Healthy Debt on a Healthy Planet

Towards a virtuous circle of sovereign debt, nature and climate resilience

The Final Report of the Expert Review on Debt, Nature and Climate

The Expert Review on Debt, Nature and Climate

The Expert Review on Debt, Nature and Climate was established in 2023 by the governments of Colombia, Kenya, France and Germany as an independent, comprehensive assessment of the relationship between sovereign debt, nature conservation and climate action in low and middle income countries. It is an initiative of the Paris Pact for People and the Planet (4P), which gathers over 70 countries on a shared agenda to reform the international financial architecture.

The Expert Review has been led by an Independent Expert Group (IEG) co-chaired by Vera Songwe and Moritz Kraemer. Drawn from both developed and developing countries, members of the IEG have expertise and experience in borrower and creditor country governments, international financial institutions, the private sector, academia and civil society.

The Expert Review has been supported by a Secretariat drawn from four independent research institutes: the UN Economic Commission for Latin America and the Caribbean (CEPAL/ECLAC, based in Santiago, Chile), ODI Global (based in London, UK), the Finance for Development Lab (based in Paris, France), and the African Center for Economic Transformation ACET (based in Accra, Ghana).

The Expert Review was tasked with examining how the structure, volume and analysis of sovereign debt impact on the ability of low and middle income countries to conserve nature, adapt to climate change and decarbonize their economies; and how such debt can become more sustainable, both fiscally and environmentally.

The Review has consulted widely with stakeholders in this field (see Acknowledgements). Its Interim Report, *Tackling the Vicious Circle*, was published in October 2024. Both the Interim and Final Reports have been produced by the Independent Expert Group and should not be taken as reflecting the views of the sponsoring countries.

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For more information, and to contact the Review, visit www.debtnatureclimate.org.

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All members of the Independent Expert Group serve in an individual capacity. This Report does not necessarily represent the views of the institutions to which they are affiliated. Members of the Independent Expert Group all agree with the broad thrust of the analysis and recommendations presented in this Final Report, but should not be taken as agreeing with every formulation or proposal.

Contents

Acronyms

AfDB	African Development Bank
BBD	Barbados dollar
CAF	Capital Adequacy Framework
CGE	Computable general equilibrium
COP	Conference of Parties
CRDC	Climate-resilient debt clause
DFI	Development finance institutions
DRM	Domestic revenue mobilization
DSGE	Dynamic stochastic general equilibrium
DSA	Debt Sustainability Analysis
DSF	Debt Sustainability Framework
DSSI	Debt Service Suspension Initiative
EMDC	Emerging and developing country
EIB	European Investment Bank
F2C2	Finance Facility against Climate Change
FX	Foreign exchange
GDP	Gross Domestic Product
GNI	Gross National Income
G20	Group of 20
IDA	International Development Association
IDB	Inter-American Development Bank
IFFIm	International Finance Facility for Immunisation
IFI	International financial institution
IHLEG	Independent High-Level Expert Group on Climate Finance
IMF	International Monetary Fund
JETIP	Just Energy Transition Investment Plan
KPIs	Key performance indicators
LDC	Least developed country
LIC	Low-income country
LIC-DSF	Low-income country debt sustainability framework
LIMC	Lower-middle income country
MAC-SRDSF	Sovereign Risk and Debt Sustainability Framework for Market Access Countries
MDB	Multinational development bank
MIC	Middle-income country
MIGA	Multilateral Investment Guarantee Agency
NAP	National Adaptation Plan
NBSAB	National Biodiversity Strategy and Action Plan
NDC	Nationally Determined Contribution
ODA	Official Development Assistance
SDG	Sustainable Development Goal
SDR	Special Drawing Right
SFC	Stock-flow consistent
SIDS	Small island developing states
SLB	Sustainability-linked bond
SLF	Sustainability-linked financing
SLL	Sustainability-linked loan
UNCTAD	UN Trade and Development
UNDP	United Nations Development Programme

Executive Summary

Nature loss and climate change pose an increasingly urgent threat to prosperity and wellbeing. Responding to these unfolding crises will require substantial investment in all countries, and particularly in emerging market and developing countries (EMDCs). Yet at this crucial moment, capital has actually been flowing out of EMDCs, primarily as a result of the slowdown in growth in the advanced economies alongside persistently high inflation.

Recent months have seen a notable deterioration in the international environment of trade, investment and interest rates, and aid flows have been cut. The issues discussed in this report have therefore become even more urgent.

EMDCs will need purposeful and integrated strategies to mobilize all affordable finance sources and deploy them according to their complementary strengths. But even with stronger efforts to mobilize domestic resources and create an enabling environment, many EMDCs will not be able to unlock the investment they need without urgent action to address existing pressures on their sovereign debt. Some are facing insolvency, while many are grappling with illiquidity.

In our Interim Report, we articulated how, for a growing number of countries, the debt, climate and nature crises are coming together in a 'vicious circle'. Increasingly frequent and severe environmental shocks and stresses are forcing many countries to borrow more to finance disaster response and recovery. Those same shocks and stresses constrain economic growth and public revenues, reducing fiscal headroom to pursue sustainable development and service existing debt. Climate- and nature-related risks, higher debt burdens and slower growth all also serve to make borrowing more expensive, which in turn makes meeting the incremental costs of climate-smart and nature-positive development even harder. Debt pressures and environmental vulnerabilities are most pronounced in the poorest and most credit-constrained countries, such as least developed countries (LDCs) and small island developing states (SIDS). Yet these countries account for only a tiny fraction of the consumption and emissions driving nature loss and climate change.

Shifting to a virtuous circle implies a profound change in both economies and societies, with transition risks and tradeoffs in key sectors.

Our Interim Report also laid out an alternative development path: a 'virtuous circle' of green and resilient economic growth. While the risks of disasters and other costs of climate change will not disappear, sustainable infrastructure investment, technological innovation, improved resource productivity and large-scale environmental conservation and restoration could nonetheless drive strong, balanced and resilient development in the face of these challenges, while sustaining the ecosystem services on which economies and societies depend. However, shifting to a virtuous circle implies a profound change in both economies and societies, with transition risks and tradeoffs in key sectors. It will also demand a step change in the quantity and quality of domestic and international financing, both concessional and non-concessional. Such a step change will only be possible through concerted efforts by EMDCs themselves, their creditors and the international financial institutions.

A holistic response to the triple crisis is critical to break the vicious circle and shift to a virtuous circle of green and resilient economic growth.

In this Final Report, we offer a suite of recommendations to respond to the 'triple crisis' of debt pressures, nature loss and climate impacts being experienced by many countries. Our recommendations are intended to support borrowers, creditors and the multilateral processes working to unlock finance for sustainable development in this critical decade of action. These recommendations should be understood as complements to one another, rather than alternatives or substitutes. A holistic response to the triple crisis is critical to break the vicious circle and shift to a virtuous circle of green and resilient economic growth.

First, we call for the mainstreaming of nature and climate considerations into macroeconomic and fiscal analysis. Around the world, economic, fiscal and financial decision-makers are beginning to recognize how nature and climate considerations should inform their decisions. But there is more to do to properly include such considerations in the models and tools they use. Incorporating nature and climate risks and benefits into economic models is not easy, but failure to do so leads decision-makers to seriously undervalue nature- and climate-related investment. We recommend that:

- The IMF and World Bank should continue to revise their Debt Sustainability Frameworks (DSFs) to better incorporate both climate-related and nature-related risks and the economic benefits of policies and investments to reduce them. In particular we recommend that they:
  - Strengthen Debt Sustainability Analyses (DSAs) by identifying nature- and climate-risks that can become macro-critical in each country; estimate the future impacts of those risks and their potential economic and fiscal losses; and calculate the potential returns on investments to mitigate those risks.
  - Develop scenarios with different levels of resilience investment, and estimate the associated economic and fiscal impacts, to enable EMDCs and their creditors to make informed decisions about investment and lending.
- Credit ratings agencies should also incorporate climate- and nature-related risks and the economic benefits of measures to reduce them in their credit rating analysis, following the lead of the IMF and World Bank DSFs.
- The IMF and World Bank, along with governments, central banks and other financial institutions, should complement their existing macro-economic and macro-financial models with new approaches which better incorporate nature and climate factors, including through the use of stock-flow consistent models.

Second, we recommend reducing debt pressures through debt restructuring or refinancing operations that are linked to nature- and climate-related investment. The macroeconomic conditions and fiscal positions of EMDCs are very diverse. Many have low risk of debt distress. But some face a rising risk of insolvency with sharp rises in debt service costs projected in the short and medium term. Countries in or at high risk of debt distress face the challenge of improving debt sustainability under tightening conditions while securing additional resources for critical climate- and nature-related investments. In these contexts, it is possible to reduce debt pressures in a way that helps cut emissions, boost resilience and conserve and restore nature. We recommend that:

- A country undergoing debt restructuring should be able to receive additional debt relief in return for binding nature- and climate-related commitments that are expected to enhance resilience and stimulate growth, and thus prevent recurring debt crises.
- A country that has high debt levels, but is not yet in a debt crisis (i.e. is not classified by the IMF's DSA as being in debt distress), should be able to undertake debt refinancing to enable nature- and climate-related investments that are expected to enhance resilience and stimulate growth. This would be a 'class-based' debt refinancing initiative for low-income countries (LICs) or LDCs that do not have market access.

Countries in or at high risk of debt distress face the challenge of improving debt sustainability under tightening conditions while securing additional resources for critical climate and nature-related investments.

In both cases the level of debt relief and terms of refinancing provided, and the choice of investments financed through the above measures, should be informed by a nature- and climate-smart DSA conducted by the IMF and/or World Bank, and a country's own Nationally Determined Contribution (NDC), National Adaptation Plan (NAP) and National Biodiversity Strategy and Action Plan (NBSAP).

Third, we recommend scaling proven approaches that tackle debt, nature and climate together. Reducing debt pressures and enhancing domestic resource mobilization are necessary preconditions to enable nature- and climate-related investment in many EMDCs. However, there is widespread recognition that these measures will not be sufficient to enable most countries to shift on to a low-emission, climate-resilient and nature-positive economic path. Additional, affordable finance from international public and private sources will be necessary to close the investment gap. To this end, we encourage EMDCs, creditors, MDBs and donors to build upon the extensive analytical work, policy experimentation and financial innovation over the past decade.

We recommend that:

- Building on the plans set out in the G20 Roadmap Towards Bigger, Better and More Effective MDBs:
  - Shareholders should aim to recapitalize the MDB system to enable the scaling up of lending for low-carbon, climate-resilient and nature-positive development.
  - MDBs should create a new class of adequately priced non-concessional loans over longer maturities (30-40 years) for certain nature- and climate-related investments.
- EMDCs and Development Finance Institutions (DFIs) should be encouraged and supported by the IMF and MDBs to introduce simple forms of contingency to manage debt burdens and borrowing costs in the event of an external shock or stress.
- MDBs, EMDCs, donor governments and civil society organizations should work together to expand the use of debt-for-nature and debt-for-climate swaps and sustainability-linked financing, by developing standardized structures which make them easier and cheaper to transact.

Fourth, we recommend unlocking private capital via new mechanisms and instruments. Even with a concerted push on domestic resource mobilization, new initiatives to relieve debt pressures and rapid scaling of proven instruments, many EMDCs will continue to face an investment gap. Raising and steering both domestic and international private finance towards nature- and climate-related development projects will be key. Private finance is already flowing into many middle-income countries. But it is very uneven by sector and region. New mechanisms are therefore needed, accompanied by efforts by EMDCs themselves to foster an enabling investment environment. We recommend that:

- A special-purpose vehicle, the Finance Facility against Climate Change (F2C2), should be established to unlock private funds through the capital markets by issuing green bonds earmarked for climate-related investments in EMDCs, financed by future aid commitments. This could aim to provide up to $1 trillion in new lending.
- EMDCs and DFIs should work together to develop new equity-like instruments to finance resilience infrastructure, which will better align repayments with real fiscal savings.

New financing mechanisms are therefore needed, accompanied by efforts by EMDCs themselves to foster an enabling investment environment.

Fifth, we recommend equipping EMDCs to manage debt and investment more sustainably. Green restructuring or refinancing will be necessary for some EMDCs to break out of the vicious circle of debt and environmental vulnerabilities. Increasing the flows of international concessional and private finance to EMDCs will be essential to close the investment gap. But ultimately, much of the finance required for sustainable development in EMDCs will have to come from domestic public and private sources. Significant improvements in domestic resource mobilization and much more strategic use of debt instruments will therefore need to be at the heart of most EMDCs' financing strategies. We recommend that:

- EMDCs, particularly those with tax revenues at or below 15% of GDP, should prioritize enhancing domestic resource mobilization to increase the funds available for public goods, including through the phasing out of environmentally harmful subsidies, and by raising the level and expanding the scope of carbon pricing.
- MDBs, the IMF, UN agencies and regional UN economic commissions should work together to create a 'one-stop shop' or single platform for technical assistance, better data and mutual support, to enable governments and international economic institutions to improve the design and management of fiscally and environmentally sustainable debt and investment.

The recommendations proposed in this report are collected together in the Summary Table overleaf.

