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# Green Bonds for Climate Resilience

State of Play  
and Roadmap  
to Scale

Executive Summary

This report was produced under the guidance of Professor Patrick Verkooijen, CEO of the Global Center on Adaptation

This report was prepared by the Climate Bonds Initiative for the Global Center on Adaptation, in cooperation with the EBRD.



The Climate Bonds Initiative is an investor-focused, not-for-profit organisation working to mobilise debt capital markets for climate change solutions, to accelerate a global transition to a low-carbon and climate-resilient economy.



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This publication has been produced with the assistance of the EBRD. The contents of this publication are the sole responsibility of the Global Center on Adaptation and the Climate Bonds Initiative and do not necessarily reflect the views of the EBRD.

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The authors wish to thank the Steering Group members Craig Davies from EBRD, and Felipe Larrain from GCA and the Climate Resilience Bonds Expert Group Members: Isabelle Laurent (EBRD), Stephanie Simon and Keith Werner (AFDB), Steve Hammer and Denise Odaro (World Bank), Ahmed Al Qabany (IsDB), Peter Odhengo (National Treasury, Kenya), Arindom Datta (Rabobank India), Andres Perez (Ministry of Finance, Chile), Abyd Karmali (Bank of America), Carlos Sanchez and John Firth (WTW), Alexandre Chavarot (Climate Finance 2050), Paul Munday (S&P Global Ratings), Daisy Streatfield (IIGCC), Virginie Fayolle (UNEP), Chiara Trabacchi and Alexander Vasa (IADB), Michael Hugman (CIFF), Nambi Appadurai (WRI). We would also like to thank colleagues at GCA that reviewed and supported this work including Sara Ahmed, Seyni Nafo, Jaehyang So, Fleur Wouterse, Jamal Saghir.

# EXECUTIVE SUMMARY

## INTRODUCTION

This paper aims to deepen current understanding of the state of play of green bonds that are financing climate resilience-related assets, projects, and activities (hereafter referred to as Green Bonds for Climate Resilience). The report contains an overview of the global state of play of green bonds with resilience-related use of proceeds, including highlights from select regions<sup>1</sup>. The barriers for issuing resilience-related green bonds in four case study countries<sup>2</sup> are identified and recommendations on how to address them are proposed. An analytical tool, the Green Bonds for Climate Resilience Capacity Assessment Framework, has been developed to inform this analysis and can in turn be used by public and corporate issuers to assess their internal capacity and external enablers to issue Green Bonds for Climate Resilience. Based on the analysis and findings, a roadmap to scale-up this promising tool is presented.

### Box 1: Definitions

**Climate resilience:** This document uses the definition of climate resilience in the context of investment as set out in the Climate Bonds Initiative's Climate Resilience Principles (CRPs), namely: resilience investments improve the ability of assets and systems to persist, adapt and/or transform in a timely, efficient, and fair manner that reduces risk, avoids maladaptation, unlocks development and creates benefits, including for the public good, against the increasing prevalence and severity of climate-related stresses and shocks. Note that in the paper resilience is at times used as shorthand for climate resilience.



### GREEN BONDS FOR CLIMATE RESILIENCE

This paper uses the term 'Green Bonds for Climate Resilience' as shorthand for a green bond in which some portion (or all) of its proceeds is allocated to investments that support climate adaptation and increase resilience to physical climate risks. A Green Bond for Climate Resilience enjoys the same benefits as conventional green bonds (i.e., those focused on low-carbon investments). Notably, the benefits of green bonds include:

- providing issuers access to low-cost capital to finance their investment pipelines
- broadening of the investor base, as demand for green bonds far outstrips supply
- well-suited to large-scale projects that require capital investment ahead of revenues
- helping to unlock discounted finance through blended finance facilities and funds
- bringing visibility and recognition to resilience features within the bonds
- Positive impact on internal processes that enhance risk management and strengthen internal relationships and commitment to sustainability.

## THE CLIMATE FINANCE EMERGENCY

**Physical climate risks are rising and climate shocks have become more frequent and severe.** Even if emission-reduction efforts succeed and the world meets the goal of holding average temperature increases to well below 2°C and limited to 1.5°C, there are some changes already locked into planetary systems that will have unavoidable consequences. In the coming decades, climate shocks are set to become the norm. Preparing for these shocks requires the deployment of trillions of dollars from a variety of different sources of finance and presents an enormous investment opportunity.

