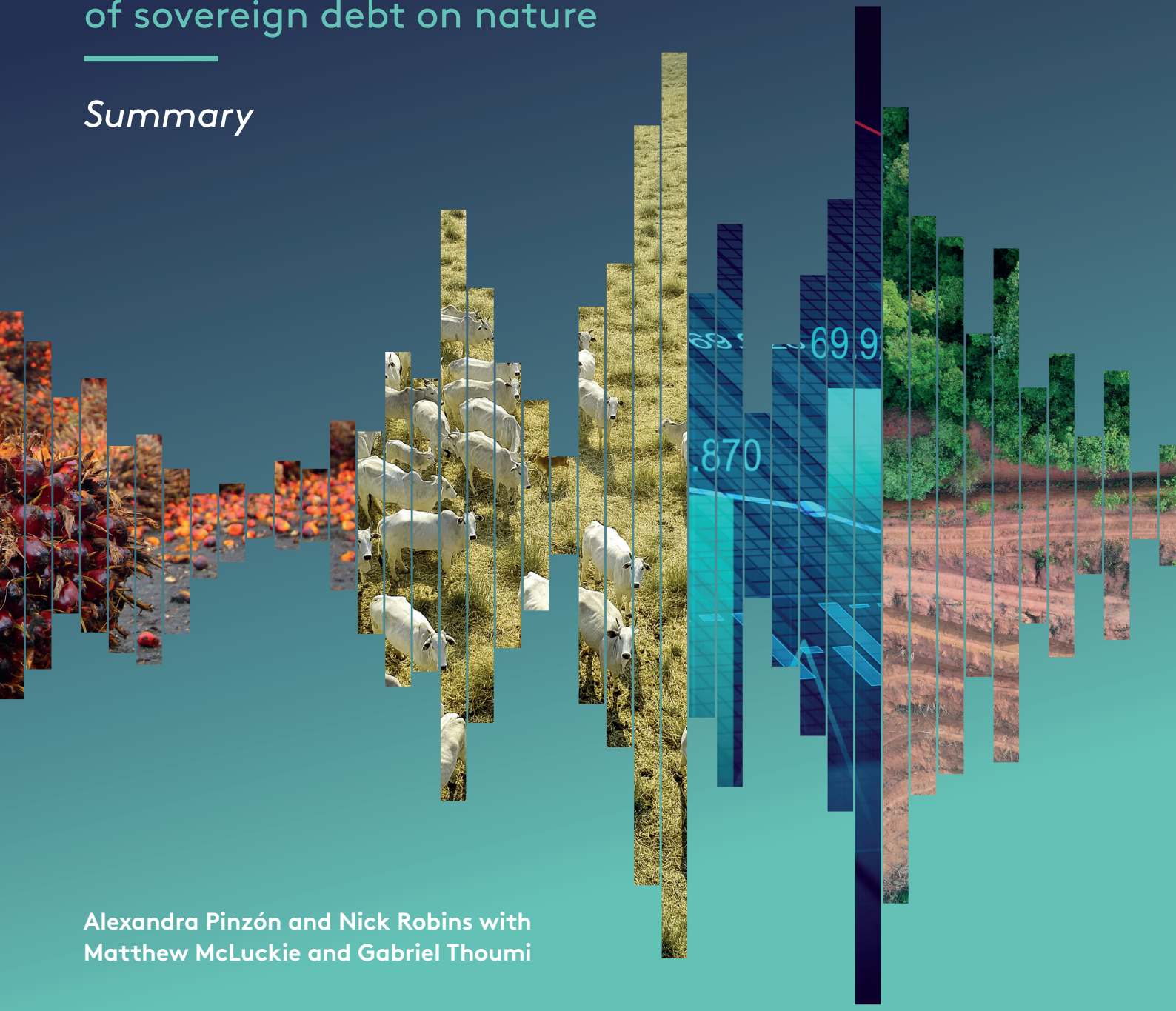
The sovereign transition to sustainability

Understanding the dependence of sovereign debt on nature

Summary



Alexandra Pinzón and Nick Robins with Matthew McLuckie and Gabriel Thoumi

LSE The London School of Economics and Political Science

Grantham Research Institute on Climate Change and the Environment

Planet Tracker

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 – Climate Change and the Environment at Imperial College London. www.lse.ac.uk/grantham/