Summary of Recommendations

No.	Recommendation	Corresponding report chapter and section
	Mainstreaming nature and climate into macroeconomic and fiscal analysis	Chapter 2
1.	The IMF and World Bank should continue to revise their Debt Sustainability Frameworks (DSFs) to better incorporate both climate-related and nature-related risks and the economic benefits of measures to reduce them.	Section 2.1
2.	Credit ratings agencies should also incorporate climate- and nature-related risks and the economic benefits of measures to reduce them in their credit rating analysis, following the lead of the IMF and World Bank DSFs.	Section 2.1
3.	The IMF and World Bank, governments, central banks and other financial institutions should complement their existing macro-economic and macro-financial models with new approaches which better incorporate nature and climate factors, including through the use of stock-flow consistent models.	Section 2.2
	Reducing debt pressures to enable nature- and climate-related investment	Chapter 3
4.	Countries undergoing debt restructuring should be able to receive additional debt relief in return for binding nature- and climate-related commitments that are expected to enhance resilience and stimulate growth and thus prevent recurring debt crises.	Section 3.1
5.	Non-market access EMDCs with high debt service obligations, but which are not yet in a debt crisis, should be able to undertake debt refinancing to enable nature- and climate-related investments	Section 3.2
	Scaling proven instruments to tackle debt, nature and climate together	Chapter 4
6.	Building on the plans set out in the G20 Roadmap Towards Bigger, Better and More Effective MDBs: ● Shareholders should aim to recapitalize the MDB system to enable the scaling up of lending for low-carbon, climate-resilient and nature-positive development. ● MDBs should create a new class of adequately priced non-concessional loans over longer maturities (30-40 years) for certain nature- and climate-related investment.	Section 4.1

No.	Recommendation	Corresponding report chapter and section
7.	MDBs should introduce new simple forms of contingency to manage debt burdens and borrowing costs in the event of an external shock or stress.	Section 4.2
8.	MDBs, EMDCs, donor governments and civil society organizations should work together to expand the use of debt-for-nature and debt-for-climate swaps and sustainability-linked financing, by developing standardized structures which make them easier and cheaper to transact.	Section 4.3
Unlocking private capital via new mechanisms and instruments		Chapter 5
9.	A special-purpose vehicle, the Finance Facility against Climate Change (F2C2), should be established to unlock private funds through the capital markets by issuing green bonds earmarked for climate-related investments in EMDCs, financed by future aid commitments.	Section 5.1
10.	EMDCs and DFIs should work together to develop new equity-like instruments to finance resilience infrastructure, which will better align repayments with real fiscal savings.	Section 5.2
Equipping countries to manage debt and investment more sustainably		Chapter 6
11.	EMDCs, particularly those with tax revenues at or below 15% of GDP, should prioritize enhancing domestic resource mobilization to increase the funds available for public goods, including through the phasing out of environmentally harmful subsidies, and by raising the level and expanding the scope of carbon pricing.	Section 6.1
12.	MDBs, the IMF, UN agencies and regional UN economic commissions should work together to create a 'one-stop shop' or single platform for technical assistance, better data and mutual support, to enable governments and international economic institutions to improve the design and management of fiscally and environmentally sustainable debt and investment.	Section 6.2

1. Introduction

Nature loss and climate change pose an increasingly urgent threat to the prosperity and wellbeing of almost all nations, but particularly EMDCs, where impacts are generally most severe. 2024 was the warmest year on record, and the first calendar year where the global average temperature was 1.5°C above pre-industrial levels.[1] Millions of people endured dangerous heat, record-breaking rainfall, more destructive storms and displacement as a result of climate change.[2] Millions more grappled with the steady degradation and disappearance of the ecosystems they depend on to meet basic needs such as food and fuel. Yet emissions are still rising, and natural capital still being destroyed, bringing potentially catastrophic tipping points ever closer. According to the World Economic Forum, four of the top five global risks identified in a survey of business, government and civil society leaders over a 10-year horizon are environmental (Figure 1).[3]

Responding to the nature and climate crises will require substantial investment in EMDCs. The Independent High-Level Expert Group on Climate Finance (IHLEG) estimates that, to secure their prosperity, EMDCs excluding China need to increase their investment to around $2.4 trillion a year by 2030, an increase of $1.9 trillion above current levels. Roughly a trillion dollars of the total will have to come from external sources.[5] In line with this, the international community set an aspirational goal at COP29 of scaling up international finance for climate action to developing countries to $1.3 trillion a year by 2035.[6]

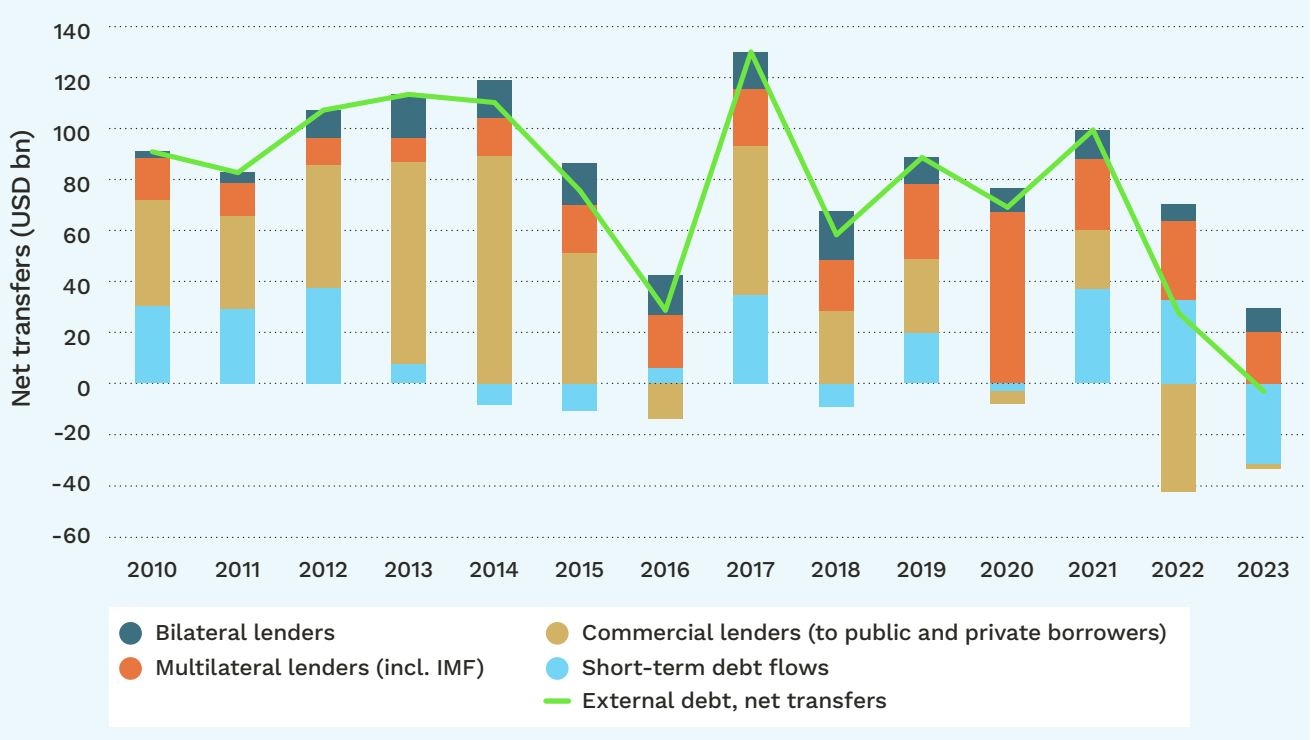
Yet at this crucial moment, capital flows related to lending to EMDCs have turned negative, while the trade and interest rate environment has deteriorated and become more uncertain. Net transfers on external debt – that is to say, disbursements to EMDCs less their servicing on external debt – have been on a downward trend for several years. In 2023, they turned negative for the first time for low and lower-middle income countries: from an average of $90 billion per year in the last decade they fell to $28 billion in 2022 and minus $4 billion in 2023 (Figure 2). The resulting loss of liquidity means that many EMDCs are struggling to meet recurrent spending needs, let alone unlocking

Figure 1. Global risks ranked by severity over a 10-year period

Source: World Economic Forum (2025)[4]

the additional resources necessary to shift to a low-emission, climate-resilient and nature-positive economic model.

Figure 2. Net transfers by creditor type for low and lower-middle income countries (2010-2023)



Source: World Bank (2025)[7]

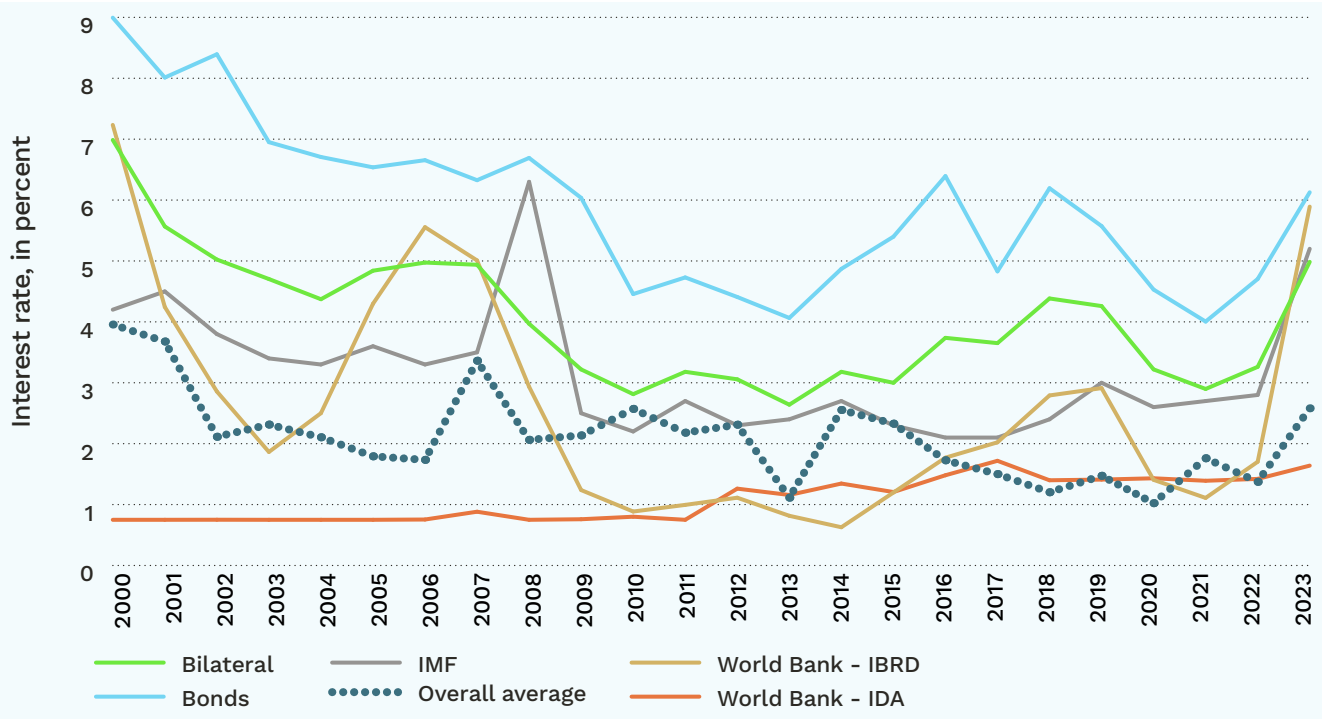
Notes: 'Commercial sources' includes both commercial loans to the public (public and publicly guaranteed) and private non-guaranteed sectors. Multilateral includes multilateral institutions and the IMF. Short-term is computed as the residual quantity.

EMDCs will need purposeful and integrated strategies to mobilize a range of long-term and affordable sources of finance and deploy them based on their complementary strengths.[8] Improved domestic resource mobilization, including the strategic use of national development banks, will be critical to shape investment and unlock additional resources. Throughout the 1990s and 2000s, many (though not all) EMDCs worked hard to improve their public finances through better domestic resource mobilization and fiscal prudence. However, progress stalled in many (though, again, not all) EMDCs in the 2010s following the global financial crisis. On average, low-income countries increased their tax revenues from 10.2% of GDP in 1990 to 13.8% of GDP in 2020; middle-income countries saw an increase from 14.8% to 19.7% over the same period.[9] Further improvements in domestic resource mobilization will be needed to unlock the resources needed for sustainable development, and there are nature- and climate-smart ways of doing so (for example, by reforming environmentally harmful subsidies and introducing carbon pricing). Many EMDCs can also foster greater investment appetite by developing more detailed 'just transition' and sustainable development strategies, translating those strategies into project pipelines, and

implementing policy and institutional reforms to overcome barriers to nature-positive and climate-smart investments.[10]

Yet even with stronger efforts to mobilize domestic resources and create an enabling environment, many EMDCs will not be able to unlock the investment they need without urgent action to address significant pressures on their sovereign debt – insolvency for some, illiquidity for others. High debt burdens and costs can often be partially attributed to fiscal challenges at home, such as low levels of taxation as a proportion of national income, inefficient public investment and ineffective debt management. However, in many cases, structural economic vulnerabilities have combined with external shocks in ways that mean individual EMDCs have had to turn to unsustainable levels of borrowing to meet their citizens' basic needs. The COVID-19 pandemic in particular put pressure on the growth rate of EMDCs and their public finances. After increasing progressively from 2011 to 2020, external debt stocks as a public share of GNI peaked for most EMDCs in 2020 (Figure 4a).[11] Debt stocks have since declined slightly, as difficult fiscal positions have constrained further borrowing. However, after falling steadily during the pre-pandemic decade, interest rates have rebounded as a result of tighter monetary policy in response to global inflation pressures (Figure 3). In 2023, International Development Association (IDA)-eligible (that is, the lowest income) countries spent 13% of their government revenue on external debt service, including 4% of it just on interest payments (Figure 4b); for other EMDCs, these figures were 6% and 2% respectively (Figure 4b).[12]

Figure 3. Interest rates charged on new loans, by creditor group (2000–2023)



Source: Financing for Development Lab using data from World Bank[13] and IMF[i]

i https://www.imf.org/external/np/fin/tad/query.aspx

Debt pressures are most pronounced in the poorest and most credit-constrained countries. In contrast to other EMDCs, the external debt stocks of the lowest-income (IDA-eligible) countries have increased slightly since 2020 (Figure 4a). In addition, the rise in interest rates has led the cost of servicing that debt to soar (variable rate loans constitute 40% of the long-term external debt stock of IDA-eligible countries).[14] External debt servicing as a proportion of government revenue has more than doubled since 2010 in IDA-eligible countries; their interest payments as a proportion of GNI have quadrupled over the same period. Compared to the late 2000s and early 2010s, the poorest and most credit-constrained countries are therefore carrying more debt at a greater cost. 45% of IDA-eligible countries are in debt distress or at high risk of it, while the figure for SIDS is 74%.[ii] Figure 5 shows the evolution over the last ten years of country classifications under the IMF's DSA, and the steady increase in the proportion of countries classified as in debt distress or at high risk of debt distress.