**There is an urgent need to increase finance for climate adaptation and resilience.** Despite international recognition that both mitigation and adaptation efforts are essential, adaptation funding remains a far smaller portion of total climate finance. UNEP estimates that by 2030, adaptation and resilience (A&R) needs could reach USD300bn per year in developing countries, while the Climate Policy Initiative found that A&R finance flows measured in 2018 reached only USD30bn, of which only USD500mn was from private sources.

Global communities cannot afford to wait decades for A&R investments. For this reason, in recent years, António Guterres, Secretary-General of the United Nations, has been calling all nations and development finance institutions to urgently raise A&R finance to 50% of total climate finance, while also mainstreaming A&R into all financial decision making, and improving access for the most vulnerable.

**Economic and social disruptions caused by COVID-19 have severely impacted EMs, whose real gross domestic product (GDP) is projected to be 6 percent lower in 2022 (World Bank, 2021).** These disruptions are expected to reverse two decades of progress on poverty reduction worldwide, with 8 out of 10 of the “new poor” living in middle-income countries<sup>3</sup>. Significant efforts to recover from the pandemic will be needed, particularly in Emerging Markets (EMs); actions taken now will be critical to determining the course of the recovery and the pathway toward a more climate-resilient, sustainable future.





### AN OPPORTUNITY FOR A RESILIENT RECOVERY

**The green bond market can be an effective tool for a resilient recovery.** USD100tn is currently outstanding in global fixed income markets. The surge of green bonds has been effective (particularly for investment grade issuers) in raising finance for infrastructure projects that deliver positive environmental impact. Since the first labelled green bond in 2007 by the European Investment Bank (EIB), USD1.5tn of labelled green bonds have been issued worldwide from a diverse range of issuers, spearheaded by supnationals and followed by sovereigns, municipalities, national development banks, financial institutions and corporates. Green bonds are highly attractive to investors looking to fulfil their growing green mandates, enabling issuers to widen their investor base and in some cases to attract cheaper financing due to strong demand for these bonds.

**Investor demand for thematic bonds has grown as a result of the pandemic.** Since the onset of the pandemic, investor interest in social bonds, a derivative of the green bonds “use of proceeds” format, have soared and similar COVID-19 bonds have emerged as a new way to tap capital markets to finance COVID stimulus measures while simultaneously delivering social benefits. The volume of social bonds issued in 2020 jumped to USD249bn a 10-fold increase from 2019<sup>4</sup>, the French government issued \$22 billion to tackle unemployment<sup>5</sup>, while Bank of America issued USD1bn for lending to not-for-profit hospitals, nursing homes and manufacturers of healthcare equipment<sup>6</sup>. This rapidly growing socially and environmentally responsible bond market can be unified by a common value proposition that Green Bonds for

Climate Resilience offer: investments that engender more resilient economies, ecosystems, and communities. Resilience provides a lens through which social, ecological, and economic resilience can be captured and there are substantial synergies with the broader SDGs. By placing resilience at the heart of sustainability, a broader investor base can be reached.

### Supnationals are particularly well positioned to invest in A&R, especially in climate vulnerable regions and Emerging Markets.

The African Development Bank (AfDB), for example, dedicated 68% of their climate finance to A&R in 2020 in order to support Africa, the most vulnerable continent, to become more resilient to climate shocks. Supnationals and international development cooperation have the opportunity to crowd-in more private capital by increasing their share of A&R investments through anchor investments in the green bond market, along with support for broadening the number and type of green bond issuers.

### Green bonds for Climate Resilience could offer a diversified source of funding for public sector investment grade issuers to mainstream resilience in COVID-19 recovery efforts.

While many governments have recognized the need for a sustainable and resilient recovery, most governments have not adequately used economic stimulus to invest in climate change or long-term resilience<sup>7</sup>. Yet there is a tremendous opportunity for COVID-19 recovery stimulus finance to act as a catalyst for mainstreaming adaptation and resilience across a range of financial instruments, including bonds.

## STATE OF PLAY OF GREEN BONDS FOR CLIMATE RESILIENCE

**Climate resilience is already being financed.** A share of 16.4% (1,265) of deals in the global labelled green bond market (7,725 deals) issued as of September 2020 have included activities related to A&R, mostly in the water and water-related sectors. From these, 79% of the issuances have come from developed markets, 15% from supranational institutions, and only 6% from emerging markets. With respect to issuer, 12% of the green bonds that included A&R activities were issued by sovereigns and local governments, 65% by government-backed entities, 16% by development banks, 4% by financial corporates, and 3% by non-financial corporate organizations. The first green bond fully dedicated to support climate-resilient infrastructure, climate-resilient businesses, and climate-resilient agriculture and ecological systems – labelled as ‘Climate Resilience Bond’ – was issued by the European Bank for Reconstruction and Development (EBRD) in September 2019.

