of their bond issuance to Sustainability Performance Targets. Issuers can choose the SPT that is appropriate to their situation from across the Environmental, Social and Governance spectrum.

For countries with ambitions to limit deforestation, a Deforestation-Linked Sovereign Bond is an obvious version of an SLSB to consider.

In our recent report **Brazil: roadmap to sustainable sovereign bonds**, we recommend a DLSB as part of a four-step roadmap that Brazil could follow to avoid increasing external sustainability pressures and to invest to increase its sovereign health.

## A Deforestation-Linked Sovereign Bond

In Brazil's case, we recommend a Sustainability Performance Target based on its original Nationally Determined Contribution (NDC) Paris target of zero illegal deforestation in the Brazilian Amazonia by 2030.

We believe a DLSB will allow Brazil and other countries in a similar position to take advantage of the growing market demand for sustainable investments while also benefitting from their efforts to reduce deforestation (and indirectly aligning the interests of their citizens and businesses with these efforts).

Investors will have an attractive investment with sustainable characteristics and cash flows that offer some diversification benefits compared to more traditional government bonds.

[2] The London School of Economics Grantham Research Institute on Climate Change and the Environment (https://www.lse.ac.uk/granthaminstitute/about/about-the-institute/).

More broadly, the process of setting up the required framework to support the issuance of a DLSB will enable Brazil and other countries to build out an ESG-labelled sovereign bond benchmark curve, thereby facilitating further acceleration in growth in their local ESG-labelled non-government debt markets, encouraging significant investments into their economies.

## Example DLSB Term Sheet

We have provided an example term sheet to illustrate the key features that might be found in a DLSB issued by Brazil, modelled on Brazil's existing global USD bonds programme - see Table 1.

*Table 1: Example term sheet*

| | |
|---|---|
| Issuer | Federative Republic of Brazil |
| Title of security | 3.875% Global Deforestation-Linked Bonds due 2032 |
| Listing | Luxembourg Stock Exchange |
| Expected Ratings | BB- / Ba2 / BB- (S&P / Moody's / Fitch) |
| Tenor | 10 years (July 21, 2032) |
| Currency / Amount | USD 500,000,000 |
| Status | The global bonds will rank equal in right of payment with all of Brazil's existing and future unsecured and unsubordinated external indebtedness. |
| Denominations | USD 200,000 and multiples of US$ 1,000 thereafter |
| Principal and interest | Payable in US dollars |
| Interest and payment dates | 3.875% per annum, payable on January 21 and July 21 each year (360-day year basis) |
| Deforestation-Linked Coupon Step-Up/Down | 50bp increase or decrease commencing on the second anniversary of the bond issue date and annually thereafter |
| Deforestation-Linked Performance Target | Zero illegal deforestation by 31 December 2030 with interim annual targets set out in the prospectus |
| Use of Proceeds | Brazil will use the net proceeds from the sale of the securities for the general purposes of Brazil, including the payment of its indebtedness |
| Governing Law | The global bonds will be governed by the laws of the State of New York, except with respect to the authorization and execution of the global bonds, which will be governed by the laws of the Federative Republic of Brazil. |

# Introduction: Sustainability-Linked Sovereign Bonds

## The opportunity

The market for ESG-labelled bonds[3] has grown at an extraordinary pace over 2020 and is expected to continue growing through 2021as the types of bonds issued expands - see Figure 2.

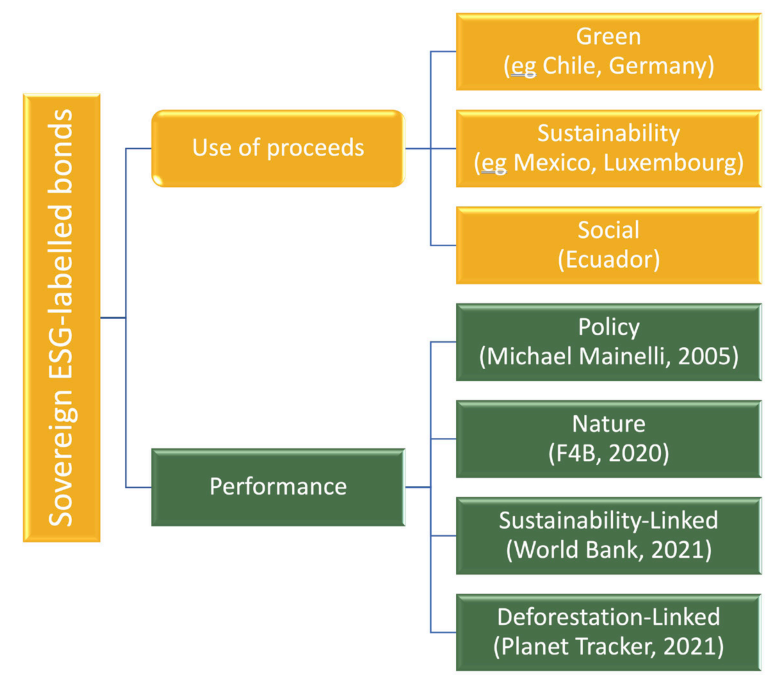



*Figure 2: Sovereign ESG-Labelled Bonds. (Source: Planet Tracker)*

Governments have been slow to join this trend, but issuance is now accelerating. At the end of March 2021, the Climate Bonds Initiative reported that 'twenty-four national governments have issued SGSS[4] bonds totalling a cumulative USD 111 billion'. To date, all the ESG-labelled sovereign bonds issued have been 'use of proceeds' bonds - no country has issued a 'performance' bond (although, as Figure 2 shows, the concept has been around for some time).