Figure 4a. External debt stock (public and publicly guaranteed) (% of GNI) (1995–2023)

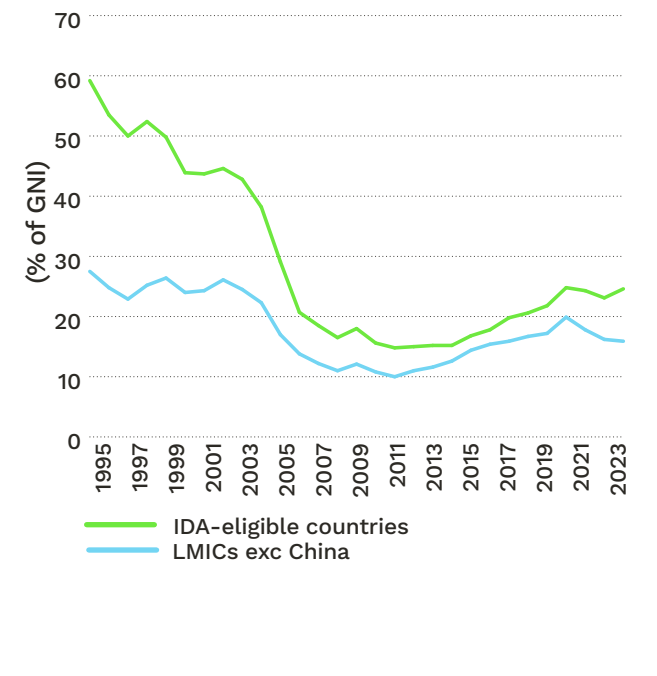
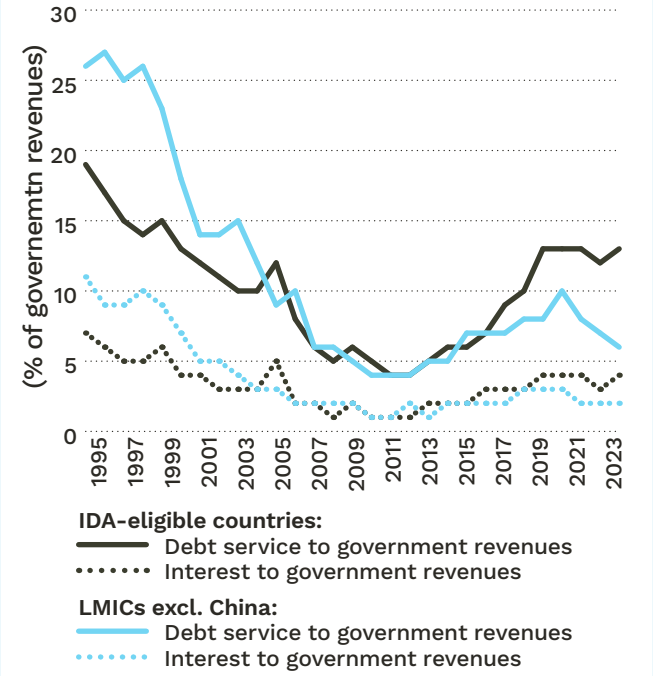


Figure 4b. Interest payments and debt service on public and publicly guaranteed external debt, in percent of revenues (1995–2023)

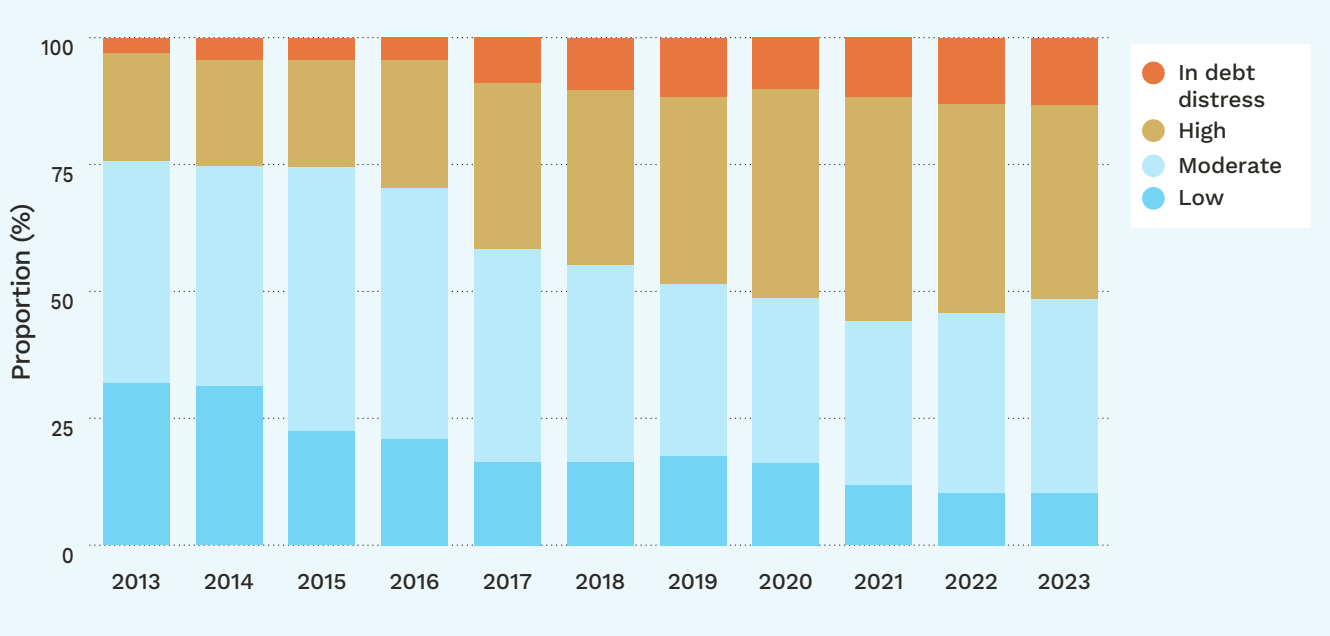


Source: World Bank (2024)[15]

The Independent Expert Group on Debt, Nature and Climate was established in response to this 'triple crisis' of debt pressures, nature loss and climate impacts experienced by many countries. Commissioned by the governments of Colombia, France, Germany and Kenya in the context of the Paris Pact for People and the Planet Summit of 2023, we were tasked with examining how sovereign debt can become more sustainable, both fiscally and environmentally.

ii Based on the IMF's List of LIC DSAs for PRGT-Eligible Countries, as of February 28, 2025. (https://www.imf.org/external/pubs/ft/dsa/dsalist.pdf)

Figure 5. Country classification under the IMF's Debt Sustainability Analysis (2013-2023)

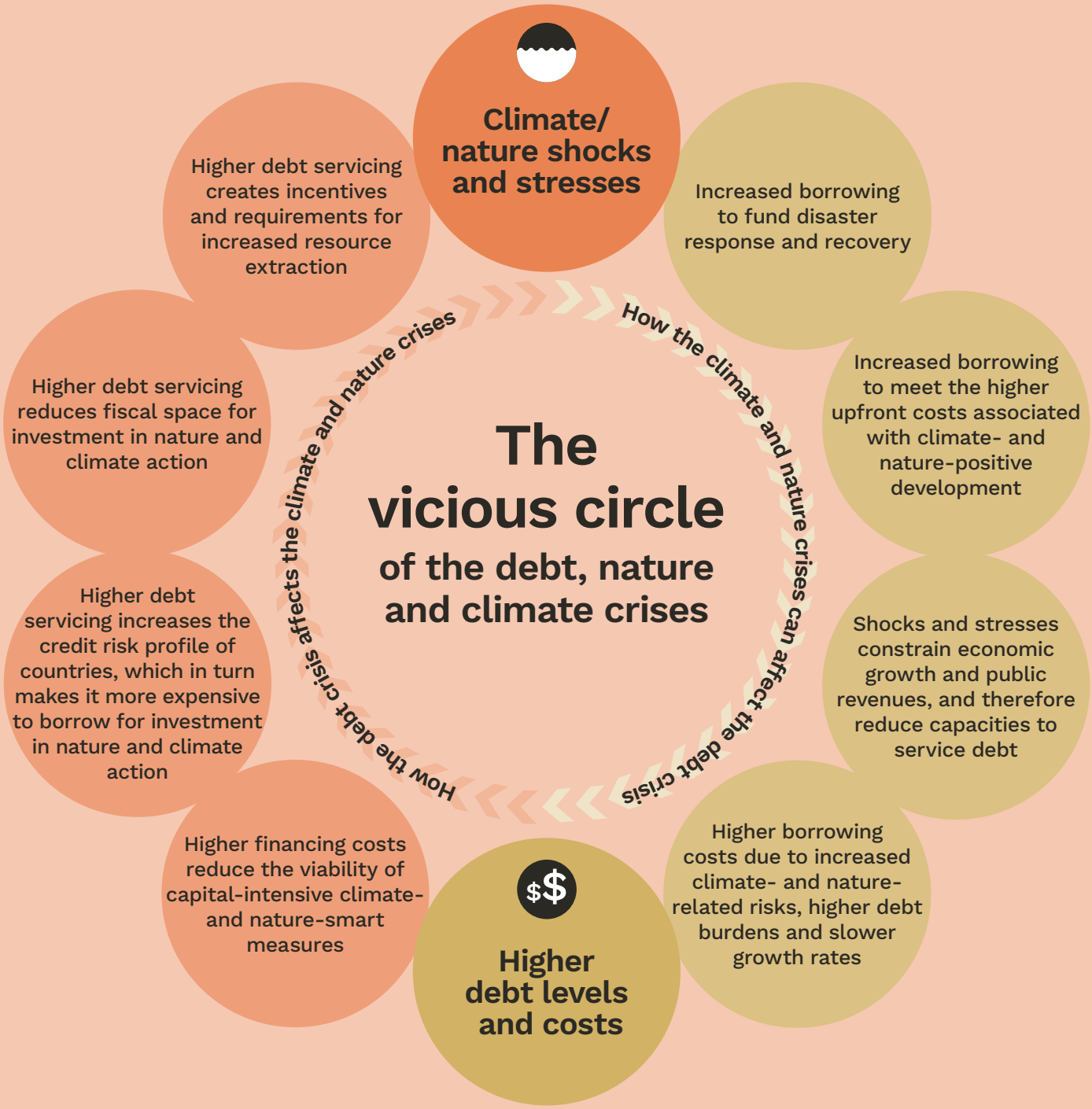


Source: IMF (2024).

In our Interim Report, we articulated how the debt, climate and nature crises are coming together in a vicious circle for a growing number of countries (Figure 6a). Increasingly frequent and severe environmental shocks and stresses are forcing many countries to borrow more to finance disaster response and recovery. Those same shocks and stresses constrain economic growth and public revenues, reducing fiscal headroom to pursue sustainable development. Climate- and nature-related risks, higher debt burdens and slower growth all also serve to make borrowing more expensive, which makes meeting the higher incremental costs of climate-smart and nature-positive development even harder. Thus, many EMDCs are becoming trapped in a vicious circle of environmental degradation and vulnerability. The debt crisis is most stark, and exposure to environmental risks most severe, among LDCs and SIDS, which account for only a tiny fraction of the consumption and emissions driving nature loss and climate change.

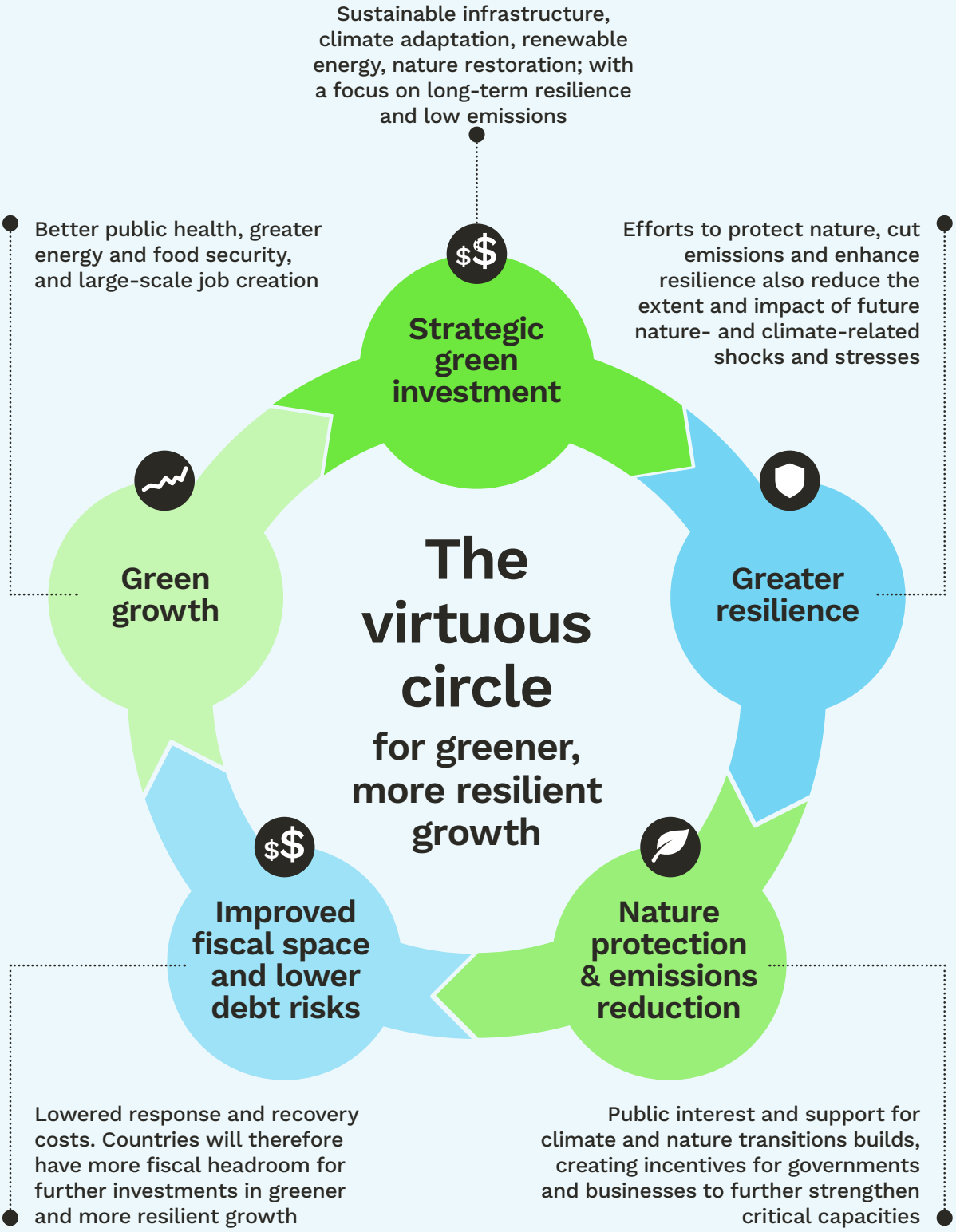
Our Interim Report also laid out an alternative development model: a virtuous circle of green and resilient economic growth (Figure 6b). Sustainable infrastructure investment, technological innovation, improved resource productivity and large-scale environmental conservation and restoration could drive strong, balanced and resilient development while sustaining the ecosystem services on which economies and societies depend. However, shifting to a virtuous circle implies a profound change in those economies and societies, with transition risks and tradeoffs in key sectors. It will also demand a step change in the quantity and quality of financing. Such a step change will only be possible through concerted efforts by EMDCs themselves, their creditors and the international financial institutions.

