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1. Context

Despite increasing recognition of the material impact of nature degradation, the global financing gap for climate and nature investments is significant and growing. The Paulson Institute estimated in 2020 that the biodiversity financing gap at an average of US\$711 billion per year. Government leaders and private enterprises must accelerate and scale financial resource mobilization strategies to close this gap. However, at a national level, many developing countries have limited market access and lack the fiscal space to mobilize financing at the scale required to avoid the severe negative impacts of biodiversity loss, nature degradation, and reduced ecosystem services. This can precipitate countries into a vicious circle, whereby delayed investment at scale exposes them to the risk of ecosystems collapse. These systems also provide essential climate benefits in terms of carbon sinks and adaptation buffers against severe climate impacts (e.g., floods, droughts, storms). These natural assets underpin economic growth of developing countries but are currently undervalued and underinvested. Given the difficulty of estimating the timing, progression, and extent of these impacts and their global public good (GPG) nature, other more immediate or visible needs tend to be prioritized. However, when nature-related risks materialize, economic activity is likely to contract, further reducing fiscal space, increasing a country's borrowing costs, and delaying investments.

Even when the risks and benefits of investing in climate and nature are recognized, there is a lack of bankable and financially profitable/commercially viable projects in many countries. Financial products that directly finance nature action are nascent and Environmental, Social, and Governance (ESG) and impact investors have limited options to channel capital to directly support projects that deliver nature conservation outcomes, especially in lower and middle income countries. An underlying reason for the limited

development of financial products in the capital markets is that climate and nature-oriented measures, especially GPGs, do not always provide a financial return or generate positive cash flow, and climate and biodiversity considerations are not fully integrated into financial models' investors use to allocate capital. In addition, despite significant advances in the development of climate and nature-related financial risk assessment frameworks and regulations, the awareness of these risks is still limited among firms and there currently are no established standards for market participants to apply in this market

2. Leveraging finance to meet national commitments and implement climate and nature plans

There is significant momentum globally to integrate climate and nature commitments in national development plans. Countries have made significant progress in outlining climate mitigation and adaptation challenges and opportunities in their Nationally Determined Contributions (NDCs), National Biodiversity Strategies and Action Plans (NBSAPs) and other national development and sustainable development plans set the vision and objectives for priority climate and nature investment opportunities. In addition, countries are also developing national climate financing strategies and partnership engagement efforts to channel more resources towards their commitments. The updated plans often contain monitoring, review, and verification (MRV) frameworks for mitigation and adaptation to track climate and nature finance flows. It is now more common for sector-specific plans to detail the specific near and medium-term interventions and SDGs' linkages.

These national efforts provide the platform for launching initiatives to overcome climate and nature financing challenges. Progress needs to be made on two fronts: incentivizing improved management of climate and nature risks (greening finance); and monetizing cashflows from the provision of climate actions and ecosystem services (financing green).

Greening finance.

Governments are estimated to spend at least US\$800 billion on fossil fuel, fishing, and agricultural subsidies. While important for immediate concerns such as food security, livelihoods and incomes, they are harmful to biodiversity and will compromise longer-term development outcomes.ⁱ “Greening finance” refers to efforts to direct financial flows away from projects and programs that detrimentally impact the climate agenda or biodiversity and ecosystem services, toward investments that mitigate such negative impacts or deliver positive climate and environmental co-benefits. Examples include creating fiscal incentives for incorporating nature-related risks into investment decisions, or repurposing subsidies harmful to biodiversity towards nature-friendly programs and projects.

Financing green.

While a substantial portion of the climate and nature financing gap could potentially be addressed through subsidy reformⁱⁱ or other “greening finance” measures, direct investments in climate action and nature-based solutions will also play a key role. “Financing green” involves investments in projects and programs that contribute to climate mitigation, climate adaptation as well as the conservation, restoration, and sustainable use of green and blue biodiversity and ecosystem services. Examples include the use of concessional finance to de-risk and scale private investment and pilot financial solutions. For instance, fixed income products linked to forestry, non-timber forest products, wildlife, and fishing, can help channel financing from the capital markets.