There is some evidence that ESG-labelled bonds can result in a lower cost of debt to the issuer as a result of this demand i.e., a higher price for the government issuing the bond, referred to as a 'greenium' over the price for a similar non-green bond (a bond trading in line with the non-green equivalent immediately after being issued is referred to as 'pricing on the curve'). However, attributing all this effect to the bonds' ESG characteristics might be unwise[5] and the evidence is mixed - see Table 2.

[3] Bonds where the use of the proceeds is connected in some way to an environmental, social, or governance-related purpose or the payment of the coupon is linked to a key performance measure.

[4] Sovereign Green, Social, and Sustainability.

[5] Other factors at play could include liquidity, technical factors relating to the structure of the bond, market sentiment at the time of issue, etc.

| Country | Pricing date | Original size (USD bn) | Currency | Pricing outcome |
|---|---|---|---|---|
| Belgium 2033 | 26/02/2018 | 5.5 | EUR | On the curve |
| Chile 2031 | 25/06/2019 | 1 | EUR | On the curve |
| Chile 2032 | 22/01/2020 | 0.75 | USD | Greenium |
| Chile 2040 | 21/01/2020 | 1.4 | EUR | On the curve |
| Chile 2050 | 17/06/2019 | 1.4 | USD | Greenium |
| Egypt 2025 | 29/09/2020 | 0.75 | USD | Greenium |
| France 2039 | 24/01/2017 | 7.5 | EUR | Greenium |
| German BOBL 2025 | 04/11/2020 | 5.9 | EUR | Greenium |
| German Bund 2030 | 02/09/2020 | 7.7 | EUR | Greenium |
| Hungary 2035 | 02/06/2020 | 1.7 | EUR | On the curve |
| Indonesia 2023 | 22/02/2018 | 1.25 | USD | On the curve |
| Indonesia 2024 | 12/02/2019 | 0.75 | USD | On the curve |
| Indonesia 2025 | 16/06/2020 | 0.75 | USD | Greenium |
| Ireland 2031 | 10/10/2018 | 3.5 | EUR | On the curve |
| Lithuania 2028 | 30/04/2018 | 0.02 | EUR | New issue premium |
| Luxembourg 2032 | 07/09/2020 | 1.8 | EUR | New issue premium |
| Mexico 2027 | 09/14/2020 | 0.9 | EUR | On the curve |
| Netherlands 2040 | 21/05/2019 | 6.7 | EUR | Greenium |
| Poland 2021 | 12/12/2016 | 0.8 | EUR | New issue premium |
| Poland 2026 | 31/01/2018 | 1.2 | EUR | On the curve |
| Poland 2029 | 28/02/2019 | 1.7 | EUR | On the curve |
| Poland 2049 | 28/02/2019 | 0.6 | EUR | New issue premium |
| Thailand 2035 | 13/08/2020 | 0.975 | THB | Greenium |

*Table 2: Sovereign Green, Social, and Sustainability (SGSS) Bond Issuance to 31-12-2020. (Source: Climate Bond Initiative 2021 Sovereign Green, Social and Sustainability Bond Survey)*

We believe there is an opportunity for Brazil and other countries to take advantage of this movement – potentially attracting new investors and so extending their investor base while also strengthening their sustainability credentials.

Brazil's total debt is equivalent to 87.2% of GDP which is high by historical standards (and compared to many of its peers),[i] however most of Brazil's debt is in Brazilian Real, avoiding the foreign currency debt problems that a number of other countries have faced, while still attracting a high proportion of non-domestic investors.

Brazil has USD 0.8 trillion of debt maturing in/before 2030, with the majority (USD 0.7 trillion) maturing in/before 2025 - see Figure 3.