Figure 6a. The vicious circle



Source: Expert Review on Debt, Nature and Climate

Figure 6b. The virtuous circle

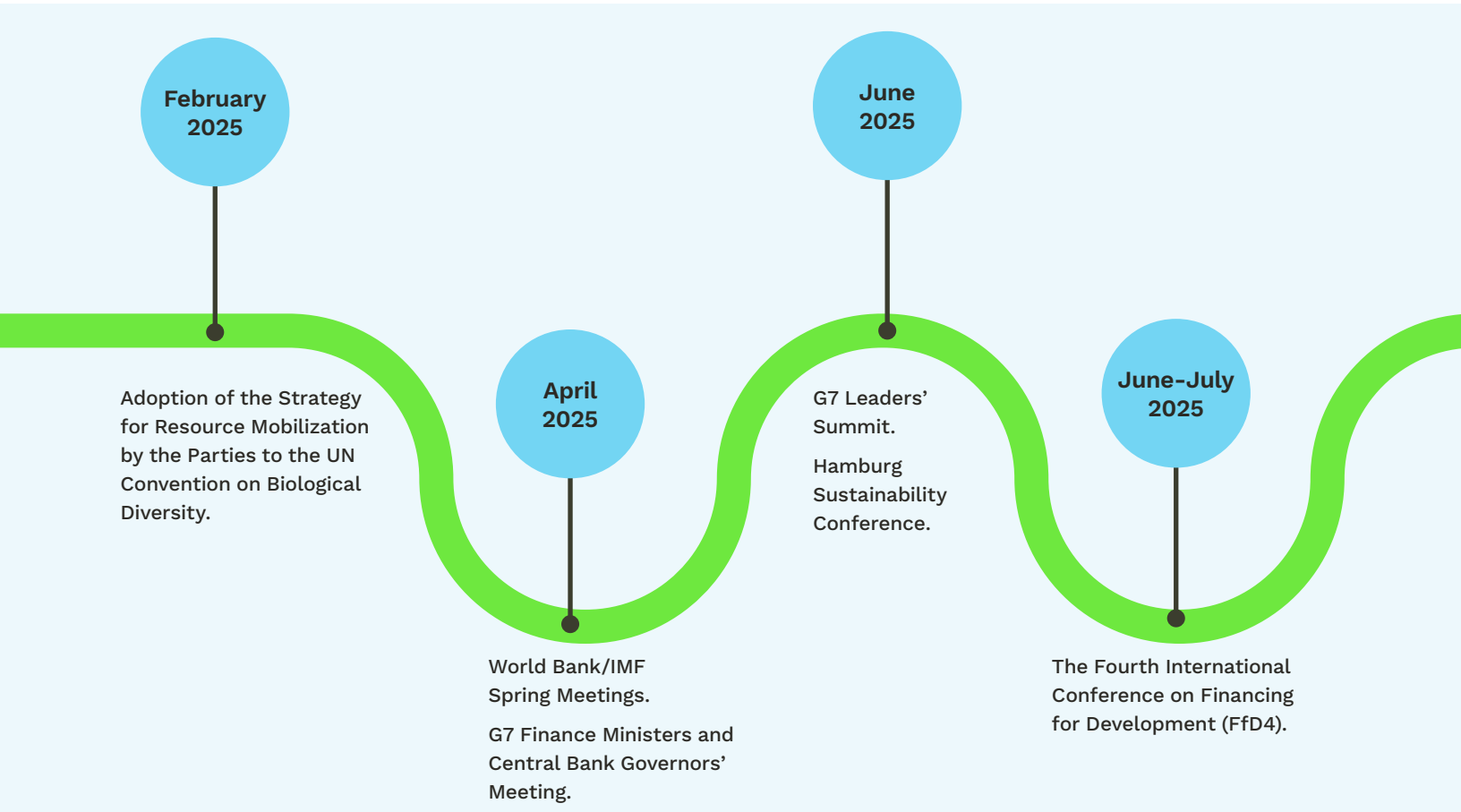


Source: Expert Review on Debt, Nature and Climate

In this Final Report, we offer a suite of recommendations to break the vicious circle and shift to a virtuous circle. Our recommendations are intended to support borrower countries, their creditors and the multilateral processes working to unlock finance for sustainable development in this critical decade of action. (See Figure 7 for key 'moments' this year). Our recommendations fall into five groups:

- Mainstreaming nature and climate into macroeconomic and fiscal analysis.
- Reducing debt pressures to enable nature- and climate-related investment.
- Scaling proven approaches that address debt, nature and climate together.
- Unlocking private capital via new mechanisms and instruments.
- Equipping countries to manage debt more sustainably.

Figure 7. Key moments in 2025 to unlock finance for sustainable development



September 2025

Africa Climate Summit.

October 2025

World Bank/IMF Annual Meetings.

G20 Finance Ministers and Central Bank Governors' Meeting.

November 2025

COP30: Presentation of the Baku to Belém Roadmap commissioned by the Parties to the UN Framework Convention on Climate Change.

G20 Leaders' Summit.

2. Mainstreaming nature and climate into macroeconomic and fiscal analysis

Recommendations:

1. The IMF and World Bank should continue to revise their Debt Sustainability Frameworks (DSFs) to better incorporate both climate-related and nature-related risks and the economic benefits of measures to reduce them. In particular we recommend that they:
   - Strengthen Debt Sustainability Analyses (DSAs) by identifying nature- and climate-related risks that can become macro-critical in each country; estimate the future impacts of those risks and their potential economic and fiscal losses; and calculate the potential returns of investments to mitigate those risks.
   - Develop scenarios with different levels of resilience investment, and estimate the associated economic and fiscal impacts, to enable EMDCs and their creditors to make informed decisions about investment and lending.
2. Credit ratings agencies should also incorporate climate- and nature-related risks and the economic benefits of measures to reduce them in their credit rating analysis, following the lead of the IMF and World Bank DSFs.
3. The IMF and World Bank, along with governments, central banks and other financial institutions, should complement their existing macro-economic and macro-financial models with new approaches which better incorporate nature and climate factors, including through the use of stock-flow consistent models.

Over recent decades, a rich body of evidence has been developed on the critical relationships between economic development, nature loss and climate impacts. Through the scientific work synthesized by the Intergovernmental Panel on Climate Change and the Intergovernmental Platform on Biodiversity and Ecosystem Services, and in the agreements made under the UN Framework Convention on Climate Change and the UN Convention on Biological Diversity, the international community has recognized that nature loss and climate change are already having a detrimental impact on economic growth and human wellbeing, and that the impacts will become both more severe and more frequent in the future.[16]

The international community has recognized that nature loss and climate change are already having a detrimental impact on economic growth and human wellbeing.

As environmental and climate stresses have mounted in recent years, the foundational economic characteristics of 'natural capital' have become more widely recognized.[17] Human societies and economies are dependent on the natural environment to provide resources, assimilate wastes and provide critical life-support services, such as terrestrial water recycling and precipitation, soil formation, pollination, nutrient cycling and climatic stability. If these are critically impaired, earth systems may reach 'tipping points' where environmental conditions undergo dramatic and irreversible change, with severe implications for economic productivity and human wellbeing.[18] Maintaining at least minimum stocks of natural capital (notably water, soil, forests and biodiversity) and halting climate change have therefore become economic imperatives.

In this sense, earth systems and climatic stability can be regarded as a form of economic infrastructure: the platform on which all other economic activity is based. It is widely recognized in economic theory and policy-making that infrastructure investment is a prerequisite for growth and development. Road and rail transport, electricity generation and grids, telecommunications and water and wastewater systems provide the foundations on which a modern economy is built. Investment in them enhances productivity and increases output. Infrastructure investment is therefore a priority for almost all governments. There is a good case for many investments in natural systems and climatic stability to be regarded in a similar light. As with physical infrastructure, maintenance of natural assets is also necessary to avoid their depreciation.

Earth systems and climatic stability can be regarded as a form of economic infrastructure: the platform on which all other economic activity is based.

Indeed, measures that enhance nature protection and reduce climate risks often complement or substitute for conventional or 'grey' economic infrastructure. For instance, wetlands regulate floodwaters like stormwater drains. Mangroves and coral reefs can absorb storm surges like sea walls. Urban trees can protect buildings and transport infrastructure by mitigating extreme heat and facilitating rainfall precipitation. As with 'grey' infrastructure, 'green' and 'blue' infrastructure can sometimes generate monetary returns; in other cases, they are public goods that need public support.[iii] Many nature- and climate-related investments should therefore be regarded and prioritized as a foundation or prerequisite for long-term economic growth and development; without them, future growth rates will be lower and the economy more likely to experience periodic loss and damage.

iii Holistic cost-benefit analyses can reflect some of the economic benefits, for example by taking into account reduced health expenditure from improved air quality. Innovative financing instruments can also help to capture diffuse returns, for example through land value capture instruments to ensure the state benefits from the higher land prices associated with access to quality green and blue space.

Around the world, economic, fiscal and financial decision-makers are beginning to recognize how nature and climate considerations should inform their decisions. This is evidenced by the broad membership and active programmes of networks such as the Coalition of Finance Ministers for Climate Action, the Network of Central Banks and Financial Supervisors for Greening the Financial System and the Institutional Investors Group on Climate Change.

But there is more to do to properly incorporate nature and climate benefits and risks into the models and tools of economic, financial and fiscal decision-makers. Economic forecasts do not typically include either the rising costs associated with more frequent and severe climate and environmental risks, or the prospective benefits associated with mitigating those costs through nature- and climate-related investments. The short time horizon of most macroeconomic models creates further misleading signals: while the depletion of natural capital (for instance, by overfishing or deforestation) can show up as short-term gains to gross national income, the longer-term impact on productivity, and the increasing costs associated with environmental shocks and stresses, will generally be neglected.

Incorporating nature and climate risks and benefits into economic models is not easy, but failure to do so leads decision-makers to seriously undervalue nature- and climate-related investment. When economic assessments do not properly account for the value of earth systems and natural capital, and do not fully capture the likely losses from environmental damage and climate impacts, it is almost inevitable that the economic returns of nature- and climate-related measures will be underestimated. The policy guidance arising from standard macroeconomic frameworks and models will therefore effectively penalize such measures, risking increased vulnerability to climate change and nature loss. This is not to deny that the trade-offs between short-term costs and long-term benefits are real. Nature conservation and climate action can be costly today, with much of the gain experienced later. The economic beneficiaries may also be different. But this makes it more important that macroeconomic frameworks and models capture these values, so that informed policy and investment decisions can be made.

Incorporating nature and climate risks and benefits into economic models is not easy, but failure to do so leads decision-makers to seriously undervalue nature- and climate-related investment.

Better incorporating nature and climate risks into standard economic analysis, along with the economic and wider benefits of climate and nature policies and investments, should have two critical impacts on investment decisions and financing strategies.

First, it should incentivize more nature- and climate-related investments that can support sustained and resilient growth. As the economic benefits of such investments are better understood, they are likely to become more of a priority in policy-making, including for international concessional finance. While trade-offs between short- and long-term considerations will always be present, recognition of the benefits to longer-term economic growth, along with the lowered risks of environmental damage and shock, should create incentives for governments to take action, and for finance to be made available. Such action should improve their creditworthiness. Moreover, the more direct involvement of ministries of finance in the design and execution of investments in nature and climate resilience is likely to improve the quality and execution of the underpinning investment plans.

Second, it should lead to a more comprehensive assessment of sovereign risk. It is important that both borrower countries and their creditors are fully informed when they make fiscal and financial decisions. Countries that are particularly vulnerable to the impacts of climate change and nature loss – and which do not make countervailing investments in adaptation and nature protection – may find their economic growth forecasts are downgraded as future risks become clearer. In turn, this will likely affect the assessments of their debt sustainability made by the IMF and World Bank and by credit ratings agencies. This could lead to the vicious circle set out in our Interim Report, in which lower forecasts for future growth impair a country's ability to service debt, leading to higher borrowing costs as creditors recognize greater risks, reducing fiscal space for investment still further. Avoiding the vicious circle outcome should provide a further incentive for countries to invest in climate adaptation and nature protection.

In this chapter we show how nature and climate should and can be included properly in macroeconomic and fiscal analysis, and therefore decision-making, in two key areas:

- The Debt Sustainability Frameworks (DSFs) used by the IMF and World Bank to assess borrowing capacity and risks.
- The macro-economic and macro-financial models used by the IMF and World Bank, and by economic and finance ministries, central banks and financial supervisors and others, to analyze growth prospects and financial risks.

These are closely related, since the macro-economic and macro-financial models used by the IMF and World Bank underpin their DSFs. It is critical therefore that revisions are made in both of these areas.

Avoiding the vicious circle outcome should provide a further incentive for countries to invest in climate adaptation and nature protection.

2.1 Reforming the IMF and World Bank Debt Sustainability Frameworks

Debt Sustainability Frameworks (DSFs) are essential to assess a country's fiscal stability. They are a key component of the tools used by the IMF to fulfil its surveillance function by predicting the probability of debt distress. The results determine the country's ability to borrow from international financial institutions (IFIs) and many bilateral lenders: a country where debt is deemed 'unsustainable' will in general not be able to access loans from multilateral institutions (though highly concessional finance may still be available). There are two frameworks. The Debt Sustainability Framework for Low Income Countries (LIC-DSF) is jointly led by the IMF and World Bank, and applied over a 20-year time horizon to countries that rely mostly on concessional financing. The Sovereign Risk and Debt Sustainability Framework for Market Access Countries (MAC-SRDSF) is led by the IMF and applied over a 30-year time horizon to countries that have significant access to the bond markets: that is, advanced economies and most emerging markets. Although many small island developing states (SIDS) are not classified as low income, in practice most SIDS, like the least developed countries (LDCs), have little to no access to markets and are not able to attract private finance, creating more demands on official (bilateral and multilateral) sources.

Nature loss and climate change impacts are going to have profound impacts on EMDCs' fiscal stability.

Nature loss and climate change impacts are going to have profound impacts on EMDCs' fiscal stability. While explicit mention of climate shocks in credit rating actions is rare, environmental catastrophes and risks are occasionally mentioned as affecting underlying macroeconomic dynamics such as growth and primary balances.[19] Looking forward, statistical simulations of credit ratings suggest that, under a high emissions scenario, EMDCs would suffer from significant downgrades close to one notch[iv] on average by 2050 due to physical climate risks.[20] Adding transition risk (the risks arising from policy changes) compounds the effect on credit ratings and increases this to more than a 3 notch downgrade.[21]

The IMF and World Bank have begun to systematically include environmental considerations in their Debt Sustainability Analyses (DSAs). Their 2024 Supplementary Guidance note provides guidance to IMF and World Bank staff on how to account for climate-related risks, investments and policies in a more structured way within the LIC-DSF, building on guidance issued in 2017 and 2018. The MAC-SRDSF has since 2022 included a climate module for countries deemed most climate vulnerable, which projects future spending due to mitigation or adaptation, as well as a disaster shock scenario.

iv One notch is about 5% of the scale

Our Interim Report offered three recommendations to the IMF and World Bank:

Incorporate climate-related risks and measures to reduce them.