Planet Tracker is a non-profit financial think tank aligning capital markets with planetary limits. It was launched in 2018 by the Investor Watch Group whose founders, Mark Campanale and Nick Robins, created the Carbon Tracker Initiative. Planet Tracker was created to investigate market failure related to ecological limits. This investigation is for the investor community where, in contrast to climate change, other ecological limits are poorly understood and even more poorly communicated, and not aligned with investor capital. https://planet-tracker.org/

About the authors
Alexandra Pinzón is a policy fellow in conservation finance at the Grantham Research Institute.
Nick Robins is professor in practice for sustainable finance at the Grantham Research Institute.
Matthew McLuckie is director of research at Planet Tracker.
Gabriel Thoumi is director of financial markets at Planet Tracker.

Acknowledgements: This report benefited from the comments of Giles Atkinson, Chris Baldock, Archie Cage, Maria Cantore, José A. Clavijo Michelangeli, Patrice Cochelin, Ben Combes, Pablo Cortinez, Rupert Edwards, Sam Fankhauser, Patrick Faul, Greg Fishbein, Felipe Gordillo, Kathy Hochstetler, Mike Hugman, Dalia A. Kader, Justin Kew, Olha Krushelnytska, Raj Kundra, Juliana Lopes, Claudio Lutzky, Fergus McCormick, Mariana Micozzi, John Palmisano, Joseph Potvin, Samantha Power, Dirk Price, Tiago Reis, Diego Sueiras, Nitin Sukh, Lauren van Biljon, Peeyush Varshney, John Waugh, Vikram Widge, Heather Wright and Ming Yang.

Editing and production management by **Georgina Kyriacou**.

This report summary was first published in February 2020 by the Grantham Research Institute on Climate Change and the Environment and Planet Tracker.

Declaration of conflict of interest: The authors declare: funding from the Gordon and Betty Moore Foundation through the Finance Hub for the submitted work; Nick Robins had financial support from the Grantham Foundation for the submitted work; Matthew McLuckie and Gabriel Thoumi had financial support from the Gordon and Betty Moore Foundation for the submitted work; no other relationships or activities that could appear to have influenced the submitted work.

This report is intended to inform decision-makers in the public, private and third sectors. It has been reviewed by internal and external referees before publication. The views expressed in this report represent those of the authors and do not necessarily represent those of the host institutions or funders.

This report is funded by the Gordon and Betty Moore Foundation through the Finance Hub, which was created to advance sustainable finance.

Suggested citation: Pinzón A and Robins N with McLuckie M and Thoumi G (2020) The sovereign transition to sustainability: Understanding the dependence of sovereign debt on nature – Summary. London: Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science, and Planet Tracker.

The sovereign transition to sustainability: summary

KEY MESSAGES

- In the 2020s sovereign bonds will face the strategic challenge of achieving alignment with the Sustainable Development Goals.
- Agriculture and the soft commodity trade are heavily linked to natural capital, as drivers of depletion and as processes reliant on a secure stream of ecosystem services.
- The value of sovereign bonds relies in part on the management of natural capital by the countries concerned. However, this dependency is still largely ignored or mispriced in sovereign bond markets.
- Pressures to achieve alignment between sovereign bonds and environmental sustainability are set to intensify in the decade ahead, with increasing focus on sovereign bonds as an asset class which connects macro-economic performance and capital markets.
- To enable analysts to integrate the value of natural capital into the issuance, analysis and stewardship of sovereign bonds, we have developed a new research framework. This identifies Argentina and Brazil as the G20 countries most dependent on natural capital for their exports.
- We estimate that 28 per cent of Argentina's sovereign bonds and 34 per cent of Brazil's sovereign bonds will be exposed to an anticipated tightening of climate and anti-deforestation policy in the 2020s, while 44 per cent and 22 per cent of their sovereign bonds, respectively, are exposed to changes in policy after 2030.
- Sovereign bond issuers face a choice: either following a High Road scenario where countries actively protect and enhance the benefits of natural capital and reinforce the environmental fundamentals of sovereign bonds, or a Low Road scenario where business-as-usual undermines flows of ecosystem services, increases vulnerability to natural disasters and intensifies market risks.
- For sovereign bonds to develop the required resilience in the disruptive decade that lies ahead, decisive action is needed from issuers, investors, credit rating agencies and international institutions, as well as researchers and civil society, to ensure the full value of nature is incorporated.