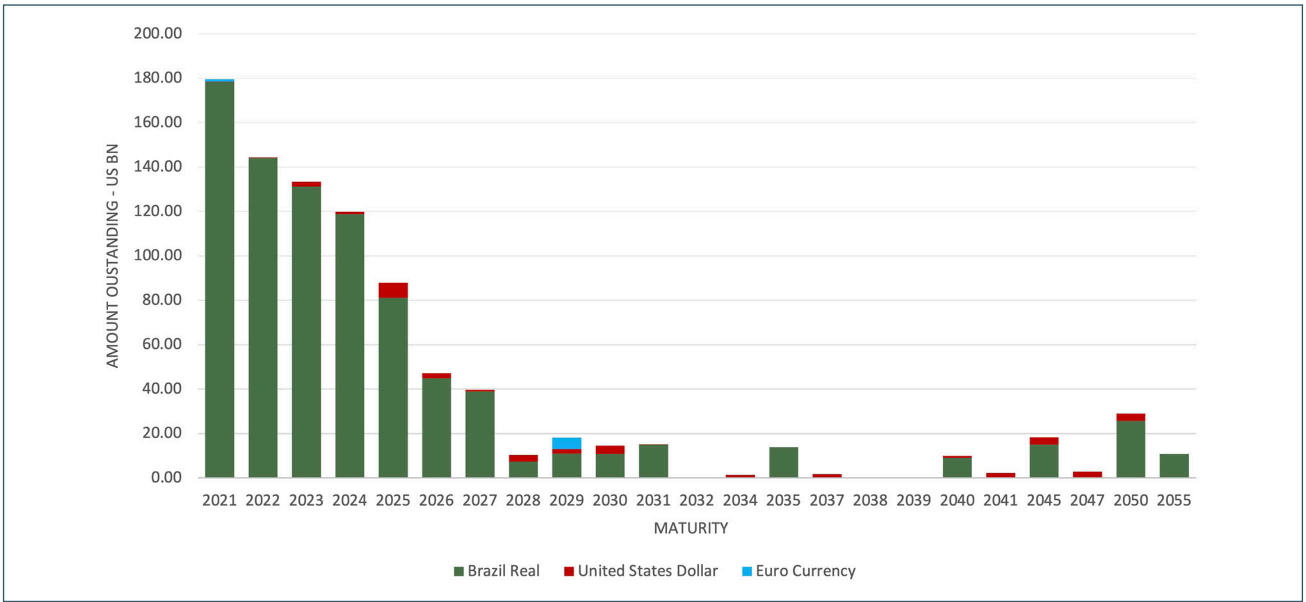



*Figure 3: Brazilian Sovereign Debt - Maturity Distribution by Currency. (Source: Bloomberg, Planet Tracker analysis)*

This creates an opportunity for Brazil to refinance a proportion of its debt falling due in/before 2025 at (potentially) cheaper rates by tapping the increasing appetite among international investors for bonds with specific ESG characteristics.

## The challenges

To date ESG-labelled issuance has been 'use of proceeds' bonds which bind the issuing government to ensure that the funds raised from investors are spent on specific 'green' projects.

Use of Proceeds bonds are not appropriate for all countries. Smaller countries in particular may face the challenge that the GSS[6] projects they wish to fund are too small to match the size of issue required by international investors to provide liquidity in the after-market (making a Use of Proceeds bond unattractively small from an investor perspective), or that they wish to fund a variety of different projects relating to their transition to a more sustainable future (making it too complex to structure in terms of Use of Proceeds, particularly where transition projects do not satisfy the criteria for a GSS bond in themselves).

[6] Green, Sustainable, or Social.

In the case of Brazil, the Financial Times reported that Brazil's constitution currently prevents Use of Proceeds green bonds from being issued since it restricts the government's ability to borrow for specific purposes[ii] (but the same article quoted Ricardo Salles, environment minister, as saying that green bonds were "something Brazil can do. We have all the conditions".)

Sustainability-Linked Bonds avoid the problems posed by Use of Proceeds bonds.

## The solution – Sustainability-Linked Sovereign Bond

Unlike GSS bonds, a Sustainability-Linked Bond (SLB) does not bind the issuer to use the proceeds from issuing the bond for a particular (green, social or sustainable) purpose, thus avoiding the challenges outlined above.

A Sustainability-Linked Bond is a debt instrument where the coupon and/or final repayment varies depending on whether the issuer achieves predefined Sustainability/ESG objectives.[iii] The issuer is committing explicitly in the bond documentation to future improvements in sustainability outcome(s) within a predefined timeline.

A number of companies have already issued SLBs,[7] but governments have not. We believe Brazil should consider this option (as part of its debt issuance programme) and that the structure would work for other countries as well.

## Performance bonds are not a new concept

The concept of Performance Bonds which underpins Sustainability-Linked Sovereign Bonds – linking bond cash flows to an external performance measure - is far from new. Countries have been issuing inflation-linked bonds (linking coupons and repayment to an inflation index) for many years – Brazil was one of the pioneers[8] and its inflation-linked bond market now ranks third behind the US and UK in terms of size.[iv]

In addition to inflation-linked bonds, in 2005 Michael Mainelli proposed 'Policy Performance Bonds'[v] linking coupons and/or repayment to specific government commitments (initially as an instrument to incentivize governments to tackle climate change[9]).

More recently, the Finance for Biodiversity Initiative built on this concept and proposed 'Nature Performance Bonds – offering the issuer reductions in coupon payments and principal adjustment in return for the achievement of nature-based outcomes'[vi] and the World Bank followed this in a blog recommending Sustainability-Linked Sovereign Bonds in February 2021.[vii]

Brazil has extensive experience of issuing inflation-linked (NTN-B[10]) bonds. At the end of March 2021, inflation-linked bonds constituted 26% of Brazil's federal public debt - see Figure 4.