DSAs should transparently and consistently incorporate the projected impacts of climate change, including both rapid-onset shocks and slow-onset stresses, in their underlying baseline macroeconomic and fiscal projections. The analysis should encompass higher potential liquidity risks stemming from environmental shocks, as well as solvency risks stemming from a deterioration in forecast economic growth rates and fiscal positions. The analysis should also account for the likely fiscal savings and greater economic stability associated with pre-arranged disaster risk financing, investments in resilience and other climate actions.

Incorporate nature-related risks and measures to reduce them.

DSAs should start to incorporate the risks associated with nature loss in their underlying baseline macroeconomic and fiscal projections. The analysis should also account for the economic and fiscal benefits associated with nature protection and recovery. Improved data collection and modelling will be necessary to do so robustly.

Make greater use of different environmental and financing scenarios.

DSAs should make more extensive use of different climate and nature scenarios, including ones with early and ambitious investments in resilience, nature protection and avoided emissions. These scenarios could illustrate how different financing sources and terms for those investments may affect debt sustainability over various time horizons. In data-poor contexts, an alternative approach might be to put a lower weight on debt incurred for verified climate- and nature-related investments.

We welcome the progress made by the IMF and the World Bank in this field over recent years. But further work will be needed – and in a transparent and rigorous manner – to ensure credibility with, and thereby buy-in from, borrowing countries and their creditors.

Considerable effort has been put into better macro-financial modelling, including by international institutions, to incorporate the effects of climate change and biodiversity loss on financial balance sheets and stability.

This current report builds on these recommendations but adds specificity by going from the 'what' to the 'how'. Both IFIs and countries themselves should make macro-fiscal programming around climate and nature risks a priority. The DSA is an obvious starting point. Considerable effort has been put into better macro-financial modelling, including by international institutions, to incorporate the effects of climate change and biodiversity loss on financial balance sheets and stability, for example as part of Financial Stability Assessment Plans conducted by the IMF.[22] Complementing those efforts with parallel macro-fiscal modelling is vital to assess the fiscal impacts of climate change, and inform the decisions of finance ministries: macro-fiscal projections form the basis of all DSAs. In Section 2.2 we discuss how such modelling, including that done by the IMF and World Bank, can be improved. In the following two sections we elaborate on the recommendations in our Interim Report. Section 2.1.1 considers methodologies to assess climate- and nature-related risks and to integrate those risks into DSAs. Section 2.1.2 considers what kinds of scenarios should be developed.

2.1.1 Drawing on improved scientific and financial modelling

The analytical foundations to assess climate-related risks have progressed significantly. The specific hazards and needs differ among countries, requiring bespoke risk assessments and distinct investment strategies to address them. Water insecurity might be macro-critical in one country, while flooding and storm surge are macro-critical in another. There is much work under way to more robustly map vulnerabilities and chart climate-resilient development paths, both at the national level in Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs), Just Energy Transition Investment Plans (JETIPs), and so on, and at international level, for instance, in the World Bank's Country Climate and Development Reports and the scenarios developed under the auspices of the Network for Greening the Financial System.

While there has been some progress in considering climate risks, analytical work on nature-related risks is less developed and such risks are not currently considered in DSAs. Yet the analyses that have been conducted suggest that, for a significant number of countries, they could potentially be larger than standard macroeconomic shocks considered by current DSAs.[23]

DSAs should ideally include:

- A detailed list of the nature- and climate-related risks that could pose critical macro-financial risks.
- Assessment of those risks, conditioned to scenarios, and associated estimates of potential economic and fiscal losses.
- Appropriate measures to mitigate those risks, and their economic costs and benefits.

We acknowledge that a thorough consideration of nature loss and climate impacts in economic projections is likely to reduce forecasts of medium- and long-term growth prospects, increase expectations of volatility, and lead to projections of larger future public deficits. These effects could worsen creditworthiness, and lead to a deterioration in a country's DSA. But they would reflect reality more accurately. At the same time, such an analysis would highlight that policies and investments to enhance resilience have high returns, even if the profile and value of those returns over time is uncertain.

A simple starting point would be to define a limited number of key performance indicators relating to country-specific, macro-critical nature- and climate-related risks that can be straightforwardly tracked. For some SIDS, for example, indicators relating to the extent and health of coral reefs might be appropriate, given their importance in shoreline protection, revenues from fishing and tourism, and food security. Indicators relating to precipitation and irrigation might be more useful for LICs where a high proportion of the economy and the population depend on agriculture. Tracking such material indicators would provide early signals about possible future economic slowdowns and fiscal needs, and consequently debt sustainability, as well as national efforts to mitigate those risks through (for example) marine protection or expanded irrigation. Indicators need to be carefully chosen given that EMDCs, especially smaller and lower-income countries, are often data-poor; data that can be independently collected and verified (such as satellite imagery of forest or mangrove cover) may therefore be attractive.

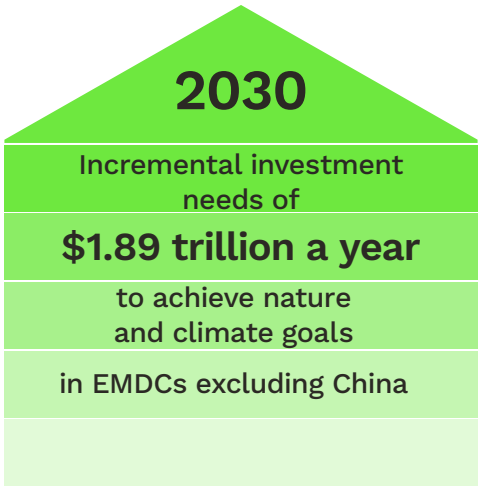
Tracking environmental indicators would provide early signals about possible future economic slowdowns and fiscal needs, and consequently debt sustainability, as well as national efforts to mitigate those risks through (for example) marine protection or expanded irrigation.

DSAs can use those indicators to illustrate different growth scenarios, i.e. varying the severity and frequency of projected environmental shocks and the levels of, and returns on, resilience investment. Such an approach should build up the climate information architecture necessary to give a sense of the opportunities for countries to bolster debt sustainability by improving climate sustainability.[24]

2.1.2 Developing resilience scenarios

A DSA should help borrower countries and their creditors better anticipate future risks, and thereby make informed financing decisions. A nature- and climate-smart DSA therefore would ideally lay out perhaps two scenarios with different levels and types of resilience investments, with the likely implications for that country's economic growth and fiscal position. Such information could indicate the probable returns on adaptation investment, enabling EMDC governments to make informed borrowing decisions and creditors to tailor their financing terms accordingly.

A first step would be to estimate country-level investment needs in nature and climate resilience. There is a large body of work estimating the incremental investment needs associated with achieving nature and climate goals. The IHLEG estimates incremental investment needs of $1.89 trillion a year by 2030 in EMDCs excluding China.[25] Such analyses of the costs of macro-critical resilience interventions need to be conducted at the national level to enable finance ministries to make more informed decisions, including how to collect and allocate domestic public resources (see Section 6.1), the level and purpose of borrowing and the opportunity costs of resilience investments.



Ideally, the DSA could provide two alternative country-level scenarios, as proposed in our Interim Report. Different scenarios can be defined with various levels of resilience investments and corresponding estimates of their impact on economic growth rates, exposure to exogenous shocks and consequent long-term risks of debt distress. The inclusion of 'high ambition' scenarios would be important, where initial investments in resilience would be higher, increasing risks of higher debt at first, but where long-term risks would be likely to decrease relative to a 'low ambition' baseline, where the costs of environmental shocks and stresses would be higher.

Considerable progress has been made in recent years on how to include climate change impacts in economic models.

Focusing on vulnerability alone will act as a brake on investments that could sustain and enhance resilience. DSAs need to track not gross risk exposure, but net exposure by taking resilience measures into account.

We therefore recommend scenario-building to model the economic and fiscal impacts of different levels of resilience investment. The benefits from policies and investments to improve resilience are often uncertain and have long horizons, so they tend to be discounted in DSAs. The development of credible scenarios will allow policy-makers to determine appropriate levels of nature- and climate-related investment to secure long-term debt sustainability and with full awareness of opportunity costs. The different scenarios will similarly allow creditors to tailor their financing terms based on a more robust understanding of economic and fiscal risks, as well as the benefits associated with measures to manage those risks. Ideally, both borrowers and creditors will benefit: borrower countries introducing

ambitious adaptation policies and investments may be able to access finance on better terms because creditors have greater confidence in their ability to service their debts.

In the process of building these scenarios, it would also be critical to clarify and disclose the global climate scenarios on which they are based. The level of ambition of resilience investment at country-level is entirely dependent on whether the country's needs are assessed on the basis of a net-zero by 2050 climate scenario, or on the basis of a continuation of current policies. The work done in this area by the Network for Greening the Financial System (NGFS), which introduced a new damage function in 2024 to assess physical risk associated with climate change, could provide a helpful starting point.[26]

We recommend that credit rating agencies also take into account the enhanced nature- and climate-smart DSAs and associated scenarios, and the levels of resilience investments that EMDCs are choosing to make. Creditors are seeking a better understanding of borrowers' exposure to nature- and climate-related risks. Credit rating agencies can respond to this demand by looking at the country-level macro-critical risks identified by the IMF and World Bank, the levels of resilience investment that the prospective borrower is proposing, and the projected economic and fiscal benefits associated with that investment. It is important for rating agencies to assign meaningful long-term ratings when they routinely rate bonds with an original tenor of sometimes several decades. In this way, they can more holistically support creditors to assess future risks and tailor their financing terms accordingly. In doing this, the credit ratings agencies should follow the lead provided by the revised IMF and World Bank DSFs.

2.2 Improving the integration of climate and nature into macro-financial models

Most of the macro-economic and macro-financial models used by governments, central banks and economic institutions for the purposes of forecasting and policy assessment do not include climate and nature risks or mitigating investments. This means that neither the risks arising from climate change and nature loss, nor the benefits of investment to reduce these risks, are likely to be taken into account in much economic and financial decision-making.

Considerable progress has been made in recent years, however, on how to include climate change impacts in economic models. The NGFS, a global group of 144 central banks and financial supervisory institutions formed in 2017, has been at the forefront of this field.[27] Less work has been done on the modelling of nature impacts (both positive and negative). This is partly because nature loss and conservation have been less of a policy priority, and partly because modelling is more difficult: ecosystems are very diverse, with often complex, locally-specific relationships with human economic activities. Good data is often not available. But this field too has seen important recent advances.[28]

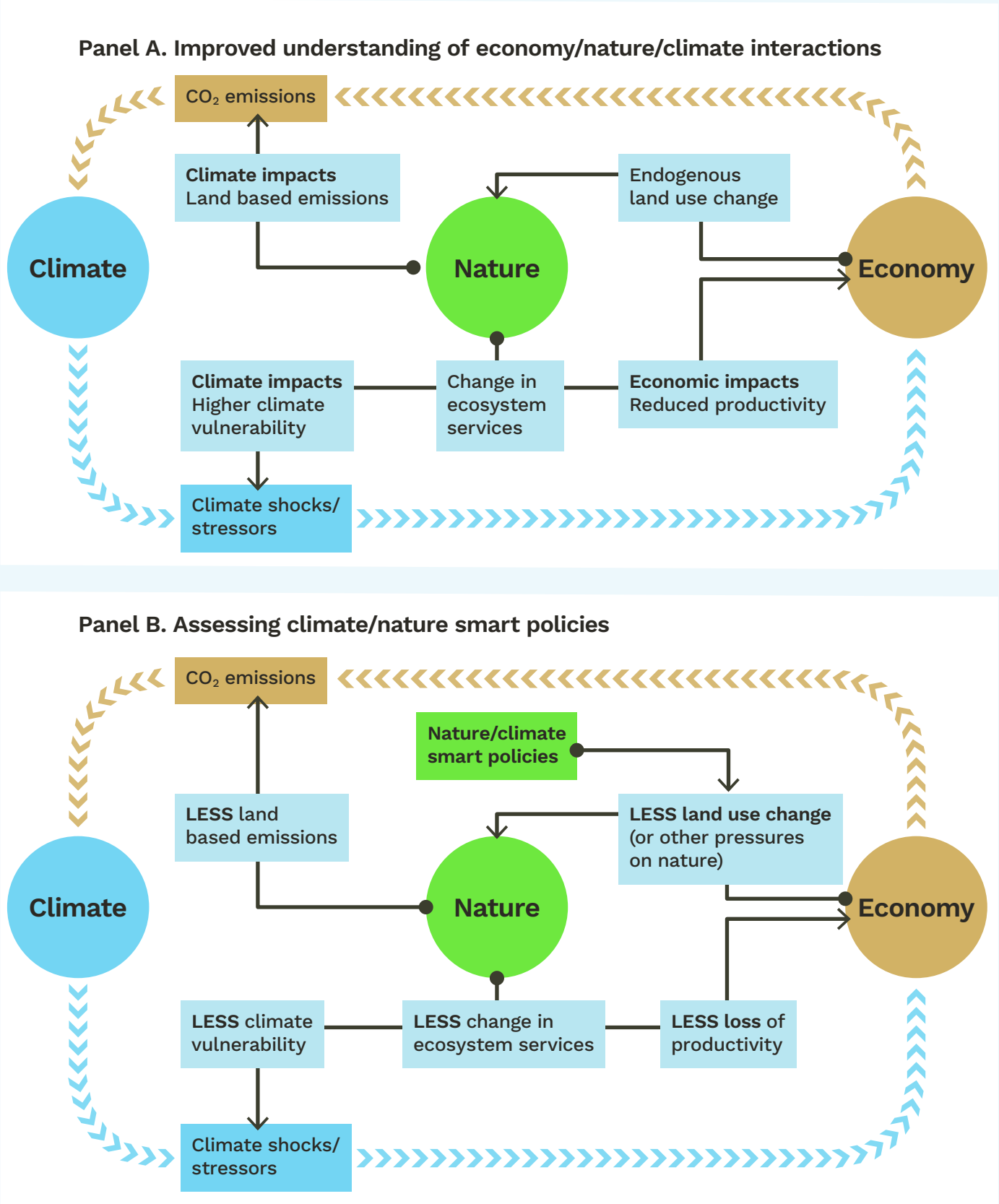
To fully incorporate the economic risks of climate change and nature loss requires tackling a number of modelling challenges. These risks may occur over long periods and are subject to considerable uncertainty. Some are non linear and subject to 'tipping points', where abrupt and major changes to environmental conditions occur.[29] These characteristics pose a number of challenges for conventional macro-financial models.[v] Important issues include:[30]