**Infrastructure projects with large capital expenditure and resilience benefits present clear premises for issuing Green Bonds for Climate Resilience, however, programmatic approaches can enable issuance for**

**other activities** such as sustainable landscapes, agriculture, and watershed management as well. Investors demand for green bonds exist and is growing quickly, however, supply of credible A&R investments is low and investors’ demand remains untapped. By identifying pipelines of eligible projects and programmes, this demand can be effectively harnessed.

**Positioning resilience-related bonds squarely within the green bond market will facilitate investment.** Climate resilience is integral to climate goals, and is already part of the green universe. Existing international standards already allow for the inclusion of A&R initiatives into green bond frameworks., and there are a number of thematic labels and financial tools that can be used to market resilience investments and attract investors. However, by leveraging the credibility, scale, momentum and liquidity that the green bond market has achieved over the past 10 years, the opportunity to scale becomes palpable. It is therefore important that resilience-related bonds are clearly positioned within the green bond universe to effectively tap into high investor demand in that market.

## CAPACITY ASSESSMENT FRAMEWORK FOR ISSUING GREEN BONDS FOR CLIMATE RESILIENCE IN EMERGING MARKETS

Issuers interested in Green Bonds for Climate Resilience are at different stages of market readiness with varying degrees of necessary capacities and enabling contextual factors including awareness, governance, resilience pipelines, investment-ready projects, capacity to issue, and long-term credibility. Analysis of issuances in the Latin America and the Caribbean (LAC) and Africa regions, along with a deeper analysis of issuance experiences in four African countries – Kenya, Morocco, Nigeria and South Africa – revealed that, despite differences in context, countries in EMs tend to face similar experiences, barriers, and opportunities on their path to issuing Green Bonds with A&R components. Examples include:

- There is limited knowledge and capacity to assess climate risk and identify eligible projects;
- Investment pipelines are not fully developed or large enough for meaningful screening against resilience criteria;
- Resilience screening guidelines are still high-level and lack metrics and as a result, issuers struggle to identify eligible projects.
- Resilience projects are often too small in scale compared to the minimum bond issuance size typically required by institutional investors, therefore they need to be bundled with mitigation projects to achieve scale;
- Most international investors will only invest in hard currency, whereas issuances in these countries is mostly in local currency and do not always display a high enough level of credit quality.

## ROADMAP TO SCALING GREEN BONDS FOR CLIMATE RESILIENCE

To seize the opportunity to grow the market for Green Bonds for Climate Resilience (particularly for investment grade issuers), the immediate priority is to **build momentum**. Engaging and supporting existing and potential new sovereign and sub-sovereign bond issuers poised to supply the market with Green Bonds for Climate Resilience, while concurrently engaging with institutional investors demonstrating demand is a key first step. Second, the **integrity of the market needs to be safeguarded and enhanced** by expanding and

refining standards while monitoring compliance to ensure investments are credibly contributing to stated resilience goals. Third, governments must create the policy and regulatory frameworks that enable the **achievement of scale and sustainability**. The roadmap presents key actions under these three priority areas that are applicable to policymakers, government institutions, standard-setting bodies, financial institutions, development finance institutions, multilateral banks, civil society, NGOs, bond issuers, and investors.