[7] For example, H&M, discussed in a Planet Tracker blog https://planet-tracker.org/ethical-debt-is-the-new-bespoke-fashion/.

[8] Brazil's first inflation-linked bond was issued in 1964. (https://investorfunds.us.hsbc.com/resources/documents/articles/EMD/AMUS_Article_EM%20ILB_May19_FINALCopy.pdf).

[9] Interest payments would be linked to the actual greenhouse gas emissions of the issuing country against published targets.

[10] NTN-B bonds are linked to the National Index of Consumer Prices (IPCA) and replaced the NTN-C bonds which were linked to the IGP-N inflation index in 2003.

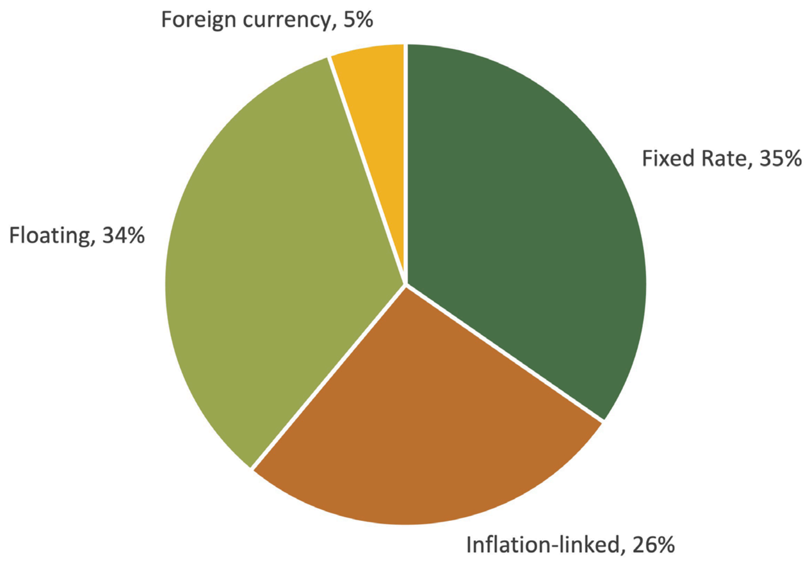



*Figure 4: Brazil's Federal Public Debt Mix at 31 March 2021. (Source: Brazilian National Treasury Secretariat)*

We believe the fact that such an extensive inflation-linked bond market has been supported for so long by Brazil's constitution and Treasury indicates that Brazil could issue a Sustainability-Linked Sovereign Bond (SLSB)[11], linking coupons and repayment to some form of nature-based benchmark[12].

However, although we regard Brazil's experience with inflation-linked bonds as potentially useful, it is by no means a prerequisite. In our view a Sustainability-Linked Sovereign Bond will work for a wide variety of countries.

# Structuring a Deforestation-Linked Sovereign Bond

We discuss below the key points that would need to be considered in structuring a Deforestation-Linked Sovereign Bond, but the essence is simple: coupon payments would be linked to the country's success or failure in reducing illegal deforestation - see Figure 1 on page 1.

## ICMA SLB Principles

The ICMA published principles for Sustainability Linked Bonds[viii] which provide a straightforward checklist of the points to be considered when structuring a DLSB:

- Selection of Sustainability Performance Targets (SPTs)
- Calibration of SPTs
- Bond characteristics
- Reporting
- Verification

[11] Terminology is not consistent but the World Bank used this term (as opposed to Nature Performance Bond) so we have followed their lead.

[12] The legal structure of an inflation-linked bond is likely to be different to an SLSB but the depth and longevity of the Brazilian inflation-linked market indicates that the Brazilian Treasury is used to the concept (and practice) of future coupon payments being based upon an index.

## Deforestation is an obvious SPT for Brazil

As discussed in our recent **report**, deforestation is the material environmental harm and systemic risk that Brazil is committed to resolving, so this would be an obvious focal point for an SLSB and one that satisfies the ICMA's SLB guidelines regarding Sustainability Performance Targets:

- relevant, core and material to the issuer's overall business and of high strategic significance to the issuer's current and/or future operations
- measurable or quantifiable on a consistent methodological basis
- externally verifiable
- able to be benchmarked, i.e. as much as possible using an external reference or definitions to facilitate the assessment of the SPT's level of ambition'

## Credible verification and reporting is essential

Since investors in an DLSB will be accepting the fact that bond cashflows will be varied by the issuing country under the terms of the DLSB, it is essential that there is a credible (transparent and regular) reporting and verification regime in place to establish the basis for performance against the Sustainability Performance Target.

The ICMA principles recommend that verification should be 'independent and external'.

It would be important for the issuing government and its advisers to work out what form of verification and reporting regime would be acceptable to investors.

In the case of Brazil, it already has an established satellite monitoring and reporting regime in the form of PRODES which provides the Brazilian government with internationally accepted deforestation data,[ix] so it is possible that investors would accept the PRODES data as a sound basis for calculating deforestation performance, but we would expect investors to require independent verification by an independent organization.

## Deforestation performance measure for coupons

The underlying measure for the calculating performance could simply be based on changes in the total area of the forest in question, providing an incentive towards reforestation as well as preventing deforestation.