- Underestimating the effects and persistence of severe climate and nature shocks. The assumption that economic actors have 'rational expectations' used in many models mean that economies are assumed to recover quickly from shocks, which are taken to be anticipated in advance and therefore limited. But this is not what is actually observed in countries that have experienced such shocks, particularly in LICs and SIDS where extreme weather events can have major impacts on national income and borrowing levels. In fact, economic actors tend to underestimate the magnitude and distributive effects of environmental shocks, particularly where the effects are 'compounded' (for example where a flood not only directly causes damage to property but also causes power outages that disrupt business activity).[31]
- Under-representing the financial sector, its expectations and perceptions of risk. Many macro-financial models either do not include, or use very simple assumptions about, the financial sector, seeing it as a mere conduit of savings to investment. But financiers' perception of risk is affected by the socio-political context, and in turn it hugely shapes the cost of borrowing, with implications for economic recovery and debt sustainability.[32]
- Failing to capture risk transmission channels and their complexity. Most macro-financial models struggle to capture the inherently complex interactions between nature loss and climate change impacts on the one hand, and wider economic and social dynamics (such as public health and population movements) on the other. This may leave nature and climate risks underpriced, and the benefits of nature- and climate-related investments undervalued.[33]

These limitations create a strong case for economic, fiscal and financial decision-makers to use complementary models which are more able to capture the specific characteristics of climate and nature impacts (Figure 8). Both the IMF and the World Bank now attempt to do this, to some extent, in their macroeconomic modelling of national economies. Under its current procedures the IMF only considers climate impacts that affect a country's core macroeconomic variables (GDP, balance of payments, fiscal balances, etc.). It does this using an array of tools which seek to capture both slow-onset changes (such as temperature, precipitation shifts and sea level rise) and the probabilistic risk of extreme weather events. The impacts of government climate policies are also estimated. The outputs of these models are then brought together with the IMF's standard macro-economic and macro-fiscal models to generate more climate-sensitive economic forecasts, along with analysis of a country's debt dynamics.

v By 'conventional' macroeconomic models we mean Computer General Equilibrium (CGE) and Dynamic Stochastic General Equilibrium (DGSE) models, which use large sets of simultaneous microeconomic equations to describe the relationships between economic agents and sectors.

Figure 8. Stylized relationships for the inclusion of nature and climate in macroeconomic models



Source: World Bank (2024)[34]

Whereas the IMF currently only considers factors related to climate change, not nature loss, the World Bank is also now seeking to incorporate certain ecosystem services (such as forestry, pollination and flood reduction) in its macroeconomic modelling.[35] It plans to expand this analysis as the underlying data sources are developed. The World Bank is particularly focused on estimating the economic impacts of climate mitigation and adaptation policies.

These are welcome developments, particularly in providing more realistic baselines for DSAs. These baselines should be explicit about the extent to which nature and climate risks are accounted for. We encourage both the IMF and World Bank to continue to develop their work in these fields, with support from the NGFS. The IMF in particular needs to include nature-related risks and benefits as well as climate-related ones.

We especially recommend that governments, central banks and international financial institutions explore the new generation of Stock-Flow Consistent (SFC) models. These are models based on a rigorous accounting framework to ensure a comprehensive integration of all the flows and stocks in an economy. Unlike conventional macroeconomic models, SFC models do not assume rational expectations or that the economy tends to a single equilibrium, and they better capture the transmission of shocks across agents and sectors. They include the financial sector, financial markets and the endogenous creation of credit, so they can model the interactions between fiscal, monetary and macroprudential policies.[36]

These features make SFC models particularly suitable for making a comprehensive assessment of the magnitude of nature and climate impacts in the economy and finance, and the potential persistence of losses. They are able to analyze the non-linear, deeply uncertain and endogenous nature of climate risks; identify and trace transmission channels from nature and climate risk to fiscal accounts and sovereign debt (considering direct, indirect and 'cascading' impacts); and can provide endogenously generated, scenario-contingent GDP growth projections that address climate risk.[37]

A growing number of development finance institutions (DFIs), central banks and financial supervisors have started using SFC models for the assessment of climate risks in the economy and financial system. The EIRIN model (see Annex 1), for example, has recently been used by the World Bank for the analysis of the macro-financial implications of the compounding of COVID-19 and climate physical risks in the Caribbean and South East Asia; and is being used by the NGFS in the development of its short-term climate scenarios.[38] We see significant value in such models being used by a wide range of economic actors, particularly governments, central banks and other financial supervisors, the IMF, World Bank and other DFIs.

Given the fundamental role played by macro-economic and macro-financial modelling in DSAs, and in wider economic and financial decision-making, ensuring that they properly reflect the changing climate, nature and environmental conditions in which modern economies are now embedded has become a critical necessity.

3. Reducing debt pressures to enable nature- and climate-smart investment

Recommendations:

4. Countries undergoing debt restructuring should be able to receive additional debt relief in return for binding nature- and climate-related commitments that are expected to enhance resilience and stimulate growth, and thus prevent recurring debt crises.
5. EMDCs with high debt service obligations, but which are not yet in a debt crisis, should be able to undertake debt refinancing to enable nature- and climate-related investments as part of a comprehensive growth-inducing/debt-reducing policy package. This would involve a 'class-based' debt refinancing initiative for LICs or LDCs that do not have market access.

The level of debt relief and terms of refinancing provided, and the choice of investments financed through the above measures, should be informed by a nature- and climate-smart DSA conducted by the IMF and/or the World Bank, and by a country's own Nationally Determined Contribution (NDC), National Adaptation Plan (NAP) and National Biodiversity Strategy and Action Plan (NBSAP).

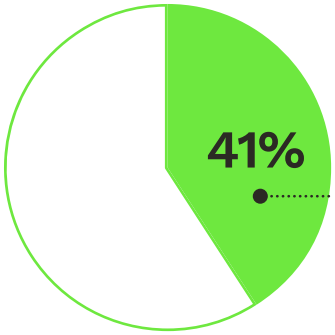
As described in the introduction, a large number of EMDCs face pressure on their sovereign debt. Some are facing insolvency, while many are grappling with illiquidity. As shown in Figure 2, aggregate net capital flows to low-and middle income countries turned negative in 2023, and the IMF is projecting sharp rises in interest payment and public external debt service in many low- and middle-income countries over the medium term.[39]

This chapter offers recommendations to alleviate these debt pressures, recognizing that these can only be part of the solution alongside action in other areas. In subsequent chapters, we consider complementary measures such as nature- and climate-smart financing and improved domestic resource mobilization. A holistic response to these interconnected challenges is critical, particularly given the growing fiscal challenges that advanced economies themselves face.

The recommendations in this chapter differ from generic debt relief proposals by proposing to link certain debt restructuring and debt refinancing operations to nature- and climate-related investment. There are three justifications for creating such links.

First, adaptation investment can reduce the economic losses and financial costs of severe climate events.[40] Targeted mitigation efforts can have strong immediate growth impacts that also boost creditworthiness.[41] Mitigation investments normally operate by accelerating the energy transition, which can result in lower energy costs, greater reliability of electricity supply, and lower dependence on imported fossil fuels, benefiting the business environment and hence long-term growth. Linking the terms of debt relief or debt rescheduling to specific adaptation or mitigation actions may therefore be in the interests of both creditors and debtors.

Targeted mitigation efforts can have strong immediate growth impacts that also boost creditworthiness.



As of 2022, low- and middle-income countries* accounted for 41% of annual greenhouse gas emissions

*Excluding China

Second, nature- and climate-related investments in EMDCs benefit creditor countries by mitigating emissions and preserving the global commons. Biodiversity-rich regions are disproportionately concentrated in EMDCs, as are threatened species.[42] As of 2022, low- and middle-income countries excluding China accounted for 41% of annual greenhouse gas emissions.[43] Thus, even if advanced economies achieve their net zero targets, EMDCs must take stronger environmental action if the world is to have any hope of halting biodiversity loss or curtailing global warming. If they do not or cannot act, the costs will be borne globally – including by creditor countries and private creditors. More frequent and severe wildfires, floods and heatwaves are already harming the citizens of creditor countries and damaging the infrastructure assets of private creditors. It is therefore in the long-term interests of all creditors to enable EMDCs to mitigate these environmental crises. Indeed, it can be more cost-effective to support EMDCs to reduce their emissions than to achieve comparable cuts at home, given that the low-hanging fruit have already been picked in some advanced economies, land and labor costs are lower in EMDCs and it can be cheaper to build low-emission infrastructure than to retrofit or refurbish high-carbon systems.[44]

Third, some creditor countries might find it politically easier to support nature and climate action in EMDCs through debt relief than through new grants or lending. Many countries already provide international biodiversity and climate finance. Their motivations vary but may include the desire to foster a spirit of solidarity, facilitate global cooperation, realize more cost-effective emissions reduction, support national commercial interests, enhance national security or cater to domestic audiences.[45] Yet fiscal pressures and political backlash mean it is increasingly difficult for political leaders to justify such development assistance. Targeted debt relief linked to domestic interests such as climate change mitigation may be more politically feasible for creditor countries confronted with tight budgets themselves.

This chapter considers two strategies to reduce debt pressures: greening debt restructuring and greening debt refinancing. The strategies address the different needs of highly indebted EMDCs, some of whom are insolvent and others illiquid. The implementation of such strategies at the country level should be informed by a nature- and climate-smart DSA – as proposed in Chapter 2 – and by the country's own Nationally Determined Contribution (NDC), National Adaptation Plan (NAP) and National Biodiversity Strategy and Action Plan (NBSAP). These resources together should guide the extent of debt restructuring/refinancing and the group of nature- and climate-related investments made possible with additional resourcing.[vi]

vi In principle, a nature- and climate-smart DSA should automatically suggest a 'green' debt restructuring if one is required by the needs of debt sustainability.

3.1 Greening debt restructuring

A country undergoing debt restructuring should be able to receive additional debt relief in return for binding nature- and climate-related commitments as part of a comprehensive growth-inducing and debt-reducing policy package.

In the presence of climate- or nature-related solvency risks, creditors may not be willing to grant the debt relief required to enable climate- or nature related investments, even when making such investments would benefit the creditors. At the core of this is a moral hazard problem: creditors may not have sufficient guarantees that borrowers will undertake such actions in return for deeper relief. Creditors may therefore have doubts that they will see the benefit in the form of safer debt, reduced vulnerability or the provision of global public goods. Creditors also have fiduciary duties. They are entrusted with funds provided by taxpayers or savings provided by investors, so their reluctance to go the extra mile on green relief is understandable.

Linking climate and/or nature investment to the terms of a debt restructuring agreement offers a way of deepening debt relief in the interests of both debtors and creditors. Shallow debt treatments create a risk that countries will need further restructurings if they do not fulfil growth forecasts or if they encounter new shocks. Linking deeper debt relief to carefully chosen nature- and climate-related investments would benefit borrower countries by reducing the costs associated with disaster response and recovery and potentially increasing long-term economic growth rates. This, in turn, increases the chances that the creditor will be able to repay the restructured debt, allowing deeper debt relief.

Linking deeper debt relief to carefully chosen nature- and climate-related investments would benefit borrower countries by reducing the costs associated with disaster response and recovery and potentially increasing long-term economic growth rates.

The challenge, then, is to provide sufficient reassurance to creditors and sufficient incentives to borrower countries to undertake the requisite climate and nature measures. Much of this hinges on identifying a suitable group of policy reforms and investments that improve climate resilience and protect nature while remaining consistent with national development priorities. Delivering on both fronts, and on appropriate fiscal policies in general, is central to reaching an agreement that is acceptable to both borrower countries and their creditors in the long term, particularly given the other demands on public finances. The proposed package of actions and measures will be more technically and politically credible if grounded in a nature- and climate-smart DSA and a country's NDC, NAP or NBSAP.

The first step would be for a country engaged, or about to engage, in a debt restructuring process to propose a credible list of nature- and climate-related measures that can enhance its economic resilience. Preparing a list of technically feasible, politically acceptable options is not necessarily easy. It may be particularly difficult to demonstrate a causal link between proposed investments on the one hand and, on the other, a palpable impact on creditworthiness and/or a country's balance of payments. Borrower countries may need technical assistance to identify and evaluate prospective measures; creditors may want a trusted multilateral organization such as the World Bank to verify the proposed actions.

Once the borrower country has prepared a credible list of measures, the next step is that this would become part of discussions with the IMF regarding terms of agreements in an IMF-supported program (to the extent that the restructuring occurs under the auspices of the IMF). To the extent that a longer-term commitment is required, agreed-upon investments could be part of a program supported by the IMF's Resilience and Sustainability Facility (RSF). These measures and terms would then feed into the country's restructuring negotiations with its creditors.

While greening debt restructuring might provide additional fiscal space in the medium term, it is important to recognize that it may also make the restructuring process longer and more complex. Debt restructurings have become faster over the last five years, in part because the Common Framework has started to deliver and in part as diverse creditors have gained experience working together.[46] However, we recognize that the pursuit of deeper debt relief on the basis of new and potentially contested variables may extend the restructuring timelines again, with serious near-term economic and fiscal ramifications. One way of mitigating this risk would be to introduce nature- and climate-related investments in restructuring processes on a case-by-case basis, starting with the most pressing or obvious investment needs at first, such as those identified and well-documented in a country's NDC, NAP or NBSAP.

The first step would be for a country engaged, or about to engage, in a debt restructuring process to propose a credible list of nature- and climate-related measures that can enhance its economic resilience.

3.2 Greening debt refinancing

We recommend that countries that are not yet in a debt crisis, but face high debt service obligations over the medium term, should be able to undertake debt refinancing to enable deeper nature- and climate-related investments. Many EMDCs issued commercial debt when interest rates were historically low. As borrowing costs rise, these countries face the dual challenge of refinancing their commercial debt under tightening conditions while securing additional resources for critical climate- and nature-related investments. Refinancing (at a lower rate) offers a means to create fiscal space and improve access to finance by reducing the cost of borrowing; borrower countries could link refinancing to stronger action on nature and climate for more favorable terms.

Recognizing the macroeconomic and fiscal diversity of countries with significant financing constraints, we propose a comprehensive debt refinancing initiative for LICs and LDCs that:

- face a significant repayment problem due to, for example, a bunching of repayments;
- are not yet in a debt crisis that would require a comprehensive deep debt restructuring; and
- have lost market access and/or have not borrowed significantly from private creditors.