The 2020s: a decisive decade for sovereign bonds and sustainability

Sovereign bonds are one of the largest asset classes with an outstanding global value of US$66 trillion. They are also one of the most systemic asset classes: sovereign bonds capture a range of macro-economic factors, influence broader capital market pricing and system stability and are core holdings for financial institutions. Institutional investors and credit rating agencies are deepening their focus on the link between sovereign bond performance and environmental, social and governance (ESG) criteria. Academic literature is starting to highlight the key relationships between ESG considerations, climate policy and sovereign debt, and the market for sovereign *green* bonds is growing.

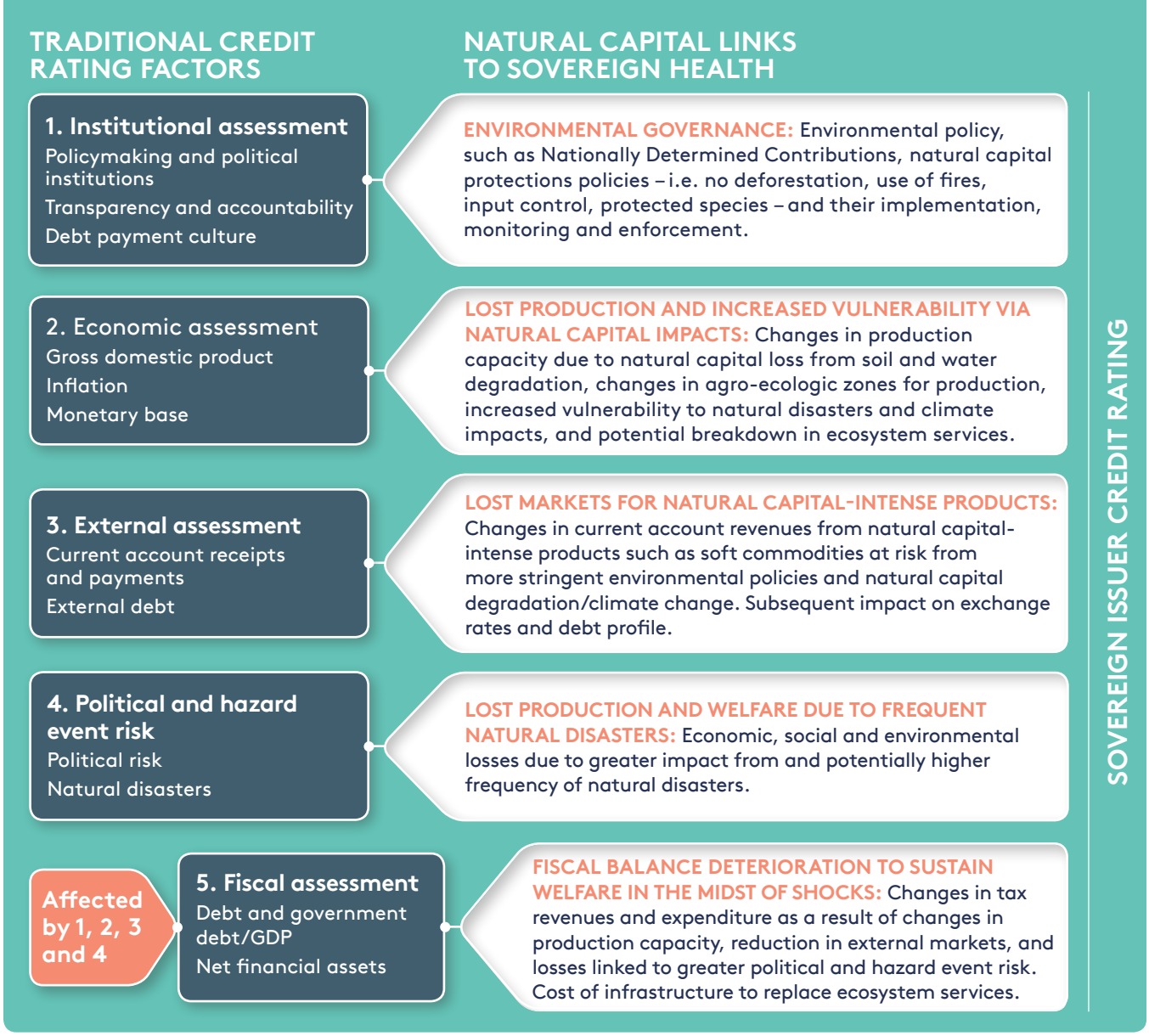
The consideration of ESG factors in sovereign bonds is set to experience a step-change in the coming decade. 2030 is the deadline for the achievement of the Sustainable Development Goals (SDGs), as well as for cutting global greenhouse gas emissions by 45 per cent from 2010 levels to meet the Paris Agreement temperature target. While private sector action is vital for reducing natural capital loss, companies and their investors alone cannot address these risks without active government support.