A more complex version would include a value or quality assessment component in the performance measure as well (providing a more direct link between the bond cash flows and the natural capital value of the forest – for example, the Amazon in the case of Brazil).

The disadvantage of including a natural capital valuation component would be the challenges associated with deciding the value and ensuring the outputs were regarded as credible by investors. A 'forest quality' measure might be easier to get agreement on[13] and would achieve the objective of incentivizing the issuing government to focus on enhancing the state of the forest as well as simply preventing further deforestation, but on balance, we believe a simple focus on deforestation and forest cover is likely to provide the best starting point.

[13] This is probably an optimistic view – at present there is not a universally agreed or even commonly accepted measure of forest degradation.

# Structuring the DLSB coupons and repayment

It will be up to the issuing government to decide how to structure the DLSB in terms of its cash flows.

In theory the DLSB could be structured with a variable coupon and a variable capital repayment (similar to the structure used for an inflation-linked bond) but none of the corporate Sustainability-Linked Bonds issued to date have adopted this structure and we believe having a variable repayment is likely to result in the DLSB being excluded from bond market indices, so we believe a simple variable coupon structure with a fixed repayment is more likely to be successful.

## Variable coupon, fixed repayment

Bond coupons are usually paid on a 6-monthly basis and it would be reasonably simple to construct a deforestation benchmark running at 6-monthly intervals from the bond issue date so that a particular coupon could be calculated as higher or lower than the underlying interest payment based on the deforestation performance at that point.

However, corporate issuers of SLBs generally avoid frequent coupon adjustments and have a single step-up/step-down point in the bond's life (often around the half-way mark), so an alternative structure for a potential DLSB would follow this pattern and set a specific date when progress relating to deforestation would be measured – see Figure 5.

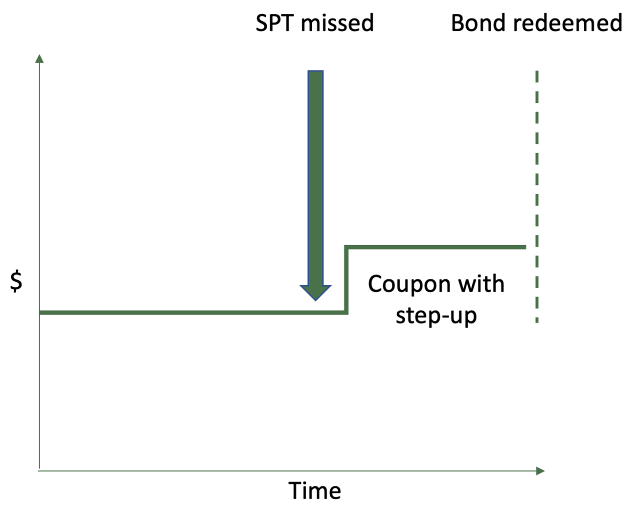



*Figure 5: illustration of the effect of a coupon step-up. (Source: Planet Tracker)*

In the context of a sovereign bond, the advantage of a coupon adjustment that is made several times over the bond's life is that it would reward or penalize the government of the day that was responsible for beating or missing the deforestation target. A coupon adjustment after (say) seven years in a 10-year bond's life with an election due in (say) year five, could tempt a government to ignore the deforestation target early in the bond's life, safe in the knowledge that any coupon adjustment consequences would only be felt after the next election when they might well have left office.

The challenge will be to decide how much higher or lower coupons should be. The details will need to be worked out by the issuing government and its advisers in consultation with potential investors, but the SLBs issued by companies in the domestic market might provide a useful reference point.

## Corporate SLB examples of coupon step-ups

Taking Brazil as an example, a number of Brazilian companies have issued Sustainability-Linked Bonds or loans providing a potential reference point for a Brazilian Deforestation-Linked Sovereign Bond - see Table 3 for examples.

*Table 3: Coupon Adjustments Agreed by Brazilian SLB issuers. (Source: companies)*

| Sustainability-Linked Bond issuer | Sector | Coupon adjustment |
|---|---|---|
| Iochpe-Maxion Austria GmbH | Autos | A one-time coupon step-up of 25bps[14] if the Sustainability Performance Target is not met in the agreed timeline |
| Klabin | Containers and Packaging | A coupon adjustment if Klabin's performance does not achieve the stated Sustainability Performance Targets: (i) 12.5 bps coupon step-up if KPI #1 (water consumption intensity) does not meet its stated KPI target (ii) 6.25 bps coupon step-up if KPI #2 (waste reuse) does not meet its stated KPI target (iii) 6.25 bps coupon step-up if KPI #3 (reintroduction and/or reinforcement of wild species into the ecosystem) does not meet its stated KPI target |
| Natura | Personal products | The penalty if both environmental performance indicators are not reached is an increase of 65 basis-points in the interest rate |
| Simpar | Financials | A one-time coupon step-up of 25bps if Simpar's performance does not achieve the stated Sustainability Performance Target. |
| Suzano[15] | Forestry, Paper and Wood | If Suzano does not reach its 2025 intermediary goal (SPT), to be measured by the average years ended 2024 and 2025, there will be a one-time step-up coupon adjustment of 25bps |

25bp has become quite a common coupon step-up but, as Table 3 shows, there have been several Brazilian examples where this was not the case.