The initiative would involve concessional refinancing of payments due over the short and medium term to enable participating borrower countries to smooth out their repayment profile. All creditors – domestic and international, concessional and market-rate, public and, when applicable, private – would provide refinancing at IDA-like terms over a 10-year horizon. Participating LICs would be required to ensure private participation on these terms, whether through refinancing or restructuring at comparable terms. The refinancing could be released in stages, as participating LICs fulfil their commitments to undertake accompanying reforms and use the additional fiscal space and borrowing power to make nature- and climate-related investments that could enhance resilience and stimulate growth. An independent party would need to verify progress in the implementation of nature and climate commitments made by the debtor country.

Our proposal is close in spirit to the Debt Service Suspension Initiative (DSSI) established in 2020 at the height of the COVID-19 pandemic, but there are also important differences. First, the mechanism would target a narrower group of countries (low-income or least developed countries). Second, private creditor participation would not be voluntary. As a condition for refinancing on favourable terms by the official sector, participating countries would be expected to negotiate refinancing on comparable terms with any private sector creditors, and reschedule their debt to these creditors on similar terms if these negotiations fail. Third, the proposal would be seeking a refinancing rather than a debt rescheduling from all creditors (hence treating bilateral and multilateral creditors the same) and seek comparability of treatment with private creditors.[vii] This may lead private creditors to incur losses on the value of their claim, which could therefore be considered a default on that debt category. However, since eligible countries would have no market access (and potentially no sovereign credit rating), this condition would not be too onerous for the debtor country.

While we recognize that a comprehensive green refinancing initiative would not be easy to set up and implement, it could have large benefits in reducing the risk and costs of a generalized default, and unlock the resources necessary for eligible countries to break the vicious circle of vulnerability and indebtedness. Too often, a liquidity crunch unnecessarily turns into insolvency. Most sovereign defaults happen when refinancing options for the government dry up, not because certain debt thresholds have been breached. As the case of Greece made clear, this risk faces economies at all levels of income. Insolvency is the bark. But illiquidity is the bite. A refinancing initiative aimed at an entire class of debtors could pre-empt this at a large scale, with the link to global nature and climate goals making it more attractive to LICS/LDCs' largest creditors.

The initiative would require several steps that are broadly analogous to previous debt relief initiatives. First, bilateral[viii] and multilateral creditors would need to reach political agreement on the scope and financial terms of the initiative, likely captured in a memorandum of understanding. The memorandum of understanding would establish the class-based nature of this proposal, define eligibility criteria relating to low-income levels and high debt risks due to debt service bunching, and establish comparability of treatment of private creditors as a condition for refinancing by official creditors. With these overarching arrangements in place, creditors would need to work on a case-by-case basis with eligible countries (and with the support of the IMF, World Bank and other MDBs) to determine the extent and terms of the refinancing, and elaborate on the nature- and climate-related investments, along with the multi-year macroeconomic and fiscal framework, accompanying it. Both the financial and environmental discussions would ideally be based on an enhanced nature- and climate-smart DSA.

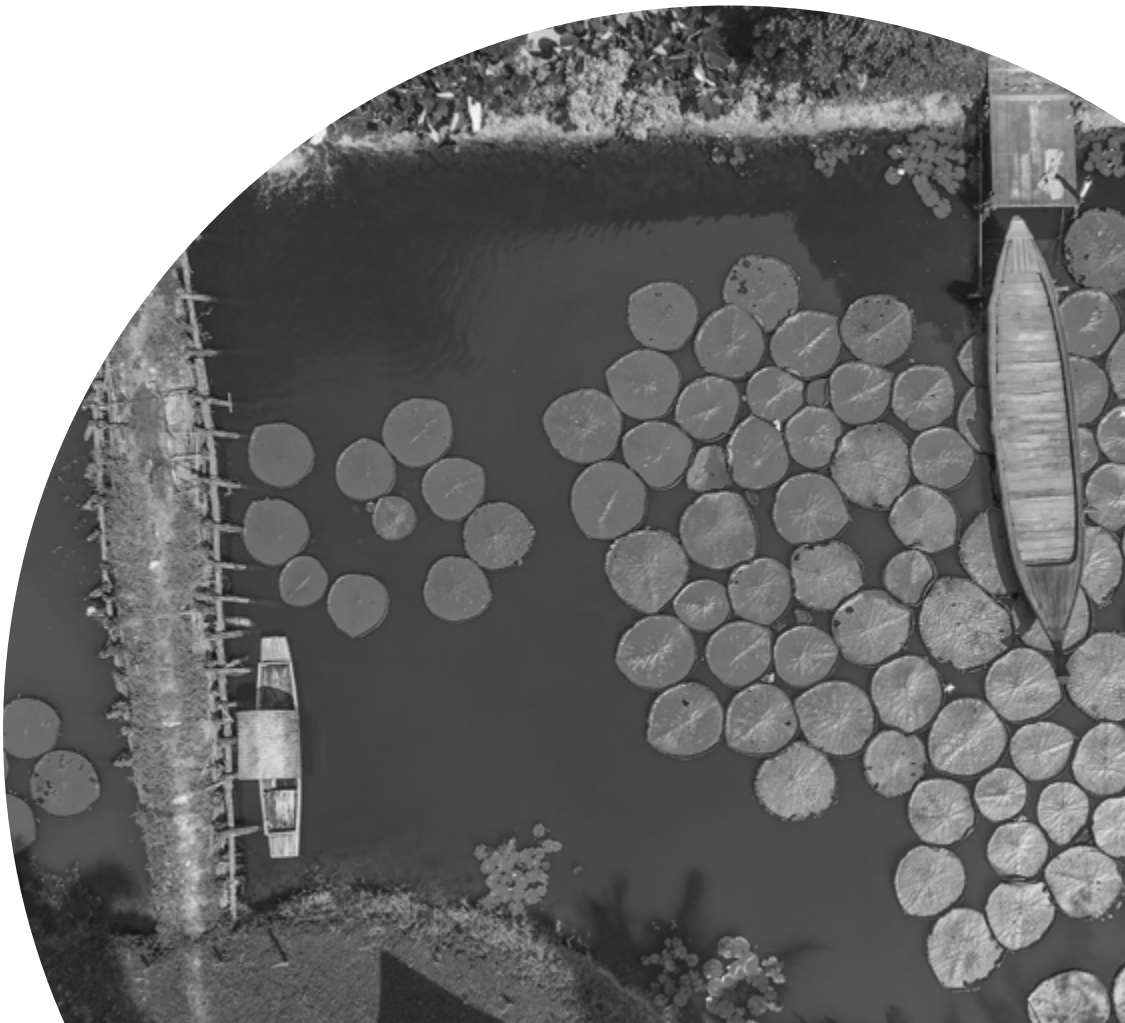
vii The DSSI, on the other hand, looked for broad country participation, and as such did not impose private creditor comparability of treatment (although it encouraged it).

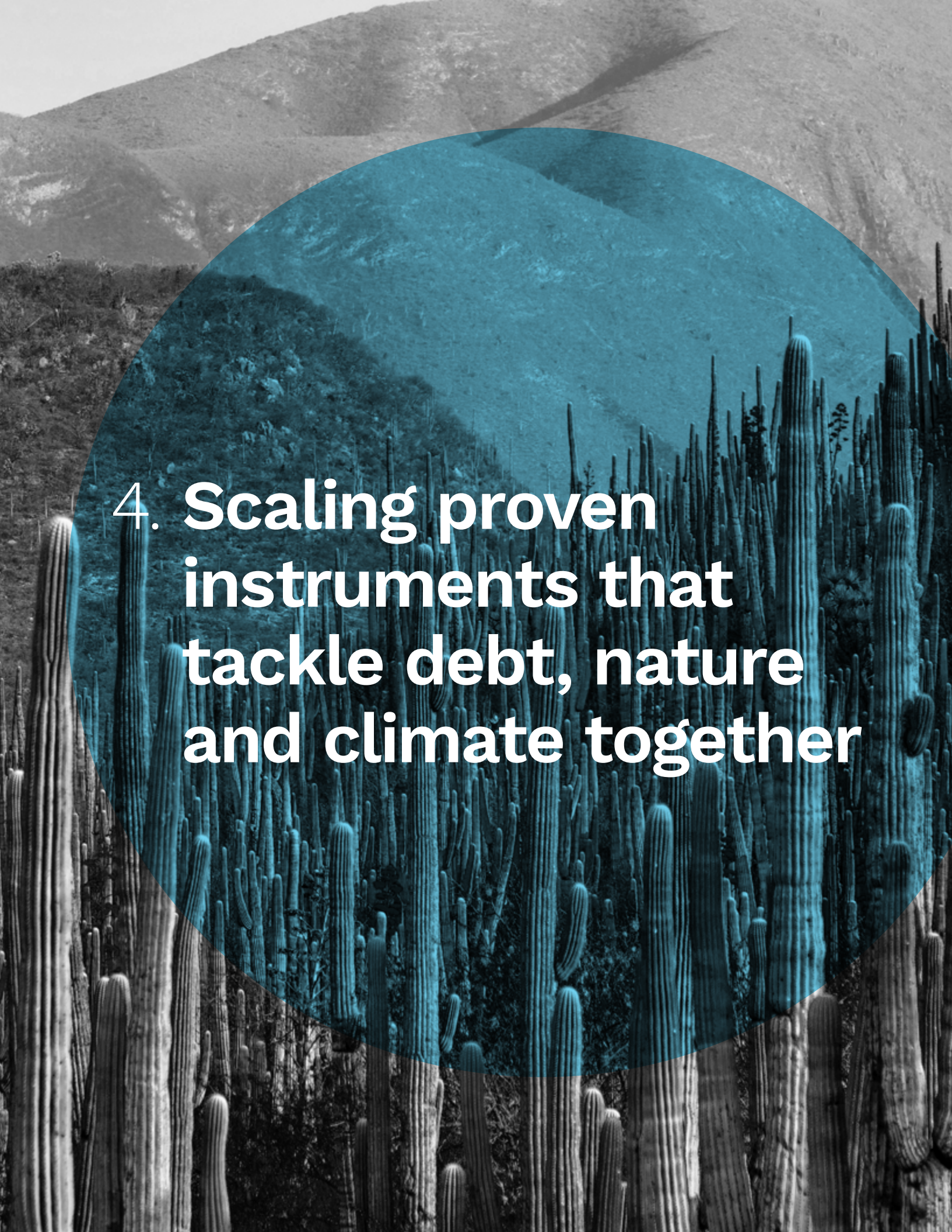
viii Paris Club and large non-Paris Club.

Our proposal has absorbed the lessons of the DSSI. On the creditor side, a green refinancing is typically swifter and easier to negotiate than a rescheduling, and enables multilateral institutions to participate on comparable terms. This is important particularly to ensure the participation of non-Paris club creditors. Another lesson from the DSSI is that private creditors will not participate voluntarily if asked to reschedule at below-market terms. We therefore propose to abandon the principle of voluntary participation for the purposes of this refinancing operation, and instead link official sector refinancing to comparable treatment of private creditors. On the borrower side, countries may be reluctant to join the initiative, given perceived stigma and the onus of conditionality. However, the fiscal headroom gained, the collective nature of the initiative, the fact that the refinancing offer would go to countries that have either lost market access or borrow very little from private creditors, and the process of mutually agreeing on a nature- and climate-related investment program, should mitigate this risk.

On the creditor side, a green refinancing is typically swifter and easier to negotiate than a rescheduling, and enables multilateral institutions to participate on comparable terms.

This proposal can be seen as complementary to recommendations that have recently been made to address situations of illiquidity faced by market access countries, such as the Bridge proposal.[47]





4. Scaling proven instruments that tackle debt, nature and climate together

Recommendations:

6. Building on the plans set out in the G20 Roadmap Towards Bigger, Better and More Effective MDBs:
   - Shareholders should aim to recapitalize the MDB system to enable the scaling up of lending for low-carbon, climate-resilient and nature-positive development.
   - MDBs should create a new class of adequately priced non-concessional loans over longer maturities (30–40 years) for certain nature- and climate-related investments.
7. MDBs should introduce new, simple forms of contingency to manage debt burdens and borrowing costs in the event of an external shock or stress.
8. MDBs, EMDCs, donor governments and civil society organizations should work together to expand the use of debt-for-nature and debt-for-climate swaps and sustainability-linked financing, by developing standardized structures which make them easier and cheaper to transact.

Shifting to a virtuous circle of green and resilient economic growth in EMDCs over the next decade will demand trillions of dollars of investments.[48] Reducing debt pressures (as proposed in Chapter 3) is a necessary precondition to enable nature- and climate-related investment in many EMDCs, as is enhanced domestic resource mobilization (discussed in Chapter 6). However, these measures will not be sufficient to enable most countries to shift to a low-emission, climate-resilient and nature-positive trajectory.

There is widespread recognition that additional financing from public and private sources will be necessary to close the investment gap in EMDCs. To this end, there has been extensive analytical work, policy experimentation and financial innovation over the past decade seeking to unlock additional resources for nature and climate without substantially increasing sovereign debt burdens. This chapter focuses on three strategies where much of the intellectual groundwork has been done and pilots have been successfully launched, but where there is much greater scope to scale:

- Enhancing the capacity of MDBs to make borrowing more affordable and flexible.
- Mainstreaming contingency into debt instruments, including through climate-resilient debt clauses.
- Accelerating the uptake of debt-for-nature and debt-for-climate swaps and sustainability-linked finance instruments.

4.1 Enhancing the impact of MDBs

A series of far-sighted G20 Presidencies have championed reform of the MDBs as an opportunity to scale up low-cost lending for countries' development goals and global public goods. While MDBs are relatively small players in the broader financing landscape, they have a crucial role to play in human development, nature protection and climate action. With their AAA credit ratings and not-for-profit structure, they can provide cheaper financing than many sovereign creditors or the private sector. Because of their development mandate, they invest in overlooked areas (particularly reaching the most vulnerable) and combine low-cost finance with policy advice and technical assistance.[49] And they provide long-run, usually counter-cyclical finance at affordable levels – although the volume of lending is not large enough to counteract pro-cyclical private capital flows, and the cost of lending is higher during the periods of the cycle when EMDCs most need it. There is therefore a need to make MDBs larger, leaner and quicker in disbursements,[50] particularly given the profile of nature- and climate-related investments.

We welcome the G20 Roadmap Towards Better Bigger and More Effective MDBs agreed under the Brazilian G20 Presidency,[51] following previous independent reviews commissioned by the Italian[52] and Indian[53] G20 Presidencies.