Governments will play a critical role in the transition to a sustainable economy, by setting whole-economy policy frameworks, and by deploying public finance, which is where the issuance of public debt through sovereign bonds becomes crucial. The task ahead is for countries to achieve 'sovereign health', which we define as their capacity to issue debt and repay it in a manner consistent with achieving the SDGs. This means recognising and valuing the fundamental dependencies of sovereign bonds on natural capital, which are currently

Sovereign health: *The capacity of countries to issue debt and repay it in a manner consistent with achieving the Sustainable Development Goals*

Natural capital: *The stock of renewable and non-renewable assets from which humans derive benefits through ecosystem services*

Figure 1. The natural capital and sovereign health model



Source: Authors

ignored and mispriced, thereby storing up instabilities in the future.

Focusing on the linkages between sovereign bonds and ecosystem services from land

To better understand the strategic case for the structural incorporation of natural capital into the issuance, assessment and stewardship of sovereign bonds, we focus on a hitherto ignored aspect: the importance for sovereign bonds of reliable flows of ecosystem services from land.

In the past, countries with abundant natural capital have often increased agricultural production at the expense of environmental quality (for example, through deforestation). This practice risks damaging the flow of vital ecosystem services such as clean water and flood regulation, increasing the vulnerability to climate risks and raising the likelihood of asset-stranding as a transition is made towards a sustainable economy. For sovereign bonds, the crystallisation of these risks could lead to higher borrowing costs, impairments in credit quality and reductions in their access to finance.

We expect the interconnectedness of the nature conservation and climate change agendas to gain increasing traction among sovereign bond investors. The investor-led Inevitable Policy Response (IPR) initiative, for example, forecasts an abrupt intensification of climate policies from the early 2020s onwards, and a range of new policies,

including effective carbon markets that incentivise ambitious policies that end deforestation by 2030.

Assessing natural capital and sovereign health linked to soft commodities in the G20

For sovereign bonds, the task is to understand how natural capital factors can be incorporated into core analytical models. We have done this by building on traditional credit rating frameworks used for evaluating sovereign bonds to identify the chain of impact between natural capital and five key types of factor: institutional, economic, external, political/hazard event risk and fiscal. The framework is set out in Figure 1, highlighting the potentially material natural capital elements.

We used this framework to assess the natural capital performance of G20 countries, focusing particularly on land and climate change. From this, we identify Argentina and Brazil as the two G20 countries most dependent on natural capital for their exports (see Table 1 for summary). It is estimated that between 2005 and 2013 cattle ranching drove 72 per cent and soy production 10 per cent of deforestation in Argentina; for Brazil cattle ranching drove 46 per cent and soy 33 per cent of deforestation.