We believe issuing countries like Brazil would need to consider a larger coupon step-change to provide a meaningful indicator to the market that their intentions were serious (although the publicity surrounding a coupon step-change being triggered is likely to be a bigger incentive than the cash cost).

## Who should receive 'penalty' payments?

A Deforestation-Linked Sovereign Bond could be structured very simply so that any coupon step-up ('penalty' for missing the SPT) was paid directly to bond investors. However, some Sustainability-Linked Bonds have been structured so that the extra coupon payments are paid into a separate fund which is then used for a related purpose[16].

[14] Basis points (25 x 0.01%) so the coupon rate will step-up by 0.25% (from, say, 3.00% to 3.25%).

[15] Suzano was highlighted as one of the largest SLB issues in 2020 raising USD 1.25 billion (Source: Environmental Finance Sustainable Bonds Insight 2021).

[16] LafargeHolcim's SLB financing framework requires 'A payment of up to 75bps of notional to a research institute or NGO, of international standing, active in the fields of climate research or climate change mitigation, or the LafargeHolcim Foundation for Sustainable Construction'.

It would be possible for Brazil to structure the bond so that the step-up component was paid into an independent fund dedicated to mitigating illegal deforestation (e.g. by providing extra resources towards monitoring and enforcement).

This would have the added benefit of building in a deforestation feedback element into the bond, increasing the potential for deforestation to be controlled (since a missed target would increase funding for efforts to reduce illegal deforestation in future).

This would be attractive to investors wanting an 'impact' investment opportunity[17]. But, other investors might not be attracted by such a complex structure (and the requirement to forego the extra cash flows that would otherwise provide a hedge against the negative effects of failing to meet the deforestation target).[18]

## A step-down structure might be more acceptable for the issuing country

Although coupon step-ups are by far the most common structure used by corporate issuers in their SLBs, there have been a few examples of step-down or two-way structures[19] and other issuers have included the possibility of such a structure in their SLB issuance framework, so could use it in future.

Politically, a coupon step-down is likely to be an easier sell within the issuing country since the government will save money if it meets its deforestation targets (and this could be an argument used to justify the extra investment required to achieve the reduction in deforestation, or at least to protect the Ministry of Environment, and related agencies, against further cuts).

## A potential compromise: two-way adjustment on an annual basis

A more complex approach (more akin to an inflation-linked bond) would be to structure the measurement and coupon adjustment process so that the SPT was remeasured every year and the coupon was adjusted up or down depending on whether the SPT was beaten or missed.

This would have the advantage of regular remeasurement referred to earlier combined with the potential for the government of the day to be rewarded for its success or penalized for its failure.

Politically, it might be easier for the issuing government to sell the concept of the potential increase in the coupon by explaining the potential savings from a decrease.

The obvious disadvantage is the extra complexity and cost associated with multiple measurement events.

## Investors are more likely to favour a step-up

The fact that so few corporate SLBs have been issued with step-down or two-way coupon structures suggests that investors are more likely to favour a step-up structure, at least for the first issue by a country.

From a marketing perspective, countries are more likely to persuade investors that the SPT is being taken seriously if there is a penalty associated with missing it, rather than a reward for beating it, but as noted previously, the real incentive is likely to be the impact on market sentiment and the country's international reputation if it beats or misses its SPT rather than any impact on its finances.

[17] Impact investors look for investment opportunities that will help to achieve the 'impact' set out in their investment policy (examples might include reducing child poverty, reducing deforestation, etc).

[18] If Brazil failed to meet its deforestation target, the value of its sovereign bonds might fall if such a failure led to a perception of increased risk. In such a case the coupon step-up would provide investors holding the DLSB with some protection.

[19] Korian, the European care provider, issued an 8-year 173 million Sustainability-Linked Euro Private Placement in July 2020 with a +/- 20bp coupon adjustment. In December 2020, Albioma, a European renewable energy producer, issued a 100 million 7 and 8-year Sustainability-Linked Euro Private Placement with a +/- 25bp coupon adjustment.

# What are the incentives for the issuing government?

There are a number of potential reasons why issuing a DLSB could be an attractive proposition for the issuing government even if, as is the case with Brazil, the deforestation trend is increasing not reducing and one could argue that the challenge relates to prevention rather than governance.

These incentives are discussed, using Brazil as a case study, below. Other countries might have different incentives.

## Protection against increasing market and policy pressures

As we have discussed in our recent **report**, Brazil faces the prospect of increasing market and policy pressures if it fails to prevent illegal deforestation including the move towards net zero portfolios, the increasing investor engagement regarding deforestation, the potential challenges for Brazilian businesses from supply chain due diligence legislation and Carbon Border Adjustment Mechanisms, the risk that ratings agencies will price in deforestation and the associated GhG emissions, and the impact deforestation is having on the Mercosur/EU trade deal.