Another example is investing domestic public finance in nature-based solutions that generate nature co-benefits while meeting other development objectives.

3. Engaging development partners in technical assistance and financing

Governments are increasingly seeking technical and financial support to enhance the sustainability and climate resilience of their investments and strengthen their technical capabilities to structure and deploy innovative financial solutions. The WBG, along with other MDBs, is committed to: (i) developing financial instruments to support climate mitigation and adaptation, as well as reverse nature loss and promote nature protection, restoration, and sustainable use; and (ii) expanding the use of innovative instruments, both financial and technical, to support climate and nature positive investments. Building on and complementing other related assessment frameworks, including the Country Climate and Development Report (CCDR), and Financial Sector Assessment Program (FSAP) Climate and Environmental Risk and Opportunity (CERO) Framework, The WBG has already provided country-level options analysis technical assistance support to Kenya, Jordan, Malawi, Rwanda, Ethiopia, Maldives, and other countries to assess potential policy, debt, and non-debt instruments available to help countries scale climate and nature action. These experiences highlight how various instruments can be used to mobilize additional public and private financing. It also emphasizes the potential country-driven efforts and platforms offer to maximize financing instruments available to countries to increase nature and climate action that deliver GPGs and generate benefits to local communities. A summary of these instruments is highlighted in Annex 1.

4. Public financing

Specific instruments countries can consider leveraging to catalyze climate and nature finance by the public sector include:

Grants:

In the short term, many countries will continue to rely on grants from donors to fund nature and climate projects and programs. These grants can be used to accelerate private climate and nature investments. Countries can engage bilateral and multilateral donors in project financing as well as program for results and overall budget support. There are also an increasing number of philanthropic organizations providing sizable grants for nature and climate. These grants can potentially be structured into innovative financing, including capitalizing national climate and nature funds, providing equity for projects, and de-risking investments or blending it with other financing to reduce overall costs.

Concessional financing:

National Treasuries and Ministries of Finance can explore opportunities to maximize concessional and semi-concessional funding from various donors, particularly development banks and bilateral lenders. Concessional loans can be blended with semi- or non-concessional loans to bring the all-in costs down for specific budget or project investments in priority climate areas. Countries can also explore more innovative financial structures from these concessional and semi-concessional resources. For example, they can be used for liquidity backstops for climate-focused projects (e.g., to create a price floor under a power purchase agreement for renewable energy projects) to incentivize private sector investments. In addition, concessional financing can be used in the form of guarantees that may give countries access to the financial markets at better terms. The environmental and social safeguards that are applied would also give added comfort to investors on the quality of projects.

Sovereign green/blue bonds:

When capital market conditions are conducive to new sovereign bond issuances, governments can explore the potential for a use-of-proceeds green, blue, or sustainable bond issuance.¹ These bonds can be issued in the international or domestic market, depending on market opportunities. Sovereign green bonds can bring in new investors, signal positive policy directions, generate funding for specific portfolios of eligible green projects, and potentially yield slightly better financial terms. To prepare for future bond issuances, countries can prepare green/blue bond frameworks that establish eligible expenditures. These use-of-proceeds bonds can potentially be issued at the national level or a sub-national entity. Impact monitoring can be linked to NDC priorities, including GHGs avoided or captured, or NBSAPs. MDBs and bilateral partners have supported numerous countries globally on the development of such frameworks. Public green/blue bonds can also serve as a precursor for issuances by the private sector.