### PRIORITY 1: BUILDING MOMENTUM

- 1. Technical Assistance (TA) and Green Bonds for Climate Resilience support programmes.** TA from supranationals and international cooperation should support the added cost of issuing Green Bonds for Climate Resilience, namely structuring of green bond frameworks, the governance structure responsible for selection of resilience criteria and reporting, the development of metrics and reporting platforms, as well as benchmarking processes against industry best practice and evolving standards.
- 2. TA for the identification of ready-to-finance A&R pipelines.** In developing countries and emerging economies, TA from supranationals and international cooperation can be effectively applied to develop tools that prioritize investments that integrate A&R indicators into national budgets. Furthermore, TA can be provided through project preparation facilities that aim to finance pre-investment activities (i.e. project feasibility studies; value-for-money analyses that comprise climate risk assessments) needed to develop more robust pipelines of A&R investments.
- 3. Raise awareness of potential issuers through training on A&R in the context of green bond guidelines.** Awareness raising is needed to allow existing issuers and potential new issuers to better consider future climate risks - thereby stimulating Green Bonds for Climate Resilience issuances.
- 4. Boost blended and concessional finance solutions, as well as guarantee and risk-transfer mechanisms, to increase the number of issuers and issuances.** Supranationals and international cooperation should set up dedicated investment funds to support the issuance of green bonds for climate resilience, especially for sovereigns and sub-nationals with low credit ratings by (i) providing the anchor investment for first time issuers; (ii) de-risking mechanisms such as credit guarantees or political risk insurance for below investment grade issuers; (iii) enabling debt conversion swaps for countries with limited fiscal space, or (iv) hedging instruments such as cross currency swaps for sub-sovereign entities.
- 5. Engage and activate investor demand.** An investor survey that involves both quantitative and qualitative analysis of investor demand for Green Bonds for Climate Resilience could provide an effective tool for (i) raising awareness and engaging investors on this issue; and (ii) ensuring standards, reporting, and disclosure is fit-for-purpose in terms of attracting investors and meeting their needs. An investor statement specifically expressing demand for Green Bonds for Climate Resilience can bring much needed visibility to resilience in the green bond market. Engaging investors to expand their green mandates to include resilience goals can similarly have a catalytic impact.

## PRIORITY 2: SAFEGUARDING CREDIBILITY

- 6. Develop more granular and context-centric A&R guidelines.** Due to the unique nature of climate adaptation, it is fundamental to develop guidelines and frameworks for context-specific adaptation taxonomies. In order to ensure international harmonization, these may build on existing relevant taxonomies. The Climate Resilience Principles<sup>8</sup> (CRPs) as well as some of the work in the EU Taxonomy for Sustainable Finance<sup>9</sup> and continuing work of the associated EU Platform on Sustainable Finance<sup>10</sup> may serve as starting points for advancing more granular and context-centric resilience guidelines. New or revised guidelines should also address gaps of the existing guidance, which still lack process metrics to ensure the quality of risk assessment activities; sector-specific guidance for issuers; impact reporting metrics; standardised benefit quantification methodologies; and methodologies for evaluating trade-offs between mitigation and adaptation, or any other environmental or social objectives.
- 7. Report and track on resilience investments.** Accurate tracking of Green Bonds for Climate Resilience can help investors identify opportunities available and drive greater capital flows toward investments in A&R; support government agencies in developing policies and regulatory guidance around labelling, issuing and reporting; and can ensure continued integrity of the green bond market as a whole. Online platforms such as LuxSE's Luxembourg Green Exchange<sup>11</sup> and the Inter-American Development Bank's (IDB) Green Bond Transparency Platform<sup>12</sup> are essential instruments to ensure the transparency and the comparability of Green Bonds that are needed to ensure greater level of confidence to existing investors.
- 8. Monitor, review and critique deals.** Local civil society organisations can be critical in monitoring and reviewing the local market to highlight any issues or local best practice. This is critical in helping the local market to maintain credibility and in providing investors with greater visibility within the local market.
- 9. Respond to investor demand for entity-level credentials.** The lack of standard definitions of what makes a bond 'green' has led to uncertainty over whether all green bonds really are 'green'. The mainstreaming of investing based on environmental, social, and governance (ESG) principles is motivating fund managers and investors to increasingly look past the green bond label and assess the bond issuer's overarching green credentials and targets. Clear adaptation targets in NDCs, robust National Adaptation Plans (NAPs) and strong climate policies are key to build a good reputation and ensure the quality of the credentials of sovereign and sub-national bond issuers.





**PRIORITY 3: SCALING-UP**

- 10. Harmonise domestic guidelines with global taxonomies and standards.** Consistency of definitions is critical for investors, particularly for international investors. At the same time, resilience measures also need to be locally relevant and specific. Expressing local needs and priorities in a compatible vernacular shall bolster the credibility of issuers and provide confidence to investors to scale up investments.
- 11. Support the development of more robust NAPs.** Government engagement is fundamental to prioritize investments and financial instruments for climate resilience. Frameworks and tools that enable the prioritization of A&R programs and projects in national budgets are needed. Through robust NAPs and mainstreaming climate resilience in national budgets, a pipeline of investments can be established – the lack of which are a key barrier to issuing Green Bond for Climate Resilience.
- 12. Establish mandatory climate risk disclosure in targeted sectors.** Currently, green bond issuers absorb the additional transaction costs associated with external review and certification. Governments can level the playing field for transparency, disclosure and reporting costs between green and non-green bond issuance by extending the focus on disclosure requirements on green credentials to all fixed income issuances.
- 13. Provide regulatory incentives for resilience investments.** A variety of incentives can be used to accelerate the pace of issuance including tax-exemptions, preferential withholding tax rates, preferential treatment in asset purchasing and collateral programs for Green Bonds for Climate Resilience by the financial regulator, etc.
- 14. Support financial product innovation around aggregation to** enable small projects and issuers to access capital through the green bond markets. This includes aggregation, green securitization and green covered bonds. These product innovations require putting in place a robust legal and regulatory framework that allows the instruments to be created and used.