Table 1. Sovereign health and natural capital assessment for Argentina and Brazil

	ARGENTINA	BRAZIL
1. Institutional assessment	**Environmental governance:** Yale Environmental Performance Index ranking of 74 out of 180, Climate Action Tracker defines NDC highly insufficient, native forest loss 3 million-plus hectares from 2007–17, with 24% deforestation in high and medium conservation value forest. Deforestation linked to cattle and soy.	**Environmental governance:** Environmental Performance Index ranking of 69 out of 180, Climate Action Tracker defines NDC as insufficient, Amazon deforestation of around 9 million hectares from 2007–18, Cerrado deforestation of 12 million-plus hectares. Deforestation linked to cattle and soy. Forest Code developed, full implementation needed.
2. Economic assessment	**Lost production via natural capital impacts:** 0.1% annual soybean production loss associated with soil degradation-induced yield reductions, equivalent to approx. US$13.7 million. Significantly higher at full agricultural level.	**Lost production via natural capital impacts:** Literature predicts a potential 33% reduction in soybean yield by 2050 and a potential 6% reduction in Mato Grosso's soybean production under ongoing deforestation scenarios. Between 0.06% and 0.1% of soy production value at risk from soil degradation.
3. External assessment	**Lost markets for natural-capital-intense products:** 4.8% of Argentina's soy exports and 0.18% of beef exports could be at risk from more stringent deforestation policy with a potential global market loss under deforestation bans.	**Lost markets for natural-capital-intense products:** Around 9% of Brazilian soy exports (by value) are at risk from the impacts of deforestation or other natural capital conversion.
4. Hazard event risk	**Lost production and welfare impacts due to frequent natural disasters:** US$3.9 billion harvest loss due to drought in 2017–18 season. Floods with a loss of US$1.7 billion in 2017 and US$2 billion in 2019. Drought in 2018 caused a reduction of 0.85% GDP.	**Lost production and welfare impacts due to frequent natural disasters:** 20% of gross agricultural production value under long-term droughts in the North East. Reduction in yields after floods. Losses of US$9 billion/year due to natural disasters.
5. Fiscal assessment	**Fiscal balance deterioration to sustain welfare in the midst of shocks:** US$1.7 billion government revenue estimated at risk under zero-deforestation international trade. US$1.7 billion in tax revenue lost due to 2018 drought.	**Fiscal balance deterioration to sustain welfare in the midst of shocks:** Agricultural production loss brings government revenues equivalent to 18% of production value, which can be lost proportionally with reduced production. Reduction of 33% in soybean yield in Mato Grosso (in a high deforestation scenario) could cause a loss equivalent to 0.1% of federal tax receipts.

Note: NDC = nationally determined contribution [to the Paris Agreement].
Source: Authors

As soy production follows and displaces cattle ranching, their related natural capital losses go hand in hand.

Ongoing natural capital depletion will bring production risks for these two countries. Deforestation and current management systems are expected to cause reductions in agricultural yield via changes in rainfall driven by both local land use change and global climate change, degradation of soil quality and fertility, reductions in biodiversity and increased exposure to natural disasters. These risks have economic and fiscal impacts that will affect the countries' risk profiles, cost of capital and access to international commodity and financial markets.

Preventing and reversing natural capital loss driven by the production of soft commodities (agricultural, forestry and fishery products) will benefit sovereign bond issuers through two channels: first, by maintaining and enhancing the flow of ecosystem services such as soil fertility, clean water and flood regulation, which sustain internal production capacity while increasing ecosystem resilience; and second, by positioning sovereign bond issuers to benefit from anticipated changes in international policy aiming to preserve natural capital. Both channels will improve the economic performance, credit profile and debt-paying capacity of these countries.

Countries dependent on natural capital face a strategic choice

Sovereign bond issuers dependent on natural capital, such as Argentina and Brazil, face two distinct choices:

1. *The first option is a 'High Road' scenario, where countries actively protect and enhance the benefits that natural capital brings to their economies*. This will underpin the long-term value of their sovereign bonds, building resilience against both the physical impacts of climate change and disruptive changes in policy and market preferences. Ultimately, such a transition will also secure long-term access to the finance these countries require to pursue their sustainable development goals.
2. *The second option is a 'Low Road' scenario, where a continuation with current practices undermines flows of ecosystem services, increases vulnerability to natural disasters and intensifies market risks*. Natural-capital-dependent countries that take this path would face reduced access to export markets that scrutinise environmental performance in terms of consumer preferences and trade policy. They could also miss out on significant opportunities from the shift to a sustainable global economy in terms of the prospect of international payments via carbon markets. These risks will be increasingly evaluated by sovereign bond investors and incorporated into pricing.