Sovereign sustainability-linked bonds (SLBs)

A relatively new form of sustainable bonds are the SLBs, which tie the financial performance of the bond to the achievement of pre-established, agreed-upon Key Performance Indicators (KPIs). The lack of progress towards the KPI achievement can result in an increase in the instrument's coupon, and similarly exceeding the KPIs can result in the lowering of the coupon. However, despite being issued to attain a specific KPI, they are general-purpose bonds, and the funds are not tied to a particular use of proceeds allocation. SLBs have been predominantly used in the corporate space, but they are increasingly being explored by sovereign entities (e.g., Uruguay and Chile) for their versatile nature and the capacity of the issuer to set suitable KPIs as well as to raise investors' interest. This approach may be interesting for countries to

consider as achievement of KPIs can provide a strong financial incentive and benefit to the government. The World Bank has been working on [innovative sustainability-linked financial structures](#) and on improvements on KPI design and measurement to amplify access of this form of financing for a broader set of sovereigns and other public sector entities.

Debt for Results Refinancing:

Some countries may have refinancing possibilities of existing commercial public debts with some form of concessional financing support from donors or otherwise with a designated purpose to invest in specified areas, such as nature conservation. In a global context in which 60 percent of low-income developing countries are already at high risk of or in debt distress, such opportunities could be found for countries that need debt relief, for which debt restructuring could be warranted. Detailed analysis and discussion with development partners and rating agencies would be beneficial to assess potential negative impacts of other market-based debt financing options. Debt-for-nature/climate swaps (e.g., Ecuador, Belize, Barbados, etc.) have been used to provide partial debt savings conditional to a climate spending commitment of equal or smaller size than the debt service savings. Swaps can reduce government debt, typically exchanging more expensive old debt for cheaper new debt and redirecting the savings towards an agreed upon conservation initiative. Debt-for-climate swaps need to be considered on a case-by-case basis assessing type of debt, costs, terms and conditions, and other factors which need to be carefully considered. Swaps should also not come at the expense of concessional finance or broader debt reforms.

Subnational green/blue investments.

Subnational governments, municipalities, and state-owned enterprises across regions have gained experiences in recent years with climate and nature finance,

which offer lessons learned and insights for replication and scaling. Technical assistance, knowledge exchanges, and financing can help countries and subnational governments to develop and invest in projects and programs that support locally led urban and peri-urban climate actions, private sector incentives for low-carbon emissions and climate resilient investments, and operationalized market-based mechanisms for carbon trade.

5. Private financing, including the financial sector

As many developing countries are experiencing fiscal constraints and challenging macroeconomic conditions, a large share of new financial resources will need to come from the private sector. For some sectors that have an established market and where customers already pay for products and services (i.e., energy, water, transportation, etc.) private sector can deploy business models that can generate a profit. For other sectors, including some biodiversity and climate adaptation investments, significant financial incentives or risk-based financing may be needed for private enterprises to deploy capital which may not generate sufficient returns in the near to medium term.

Domestic financial institutions can play an important role in closing a country's climate financing gap, but in many countries their roles have been limited to date. There are several barriers inside and outside of the financial system that limit the development of green finance markets at scale. For example, there is misalignment between financial sector policies and incentives for climate and environmental objectives. In addition, many countries lack a taxonomy that provides a framework to assess which investments can be classified as climate, green or blue for a certain jurisdiction by financial actors. There is also often a limited pipeline of bankable green projects, partly

due to the limited motivation or capacity of financial institutions to identify and originate climate assets. Furthermore, the high upfront financing costs, transactions costs, lack of track record of new technologies, and long payback periods of green investments could increase the real and perceived riskiness of climate projects. Macroeconomic shocks, such as rising inflation, high levels of public and private debt, and rising interest rates globally, also have a ripple effect on the financial sector's openness to make upfront investments in new technologies. In addition, in the case of low-income countries, the domestic financial sector is often too small to cover the large climate and nature financing gap that the country faces.

To address these challenges, several non-debt instruments are receiving attention and can be considered as part of a broader climate and nature financing portfolio used by sovereigns, development partners, and other stakeholders. Sample instruments that can be considered to stimulate climate finance from the private sector include.

- **Private equity/ nature investment funds:**

Funds investing in nature/climate technology to deploy new tools such as artificial intelligence, geospatial solutions and remote sensing, communications including digital connectivity, data, and various tracking and transportation solutions. There is an increase in private investments to deploy digital tools to certify and trace products that minimize negative environmental impacts to nature. There is also scope for public-private funds that take minority stakes in companies whose mission is to support climate mitigation and adaptation or restore nature. Companies are also increasingly focusing on integrating climate and nature-related impact and dependencies in their supply chains through enhanced policies, standards, sourcing, and reporting.