Issuing a Deforestation-Linked Sovereign Bond would be a significant signal that Brazil was committed to tackle the deforestation issue (and confident of achieving a positive result) and would address these challenges head on.

The impact of these market and policy challenges will be felt by other countries, not just Brazil.

## The mechanisms required to achieve the target already exist

Brazil has the laws in place and the monitoring and enforcement mechanisms required to reduce (and ultimately eliminate) illegal deforestation. The effectiveness of these mechanisms was clearly demonstrated between 2004 and 2012 when Brazil reduced annual deforestation by 78%, suggesting that the key ingredient is political will. In effect a Deforestation-Linked Sovereign Bond would reward the Brazilian government for exercising its political muscles.

Other countries might need to do more work than Brazil to establish the required structure to support a deforestation Sustainability Performance Target.

## A step-down structure would offset the costs of acting against deforestation

If the DLSB was structured to include a coupon step-down, the costs to the Brazilian government of investing in deforestation monitoring and enforcement would be funded (at least to some extent) by reduced coupon payments (and there will be a strong incentive to protect these departments from future budget cuts since such cuts might result in coupons rising). However, as discussed previously, we believe investors are more likely to favour a step-up structure which would negate this potential incentive.

## Protecting its natural capital assets will increase Brazil’s sovereign health

As discussed in our recent report, Brazil has a lot to gain from protecting and enhancing its natural capital assets (including, for example, exploiting the growing demand for nature-based climate solutions that the Amazon and Cerrado forests could offer) so a DLSB would align with these interests. Other countries with extensive forests are likely to have similar incentives.

# Advantages of a Deforestation-Linked Sovereign Bond

In addition to the obvious benefit of incentivising the issuing country to reduce deforestation, there are a number of other benefits that we see arising from issuing a Deforestation-Linked Sovereign Bond.

1. The government will be financially incentivised to ensure subsidies and regulations encourage businesses and citizens to support the path to zero deforestation (and to restructure any subsidies and regulations that work against this policy).
2. Citizens and businesses of the issuing country will have an indirect stake in the success of the deforestation policy since higher coupon payments resulting from underperformance will ultimately come from tax revenues.
3. Investors will have an attractive investment with sustainable characteristics and cash flows that offers some diversification benefits compared to more traditional government bonds.
4. The DLSB will provide evidence of the issuing country's clear intention to tackle illegal deforestation, increasing the credibility of any deforestation commitments it makes as part of any deforestation-related international aid package.

More broadly, the process of setting up the required framework to support the issuance of a DLSB will enable the issuing country to begin to establish an ESG-labelled sovereign bond benchmark curve thereby facilitating ESG-labelled bond and loan issues by domestic companies. This would help to further accelerate growth in the ESG-labelled non-government debt market, encouraging significant investments into the economy[20].

# A strong governance framework and political will are essential for success

Despite all the potential advantages of a Deforestation-Linked Sovereign Bond, investors will be unlikely to buy into it unless they are convinced that the government is fully committed to the deforestation target set out in the terms of the bond.

Failure to establish a strong governance structure to support a DLSB would expose investors to the risk that the issuing government could use the launch of a DLSB as a form of greenwashing[21].

Although we would expect the bond terms themselves to include the deforestation SPT, that in itself will probably not be enough to convince investors. They would need to see clear steps being taken by the government to demonstrate that this ambition had its full political support (and that this could be expected to persist into the future, unimpeded by future elections, and with full support across the political spectrum).

[20] As an example, in 2020, the Climate Bonds Initiative in partnership with the Brazil Agriculture Subcommittee (a technical working group under the Brazil Green Finance Initiative), published 'Unlocking Brazil's Green Investment Potential for Agriculture' which identified a projects and assets eligible for green financing worth USD 163 billion to the end of 2030.

[21] i.e., use the positive publicity associated with issuing a DLSB to persuade investors and the wider public that strong steps were being taken to eliminate illegal deforestation when in reality the bond's undemanding SPTs and the weak supporting governance regime did not justify that conclusion.

Establishing a governance structure that gives investors confidence that a subsequent government will not simply ignore the terms of the DLSB (or find more subtle ways to default on its obligations) will not be easy.

One potential solution would be linking the bond to some form of aid package. This would open the way to developing a bond governance structure that included foreign donor governments and allowed for independent oversight with respect to the issuing country's performance against the SPT.

Linking the DLSB to an aid package would also create a bigger incentive for the issuing country to meet or beat the SPT than could be achieved by the coupon step-up alone.

# A package deal (aid plus a DLSB)

Brazil is already discussing the possibility of receiving international aid (e.g., from the US) to support its efforts to limit deforestation and there is an opportunity to restart donations from Norway and Germany into the existing Amazon Fund[22]. Any such aid package would probably be contingent on Brazil committing to specific deforestation targets.

Issuing a DLSB in parallel with such an aid agreement would be a way for Brazil to demonstrate its commitment since a DLSB would provide a strong market-based indicator of its success (or failure) to limit deforestation going forward.