Recommendations for decisive action and next steps

This is a first framework for understanding the links between sovereign bonds and natural capital, focusing on the ecosystem services that support major soft commodity producers. Considerable further work is needed within affected countries and internationally. To realise the potential of the High Road scenario for sovereign bonds, the following key players need to take decisive action:

Governments/sovereign issuers

- *Governments should strengthen their institutional framework to align it with the management and regeneration of natural capital*. Policies should be accompanied by consistent monitoring and enforcement, as well as sufficient fiscal support.
- *Governments should issue green sovereign bonds that raise funds for investment in natural capital that endures over the long term*. There is currently unmet domestic and international investor demand for well-designed green sovereign bonds.

Investors

- *Investors should strengthen their analytical framework to better identify the relationships between sovereign issuers' natural capital and their future debt-paying capacity*. In particular, investors should recognise instances where incentives for economic performance today are jeopardising their future sovereign health.
- *Investors should enhance their stewardship role with regard to sovereign bonds in their portfolios, particularly those issued by high natural-capital-stock countries*. Engagement with the issuers of sovereign bonds on natural capital performance can help to signal the materiality of natural capital factors and identify the key data points requiring disclosure. In contrast to corporates, there is currently no consistent framework for sovereign issuers to report their climate or wider natural capital positioning or performance.

Credit rating agencies

- *Credit rating agencies should explicitly incorporate the links between the health of natural capital and the outlook for*

sovereign credit ratings. Incorporation of natural capital factors is of particular relevance given the increasing role that environmental sustainability will play in economic development, exports and fiscal performance.

International financial institutions and coalitions

- *Multilateral development banks (MDBs) should incorporate natural capital factors in their work, building on experience with the integration of climate change*. MDBs can be an important source of both finance and strategic expertise for natural-capital-dependent economies. They can provide finance for country-driven action to invest in natural capital, as well as technical assistance in the integration of natural capital factors in government budgeting and sovereign debt issuance.
- *International institutions charged with overseeing the stability and functioning of the financial system should broaden their scope to include natural capital factors*. The International Monetary Fund and Financial Stability Board have started work to evaluate the implications of climate change for their operations; this could be extended to the wider issues of biodiversity and natural capital. Coalitions such as the Network for Greening the Financial System could also explore the role of central banks and supervisors in incorporating natural capital in sovereign bond risk analysis, not least in their own portfolios.

Researchers

- *Researchers in government agencies, universities and civil society can build on the findings presented here to deepen the understanding of the dynamics between sovereign bonds and nature*. Within the rich agenda for future research there is a need to conduct analysis in other countries and examine other dimensions of the links between natural capital and sovereign bonds.

The transition to sustainability is the strategic challenge sovereign bonds face in the 2020s. Overcoming this challenge requires that the financial system recognises the fundamental economic dependencies on nature, which are currently ignored and mispriced, storing up instabilities for the future.

This is a summary of a report that examines the case for the structural inclusion of natural capital into the issuance, assessment and stewardship of sovereign bonds, with a particular focus on Argentina and Brazil. The authors look at a hitherto overlooked aspect: the importance for sovereign bonds of reliable flows of ecosystem services from land. How successfully the world transitions to a sustainable economy will impact on countries that rely on land-based natural capital for their economy.

The report is the first in a series that will aim to understand the relationship between natural capital and the future prospects for sovereign bonds and it is anticipated that it will encourage stakeholders in the sovereign bond market to analyse further alternatives to assess and incorporate natural capital into their decision-making.

Download the full report at: www.lse.ac.uk/GranthamInstitute/publications

Published in February 2020 by:

Grantham Research Institute on Climate Change and the Environment
London School of Economics
and Political Science
Houghton Street
London WC2A 2AE
United Kingdom

www.lse.ac.uk/GranthamInstitute

Planet Tracker
2nd Floor Studios
40 Conduit Street
London W1S 2YQ
United Kingdom

https://planet-tracker.org/

Printed on 100% recycled paper