- **Carbon markets:**

The use of carbon markets can increase the resources mobilized from both the public and private sector and reduce the costs of implementing NDCs. A robust framework is required to provide the necessary legal basis for carbon markets. Once the legal framework is in place, regulations or policies are needed to operationalize the legislation. Governments also need to develop the necessary infrastructure in the form of MRV systems and registry infrastructure. The World Bank has a wide range of capacity building and piloting initiatives to support these efforts. For example, the World Bank's Carbon Initiative for Development (Ci-Dev) supports governments implement the standardized crediting framework at a national level which can facilitate the development of the institutional and governance frameworks for participation in international carbon markets. Once carbon pricing can be established with credible sellers and buyers, carbon credits can become an asset that can be used in multiple ways, including as revenue for projects, collateral for bond issuances, funding for bond repayments, and other uses. One recent innovation in Vietnam was a [World Bank emission-reduction linked bond](#) that enabled the coupons to be paid via the generation of carbon credits.

- **Outcome bonds:**

Outcome bonds, such as the Wildlife conservation bond (WCB), are a recent innovation devised by the World Bank to finance biodiversity through the capital markets based on achievement of impacts. Essentially, a donor institution (such as the WB) issues a bond against its own balance sheet and the investors forgo the coupon payments upfront. The bond issuer then takes the present value of the coupon payments and provides them as grant installments directly to the implementing agency within a beneficiary country. The private investors who purchased the

bond will receive a return (coupon) on the bond based on the success of the associated conservation initiative. The success payment of the coupon to investors will be covered by a grant payment from a third-party donor. The principal of such bonds will be used for general purposes by the issuer. The World Bank in 2022 issued the “Rhino Bond” to support black rhinoceros’ conservation in South Africa, which links investor returns based on the growth of the rhino population in two sites in South Africa.

- **Payment for ecosystem services (PES) and Biodiversity credits:**

PES and the emerging biodiversity credit market offer potential to generate additional resources for governments and target funds to farmers/rural communities for the provision of ecosystem services. These markets are in early stages and not yet widely adopted to generate large scale funding. As legislation, methodologies, and financial mechanisms continue to mature these schemes can potentially provide additional sources of funding and revenue streams to support deployment of new financial instruments. PES can be implemented through government-sponsored programs or through compliance and voluntary markets. Under a public PES program, the government pays landholders to undertake actions that increase the supply of ecological services from their land. PES can target restoration of forests that provide non-timber services (e.g., mixed native species forests), which markets do not typically reward landholders to supply, as well as those that provide commercial opportunities (e.g., mixing timber forests and native species). Governments can also develop and implement national PES programs that involve cost sharing with subnational governments or private corporations and that leverage compliance and voluntary markets. Compliance markets for PES include biodiversity

mitigation banks (e.g., the US and Australian markets).

In addition to investment instruments, countries can leverage a growing set of risk management data, tools, and initiatives to direct capital away from harmful investments and towards nature-positive activities. Government agencies and private sector leaders can increase their efforts to reduce climate and nature risk by developing and deploying a set of risk management tools and actions. A starting point can include the following:

- **Leverage technology and innovative tools to inform climate and nature finance decisions.**

Rapid advances in technological tools can assist with data capturing and reporting, along with traceability of investments. In addition, international and domestic disclosure and reporting requirements are driving adoption of approaches to identify climate assets, projects, and companies. Existing and emerging global guidance is currently provided by TCFD, TNFD, and IFRS. A climate finance tracking system (in line with a high-level green/blue taxonomy) can help countries track their climate and nature investments. Information platforms, including those that leverage blockchain technologies, can be developed to enhance access to information about climate and nature investments and increase transparency.