If a DLSB were issued as a component of an aid package, it would also be possible to incorporate an external fund into the payment mechanism so that a coupon step-down would be funded by the external (aid) fund and not by sovereign bond investors. This would avoid the need to persuade investors to be willing to see their coupons reduced and provide the issuing government with an extra financial benefit from undertaking commitments that were linked to the aid package.

Since such a structure would remove the need for bond investors to consider a coupon step-down in their assessment, it would probably make the DLSB easier to market to investors while still preserving the incentive structure for the issuing government.

Similarly, it would be possible to route the payment of any step-up into the external (aid) fund rather than paying it to investors.

From an investor perspective this would effectively remove the performance aspect of the bond in cash flow terms (although the publicity aspect would still be there) which might make it appeal to a wider range of investors (potentially reducing the yield required from the issuing country and increasing liquidity in the after-market).

From the issuing country's perspective allowing for a step-up might be easier to sell in terms of domestic politics because the extra cash would be paid into the aid fund and then recycled to the deforestation objective, ultimately benefitting taxpayers/voters (rather than foreign investors).

[22] Amazon Fund was set up in 2008 to channel international aid into reducing deforestation. Since 2008, Norway has contributed more than USD1.2 billion, with USD68 million from Germany. Both countries suspended donations in August 2019 after the Brazilian government changed the Fund's governance structure.

## Conclusion

We believe a **Deforestation-Linked Sovereign Bond** provides a simple structure to incentivize countries to tackle deforestation and an attractive investment proposition for sovereign bond investors.

## Investor call to action

**Encourage the issue of DLSBs**. Investors should encourage Brazil and other countries with valuable forests to consider issuing a DLSB as a way to demonstrate the seriousness of their intentions to achieve the net zero deforestation required to preserve and enhance the natural capital base underpinning their economies

**Deforestation-free portfolios**. Investors should commit to achieving deforestation free portfolios within a short timeframe (with a focus on illegal as a starting point and net zero deforestation as an end goal).

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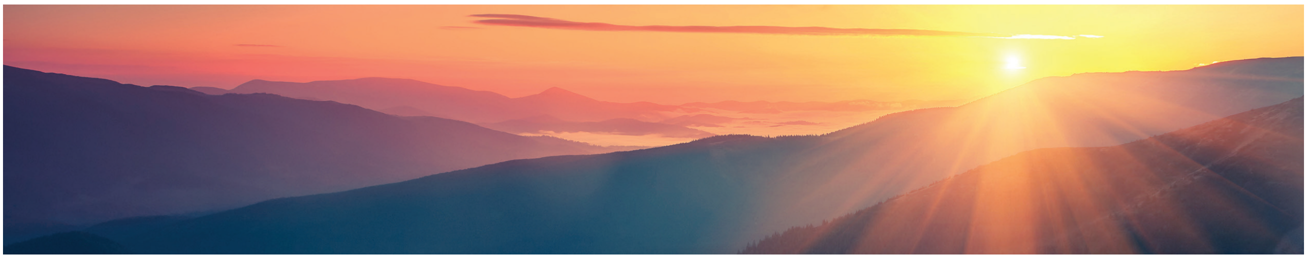

## ABOUT PLANET TRACKER

Planet Tracker is a non-profit financial think tank aligning capital markets with planetary boundaries. It was created primarily for the investor community to analyse the risk of market failure related to environmental limits which, other than climate change, are often not aligned with investor capital. Planet Tracker generates breakthrough analytics to redefine how financial and environmental data interact with the aim of changing the practices of financial decision makers to help avoid both environmental and financial failure.

## ABOUT THE GRANTHAM RESEARCH INSTITUTE

The Grantham Research Institute on Climate Change and the Environment was established in 2008 at the London School of Economics and Political Science. The Institute brings together international expertise on economics, as well as finance, geography, the environment, international development and political economy to establish a world-leading centre for policy-relevant research, teaching and training in climate change and the environment. It is funded by the Grantham Foundation for the Protection of the Environment, which also funds the Grantham Institute on Climate Change and the Environment at Imperial College London. www.lse.ac.uk/grantham

## PLANET TRACKER SOVEREIGN BONDS PROGRAMME

The Planet Tracker Sovereign Bonds programme provides insights and thought leadership for sovereign bond investors and others who want to explore the relationship between sovereign bonds and sovereign health – the intersection of natural capital and sovereign bond risk. We evaluate sovereign health through the combined assessment of the state of a country's natural capital (including environmental risks and potential rewards), its macroeconomic situation, and the interaction between the two (including the human capital dimension). This is particularly important for countries that are heavily dependent upon nature for their economic and social wellbeing (often indicated by a high level of soft commodity exports). Our current focus is on key Latin American countries, including Brazil and Argentina but our methodology is universally applicable. Our research focuses on how changes in environmental health, such as soil degradation, deforestation and variability in extreme weather impact the underlying public treasury balances of these countries and their subsequent ability to service sovereign bond liabilities. We also explore potential funding solutions designed to enhance a country's natural capital and increase its resilience to climate and nature-based risks.

The Planet Tracker Sovereign Bonds Programme is part of our Food and Land Use Tracker Programme.

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