# ENDNOTES

- 1 Africa and LAC were selected due to their vulnerability and the potential for south-south cooperation and sharing of lessons from more advanced green bond markets in LAC to emerging ones in Africa. The analysis does not represent the analysis of all Emerging Markets (EMs) where Green Bonds for Climate Resilience may be issued.
- 2 The selection of countries for the African Case Studies was based on their climate vulnerability, degree of capital market development, presence of green bonds, and infrastructure growth trajectories. However, the study was constrained to the selection of 4 case studies and the case studies do not represent all countries in the African region that fit these Criteria.
- 3 The World Bank (October 2020) Poverty and Shared Prosperity 2020 Reversals of Fortune, available at: <https://www.worldbank.org/en/publication/povertyand-shared-prosperity>
- 4 <https://www.climatebonds.net/2021/04/record-700bn-green-social-sustainability-gss-issuance-2020-global-state-market-report>
- 5 <https://www.icade.fr/finance/financement/financement-durable/documents-social-bond/icade-sante-social-bond-framework-septembre-2020.pdf>
- 6 <https://newsroom.bankofamerica.com/press-releases/corporate-and-financial-news/bank-america-issues-1-billion-corporate-social-bond>
- 7 [https://www.vivideconomics.com/wp-content/uploads/2020/08/200820-GreenStimulusIndex\\_web.pdf](https://www.vivideconomics.com/wp-content/uploads/2020/08/200820-GreenStimulusIndex_web.pdf)
- 8 The Climate Resilience Principles, developed by the Climate Bonds Initiative, require that issuers must demonstrate that for the assets and activities (re)financed via a green bond they: 1) Understand the climate risks faced by the asset, activity or system in question; 2) Have addressed those risks by undertaking risk-reduction measures and adopting flexible management plans that take account of inherent uncertainties around climate change, ensuring that the asset, activity or system is robust, flexible and fit-for-purpose in the face of that uncertainty; 3) Can deliver resilience benefits over and above addressing identified risks (for system-focused investments); and 4) Are undertaking regular (re) evaluation of the asset and/or system's climate resilience performance, adjusting to risk reduction measures over time as needed. <https://www.climatebonds.net/climate-resilience-principles>
- 9 The EU Taxonomy for Sustainable Activities is a classification system, establishing a list of environmentally sustainable economic activities. It is an important enabler to scale up sustainable investment and to implement the European Green Deal. Notably, by providing appropriate definitions to companies, investors and policymakers on which economic activities can be considered environmentally sustainable, it is expected to create security for investors, protect private investors from greenwashing, help companies to plan the transition, mitigate market fragmentation and eventually help shift investments where they are most needed. [https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities\\_en](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en)
- 10 The Platform on Sustainable Finance brings together the expertise on sustainability from the corporate and public sector, from industry as well as academia, civil society and the financial industry join forces. As a permanent expert group of the European Commission that has been established under Article 20 of the Taxonomy Regulation, the Platform will assist the Commission in developing its sustainable finance policies, notably the further development of the EU taxonomy. [https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance/platform-sustainable-finance\\_en](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance/platform-sustainable-finance_en)
- 11 Luxembourg Green Exchange (LGX) is a platform dedicated entirely to sustainable securities that provides visibility to issuers who raise funding for green and sustainable investment projects. Issuers wishing to display their financial security on LGX first need to comply with the platform's stringent eligibility criteria and then commit to ongoing reporting on their investments. LuxSE established partnership agreements with important institutions in Africa, Asia and South America to promote the sustainable finance agenda and strengthen cross-border collaborations in support of sustainable development. <https://unfccc.int/climate-action/momentum-for-change/financing-for-climate-friendly-investment/luxembourg-green-exchange>
- 12 Green Bond Transparency Platform is an initiative developed by the Inter-American Development Bank (IDB) with the objective of supporting the harmonization and standardization efforts on LAC green bond reporting. Its goal is to contribute to transparency and comparability, helping attract new investors to the region and providing a greater level of confidence to existing investors. <https://greenbondtransparency.com/>



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