- **Enhance the availability and quality of data required to monitor and manage climate risks.**

Central banks and other financial regulators can also collect more comprehensive and granular data (including impact and dependency of banking sector on nature, geographical exposure, etc.) and work with other government agencies to improve the quality of climate data (e.g., early warning systems).

- **Climate and environmental risk management by the financial sector:**

Climate change, combined with other factors, such as biodiversity loss, create new risks for financial stability and the lack of understanding or awareness of climate risks can also delay financing for climate action. Since the perceived level of risk has a direct impact on investment decisions, managing climate risks through financial supervision and increasing awareness can play a critical role in changing financial behavior and driving capital towards climate goals.

- **Regularly assess and monitor climate and environmental financial risks.**

Central banks can build its internal capacity to refine climate and nature risk scenario analysis/stress testing over time. Other financial regulators can also conduct more simplified climate and environmental risk assessments for pensions and insurers.

- **Integrate climate and environmental risks into the micro-supervision of banks, insurers, and pensions.**

Central banks can build capacity in supervisory teams to ensure that risk management practices are adequately adopted by banks. There are also needs for issuing guidelines for pensions and insurers.

- **Contribute to and gain insights from the Network for Greening the Financial System (NGFS) task force on ‘biodiversity loss and nature-related risks’.**

Countries can increase their understanding of nature-related risks and methodologies, data, and scenarios for improving risk assessment. Not only would this work enable more insights

into key nature-related financial risks, it can also indirectly help incentivize the development of suitable financial instruments to close nature and climate finance gaps.

- **Develop a national strategy and roadmap for greening the financial sector:**

A national level strategy or roadmap can signal its commitment to the nature and climate agenda. Mainstreaming climate into broader financial sector plans can also help assess financial sector conditions act as key barriers to climate finance. All relevant authorities should be consulted on the development of a national strategy (beyond those responsible for financial sector development) to seek and obtain feedback from financial and non-financial institutions. The goal of the roadmap is to align financial sector policies, regulations, and incentives with national environmental and climate objectives. Incentivizing bank lending towards climate-friendly projects, or disincentivizing credit away from harmful projects, can gradually transform the flows of investments in an economy.

- **Deepen and broaden disaster risk financing and insurance.**

Adequate access to finance is essential for a country to strengthen its resilience in key sectors vulnerable to climate change, including energy, agriculture, tourism, etc. A national climate finance strategy (or a stand-alone national disaster risk finance strategy) can detail the goals and objectives for strengthening financial resilience against climate shocks (including through the insurance sector). Layered climate disaster risk financing can then also be put into place to cover the high frequency, low damage events through fiscal funds to low frequency, high impact events through market transfer products, such as catastrophe bonds and insurance.

6. The way ahead

Mobilizing financing for climate and nature at scale requires a comprehensive approach, where countries enhance coordination and institutional capacity and effectively engage the private sector and development partners. In the near to medium term, countries will need to maximize grants and concessional financing to help de-risk nature investments, or provide potentially higher returns, for private capital to flow to nature-friendly investment options. As part of the transition towards climate and nature-smart finance, there is a key role for enhanced knowledge, data, technology, and decision-support tools. Countries can promote and facilitate the systematic incorporation of climate and nature-related risks and opportunities into investment decisions of public institutions, financial institutions, and companies. Improved data and analytics can support “greening finance” by documenting the economic and financial costs of inaction, and by underpinning assessments of alternative policy options to re-orient finance towards improved management of nature. Similarly, “financing green” requires standardized, widely accepted metrics for nature-positive outcomes, to which financing can be linked.

Knowledge products, technological tools, technical assistance, and financing provided by development partners can help countries implement policy reforms and investment programs. These efforts can help shift the balance from an overreliance on limited government budgets and grants towards a longer term and holistic approach that attracts domestic and foreign private capital. With corporates and investors starting to pay more attention to the environmental, social, and governance aspects of their investment decisions, countries can show leadership in this space by scaling up national efforts and engaging in global initiatives, especially in the following areas:

- Enhance global and national level coordination to efficiently deploy a combination of policy and financial instruments, including grants and concessional finance from donors and private foundations.
- Strengthen national financial and institutional capacity to mobilize finance to support priority climate and nature investments, including standardizing use of monitoring, reporting, and verification systems and building capacity to leverage innovative policy, debt, and non-debt instruments.
- Develop and publish a strategy or roadmap to identify priorities for climate and nature finance and clarify roles and responsibilities. A climate and nature finance strategy can set a country’s strategic priorities to stimulate private and public finance and provide a broader picture of how climate and nature finance needs will be covered by different sources.
- Prioritize and sequence a portfolio of investments based on the country’s strategy, and considering climate/biodiversity targets, macro-fiscal situation, debt management strategy, and access to capital markets. This prioritization can build on a mapping exercise of all sources of concessional financing from development partners to identify all concessional resources the country is eligible for which could be mobilized to reduce the climate and nature financing gap.
- Initiate programs to pilot test and scale innovative instruments, especially those that do not add to sovereign debt and performance-based financing (e.g., including carbon markets, outcome bonds).
- Establish MRV frameworks to provide a clear view of domestic and international financial flows, trends, sources, and goals.

Annex 1. Overview of public and private financing options

| Financing instrument | Financing source | Main purpose | Beneficiary | Potential support from authorities |
|---|---|--|--|---|
| Public | | | | |
| Grants | Donors, philanthropies | Support technical assistance/ policy work, climate projects that are not commercially viable, as well as programs that accelerate private investments (e.g., de-risking or blended finance). | Government project pipeline, private sector | Work with donors and other development partners to apply for grants. |
| Concessional finance | Donors, philanthropies | Bring down the costs of finance. Help leverage the private sector (e.g., via blending with semi or non-concessional loans). | Government project pipeline, private sector | Work with donors and other development partners to apply for concessional loans. |
| Sovereign green and sustainability-linked bonds | Domestic and international investors | Mobilize finance for the central government to finance or re-finance climate projects. | Government project pipeline | Assess government appetite and capacity to issue bond, including ability to comply with fixed costs (e.g., monitoring and reporting). |
| Private | | | | |
| Climate risk management by the financial sector | Not applicable | Enhance financial resilience to climate shocks. Indirectly drive capital towards climate goals by mainstreaming climate risk considerations in lending and investment operations. | Financial institutions | Monitor climate risks for the financial sector. Ensure banks' compliance with climate risk supervisory guidance. Consider developing similar guidance for non-bank FIs. |
| Climate finance strategy | Not applicable | Define how short and long-term financing will be mobilized to implement the country's climate goals | Cross-cutting | Bring together relevant stakeholders to identify priorities and clarify roles |
| Market transparency | Not applicable | Help stakeholders identify green assets, projects, and companies | Cross-cutting | Enhance climate disclosures. Consider a climate finance tracking system |
| Green NDB | NDB | Address market barriers to private investments (e.g., long payback period) and support investments in underserved areas (e.g., adaptation) | Government project pipeline, private sector | Assess the appropriate design structure for greening NDB, develop a roadmap for implementation (e.g., setting climate targets for NDB) |
| Loan market for climate action | Banks | Scale private finance for climate action | Bank clients | Offer de-risking instruments, issue green loan guidelines |
| Corporate green or sustainability-linked bonds | Capital markets | Scale private finance for climate action | Issuers of bonds | Incentive mechanisms to encourage uptake of green bonds (e.g., aggregation, guidelines to investors, capacity building) |
| Disaster risk finance and | Insurance market | Mobilize private capital and expertise for climate adaptation | Farmers and other firms/ individuals that are vulnerable to climate shocks | Draft phase two of the disaster risk strategy, implement climate insurance programs, explore the use of catastrophe bond and insurance |
| Cross-cutting | | | | |
| Carbon market | Buyers (e.g., corporates with net zero targets) | Mobilize additional financing from public and private projects | Project developers (could be public or private) | Develop the legislation, infrastructure, and institutional arrangements for carbon markets |