Among the Roadmap's proposals are that MDBs develop and support innovative financial instruments, including hybrid capital and portfolio guarantee mechanisms. The World Bank had already announced that 11 countries (including Germany, France, Japan and the US) had pledged a total of $11 billion to new measures including a hybrid capital mechanism and Portfolio Guarantee Platform.[54] The World Bank's leveraging capability enables these resources to be multiplied six to eight times over 10 years. Box 1 provides another example of how MDBs could significantly expand their financial capacity through innovative financial instruments such as non-voting hybrid capital. The G20 Roadmap also proposes that MDBs should develop, support and scale foreign exchange (FX) hedging and other innovative solutions to mitigate currency risk. Box 2 describes the FX liquidity facility provided by the Inter-American Development Bank in Brazil's EcoInvest Platform.

Box 1 Hybrid capital issuance by the African Development Bank

The report of the Independent Review of MDBs' Capital Adequacy Frameworks (CAF) commissioned by the Italian G20 Presidency and published in 2021 recommended that MDBs use hybrid securities to increase their lending. Hybrid capital is so called because it has some of the characteristics of both debt and equity. Like debt, hybrid capital pays a fixed return and can be bought and sold on a secondary market. But hybrid capital is subordinate to senior debt and can absorb losses like equity.[55] Thus, hybrid capital can be issued without negatively impacting an MDB's credit rating because credit agencies treat it as 100% equity.

The African Development Bank (AfDB) launched its inaugural hybrid instrument on 30 January 2024, with a coupon rate of 5.75% until August 2034 and a 10.5-year first call date at the Bank's discretion. This was the first hybrid capital issuance by an MDB in the public sector bond market. Demand for the deal was impressive: the order book peaked at over $6 billion, allowing issuance of $750 million for the perpetual non-call 10.5-year sustainable capital deal.

There is potential for scale as the initial issuance is 6% of AfDB's shareholder equity. Additional issuance could unlock additional finance for projects targeting urgent African priorities at the development-climate-nature nexus, such as food and water security. Importantly, hybrid capital provides a means for MDBs to crowd in private investors and therefore does not impact the fiscal space of their own shareholders.

Demand for the African Development Bank deal was impressive: the order book peaked at over $6 billion, allowing issuance of $750 million for the perpetual non-call 10.5-year sustainable capital deal.

Box 2 The FX liquidity facility provided by the IDB in Brazil's EcoInvest Platform

The cost of hedging foreign exchange risks is often one of the most significant causes of the high cost of capital for local currency-denominated investments. In a study of middle-income countries, the cost of FX hedging was found to be twice the amount by which the currency fell.[56] For example, during periods of average to above-market stress, FX hedging costs were, on average, 5% higher than the FX loss. For context, the average public equity return in the source markets for investment capital was less than 8% per year.

Affordable FX hedging would therefore make many more nature- and climate-related investments in EMDCs attractive to international investors. MDBs and the IMF, which have a counter-cyclical and public good mandate, are well-placed to establish such a facility, in contrast to international banks whose funding tends to be more short-term.

The Inter-American Development Bank (IDB)'s FX Liquidity Facility of Brazil's EcoInvest Platform, launched in March 2024, is a promising example. The facility combines: (1) regulators enabling inflation-matching prices; (2) an AAA-rated MDB committing over $3.4 billion of low-cost, long-term FX liquidity in the down cycle; and (3) a government guarantee to the MDB to cover the credit risk of their FX lending to firms with commercially viable nature-positive and climate-smart investments. It enables these firms to offer foreign currency returns to foreign investors without expensive hedging. Although barely a year old, the features and instruments of the platform are already auctioned and they have been heavily oversubscribed.

Affordable FX hedging would make many more nature- and climate-related investments in EMDCs attractive to international investors. MDBs and the IMF, which have a counter-cyclical and public good mandate, are well-placed to establish such a facility.

Here we offer two additional recommendations to enable MDBs to scale up lending for nature- and climate-related investment in EMDCs. In Section 4.1.1, we propose significant capital injections into the MDB system, alongside progress towards implementation of the G20 MDB Roadmap. In Section 4.1.2, we propose that MDBs should provide loans with longer maturities for adaptation and resilience investments.

4.1.1 Injecting more capital into MDBs

The Independent Expert Group on Strengthening MDBs commissioned by the Indian G20 Presidency[57] and the Independent High-Level Expert Group on Climate Finance launched by the COP26 and COP27 Presidencies[58] have both made the case for capital increases for MDBs. The uncertainties associated with the changing geopolitical landscape make this proposal aspirational at present, and not likely to be fulfilled in the near future. But we wish to emphasize why it remains desirable.

There are few better ways to leverage scarce public finance or mobilize private savings for sustainable development than to put it into the MDBs as capital. The MDBs can use these resources to borrow in capital markets with their AAA credit ratings, and then on-lend with a small spread to borrowers with much weaker credit ratings. Borrowers benefit because there is more low-cost finance in the system. Donors benefit because their contributions are multiplied, as MDBs can borrow four to five times their capital injection (potentially more if Capital Adequacy Framework (CAF) reforms are fully implemented).[59] Thus, an injection of $10 billion a year over 10 years (i.e. a capital increase of $100 billion) would translate into $400–$500 billion of additional lending – or potentially over $1 trillion when combined with full implementation of CAF reforms.

An injection of $10 billion a year over 10 years (i.e. a capital increase of $100 billion) would translate into $400–$500 billion of additional lending – or potentially over $1 trillion when combined with full implementation of CAF reforms.

Despite the comparative advantages of MDBs, their importance as financiers for EMDCs is diminishing, in part because there has been little new capital injected in recent years. The IEG on Strengthening MDBs noted that: 'Around 2000, MDBs disbursed about $30 billion to EMDEs, representing roughly 0.5% of their GDP.[60] By 2021, a year when MDBs had stepped up their lending as a countercyclical response to the COVID-19 induced global economic downturn, MDB disbursements were about $80 billion, a large absolute number but a tiny 0.2% of EMDE GDP. The decline in the financial footprint of MDBs is evident across income groups, although it is less pronounced for LICs where MDB concessional financing has remained relatively strong.'[61]

We argue that major shareholders should therefore provide regular capital increases to support sustained lending. Portfolio guarantees and optimization of balance sheets will go some way to expanding MDBs' financial capacity, but ultimately a capital injection will be needed to close the investment gap.

If the largest shareholders are not able or willing to commit to such increases commensurate with their shareholdings, alternative approaches to increasing MDB capital should be explored. For example, the Independent Expert Group on Strengthening MDBs proposes the creation of a Global Challenges Funding Mechanism to provide a wholesale approach for institutional investors seeking a vehicle to earn a financial return while also supporting the Sustainable Development Goals (SDGs), global public goods and other impact areas.[62] While such an approach would enable a welcome increase in MDB lending, it would be a distinctly second-best option (relative to a general capital increase from donors) from the perspective of the poorest and most credit-constrained countries that continue to depend heavily on MDB lending at IDA terms.

We know that regular and predictable capital increases are unlikely in the current political climate. In their absence, we encourage the MDBs to employ a strategic capital allocation framework that is deliberate and intentional, and which prioritizes the use of their own capital to support nature-positive and climate-smart development in EMDCs. MDBs will not achieve their mandate of supporting sustainable economic development while the accelerating and accumulating impacts from nature loss and climate change create such strong headwinds. As investment needs in their client countries increase, MDBs will likely continue being asked to do more with less. They therefore need to be more strategic in how they allocate their capital, including where and how they use such capital to leverage and catalyze private investment. A carefully considered framework for prioritizing investments may suggest that they should deploy fewer dollars in markets where private capital is easily mobilized (e.g. renewable energy technologies in upper-middle income countries) and provide more technical and financial support in areas where mobilizing private capital is more challenging, such as nature-based solutions and highly climate-vulnerable countries. Deploying capital with this prima facie lens of climate-related sustainability will not only align their capital to support the most critical needs, but also serve to enhance the impact of their overall portfolio.

MDBs will not achieve their mandate of supporting sustainable economic development while the accelerating and accumulating impacts from nature loss and climate change create such strong headwinds.

4.1.2 Lending with longer maturities for nature- and climate-related investments

We propose that MDBs create a new class of lending, offering low-cost but non-concessional loans with longer maturities and grace periods for nature- and climate-related investments.

We propose that MDBs create a new class of lending, offering low-cost but non-concessional loans with longer maturities and grace periods for certain nature- and climate-related investments. MDBs currently offer concessional loans with long maturities of up to 40 years for countries that are eligible for official development assistance (ODA). Their non-concessional lending is more expensive, but because of their AAA status compares very favorably with the terms most countries can get through domestic and international capital markets. However, these loans typically have maturities of 20 years or less.[63]

Investments in nature and climate resilience may not yield their returns over shorter time horizons. Well-designed investments in resilience pay off in terms of fiscal savings via reduced costs from disaster response and recovery. Low-emission investments in the energy, industry, and transport sectors have high upfront costs, but can also be cheaper over their lifetime thanks to lower operating costs, lower fuel import costs and less uncertainty, along with substantial health benefits from clean air – if affordable finance is made available for those initial capital investments.[64] However, the returns manifest over long time horizons: resilience measures may not demonstrate their value until the next few catastrophic storms or floods, and mass transit investments can take over a decade to build but then yield economic and fiscal benefits over the ensuing decades by encouraging livable urban density and generating agglomeration economies.[65]

Our proposal takes advantage of MDBs' current strong capital and liquidity positions to offer non-concessional finance with maturities commensurate with the long-term returns from nature and climate action. If governments could borrow over a 30- to 40-year period, they would be able to repay those loans with the fiscal savings associated with adaptation measures and the additional revenues associated with a more dynamic, productive low-carbon economy. With their high credit ratings, MDBs should be able to issue enough long-term bonds to match their own funding streams to long-term lending options for client countries.

Both borrower countries and the MDBs would need to carefully assess whether and how non-concessional lending with longer maturities and grace periods should be used. Better terms come at a financial cost to countries, as greater risks translate into higher interest rates. They also have an opportunity cost. The treasury departments of the MDBs will be concerned about how much capital is tied up in instruments with long maturities, and the commensurate impact on their ability to offer new finance. For these reasons, new long-term loans should be closely linked to nature- and climate-smart DSAs that identify measures which will meaningfully enhance resilience and boost growth, as well as to countries' NDCs, NAPs and NBSAPs to ensure strong country ownership.

4.2 Mainstreaming contingency into lending to EMDCs

EMDCs increasingly need protection against exogenous shocks. Nature loss and climate change mean that they are increasingly likely to face environmental disasters that demand significant spending on disaster response and recovery. Other kinds of exogenous shocks and stresses, from a pandemic to conflict and displacement and soaring food import prices, can equally make external repayment difficult, putting pressure on public finances and pushing up public spending. Exogenous shocks can tip a government with sustainable debt levels into debt distress without an opportunity for corrective action.

Simple forms of 'contingency' in lending instruments can ensure EMDCs can postpone major outlays or avoid a rapid rise in debt costs in the immediate aftermath of an emergency. Two options that provide flexibility to borrower countries are maturity extension clauses that allow a borrower country to extend the maturity of its debt by two years at a pre-defined interest rate, and interest capitalization clauses that allow a borrower country to capitalize the interest in the event of unexpected shocks.

These clauses are contractually simple, while offering protection against both foreseeable and unforeseeable shocks. Repayments are deferred, not reduced or cancelled. These clauses thereby provide protection against shocks on transparent terms. They also benefit creditors, as the alternative might be a default and drawn-out restructuring.

The most robust and easiest to design approach would come from clauses that provide the borrower country with the unilateral option to defer principal payments or capitalize interest, effectively providing a payment pause in a wide range of circumstances. In the event that a country faces difficulties from policy choices, the clauses provide the borrowing country more time to correct those policies without a default. And in the event of a true external shock, they can protect the creditworthiness of a country that would otherwise be at risk of a disorderly default. Such provisions, like all forms of insurance, would carry a cost: including such provisions in a new bond issue would likely increase its cost, though the increase should be modest as the bonds do not differ significantly from simply issuing with a longer tenor. If they were required as part of a restructuring to meet the conditions in the DSA, they would similarly reduce the market value of restructured claims and thus potentially complicate reaching agreement. Such costs are worth paying for the increased protection against negative shocks – and to counter market pressure to pull forward payments in restructuring negotiations.

Simple forms of 'contingency' in lending instruments can ensure EMDCs can postpone major outlays or avoid a rapid rise in debt costs in the immediate aftermath of an emergency.

The alternative is to explicitly define eligible shocks and stresses, as climate-resilient debt clauses (CRDCs) and hurricane bonds have done. Such provisions generally do not carry a significant price penalty or lower the value of an exit instrument in a restructuring, as they can only be exercised in narrowly defined circumstances and on a limited number of occasions – typically when a disorderly default would otherwise be likely. They do not generally change the net present value of the loan or bond. The challenge is to provide sufficiently broad coverage to offer real protection to economies that are highly exposed to the relevant risks. Hurricane bonds do not offer protection from a drought; pure climate-resilient instruments do not help in a pandemic. To expand the use of such instruments in new bonds and new loans, standardized definitions of triggers and the length and nature of the payment pause are now being developed to enhance acceptance among investors.

The IMF and World Bank can encourage systematic uptake of such shock-absorbing clauses, both when new loans are issued and when countries undertake debt restructuring or refinancing. Maturity extension clauses, interest capitalization clauses and/or pause clauses can be systematically integrated into new loans across all EMDCs and most creditor classes going forward.[66] The IMF and World Bank can encourage borrower countries to insert such clauses through revising DSAs to include an audit of contractual provisions that increase (or reduce) the flexibility of external debt stock in the face of unexpected shocks. Increased contractual flexibility would increase the estimated debt-carrying capacity of countries relative to those with rigid debt stocks. Standardized provisions, such as an expectation that maturity extension would carry no more than a 100 basis point penalty, would also help.

The IMF and World Bank can require such provisions in a debt restructuring that they support, through the requirements tied to their debt sustainability assessment. Debt restructurings offer an opportunity to change the contractual profile of a country's entire debt stock, and thus to provide the country with real insurance against future shocks. Provisions that offer only limited value in a single instrument are much more valuable when they are included in all of a country's outstanding debt. Such provisions thus offer more upside to both the country and its creditors when they provide sufficient flexibility to avert what otherwise might be a likely future default. Moreover, the logic of including such provisions in the debt sustainability assessment is clear, as debt sustainability is increased if countries can demonstrate a new payments profile that provides insurance against unexpected shocks.

We therefore propose that EMDCs are encouraged and supported by the IMF and World Bank to introduce simple forms of contingency to manage debt burdens and borrowing costs in the event of an external shock or stress and that MDBs use these in their own lending.

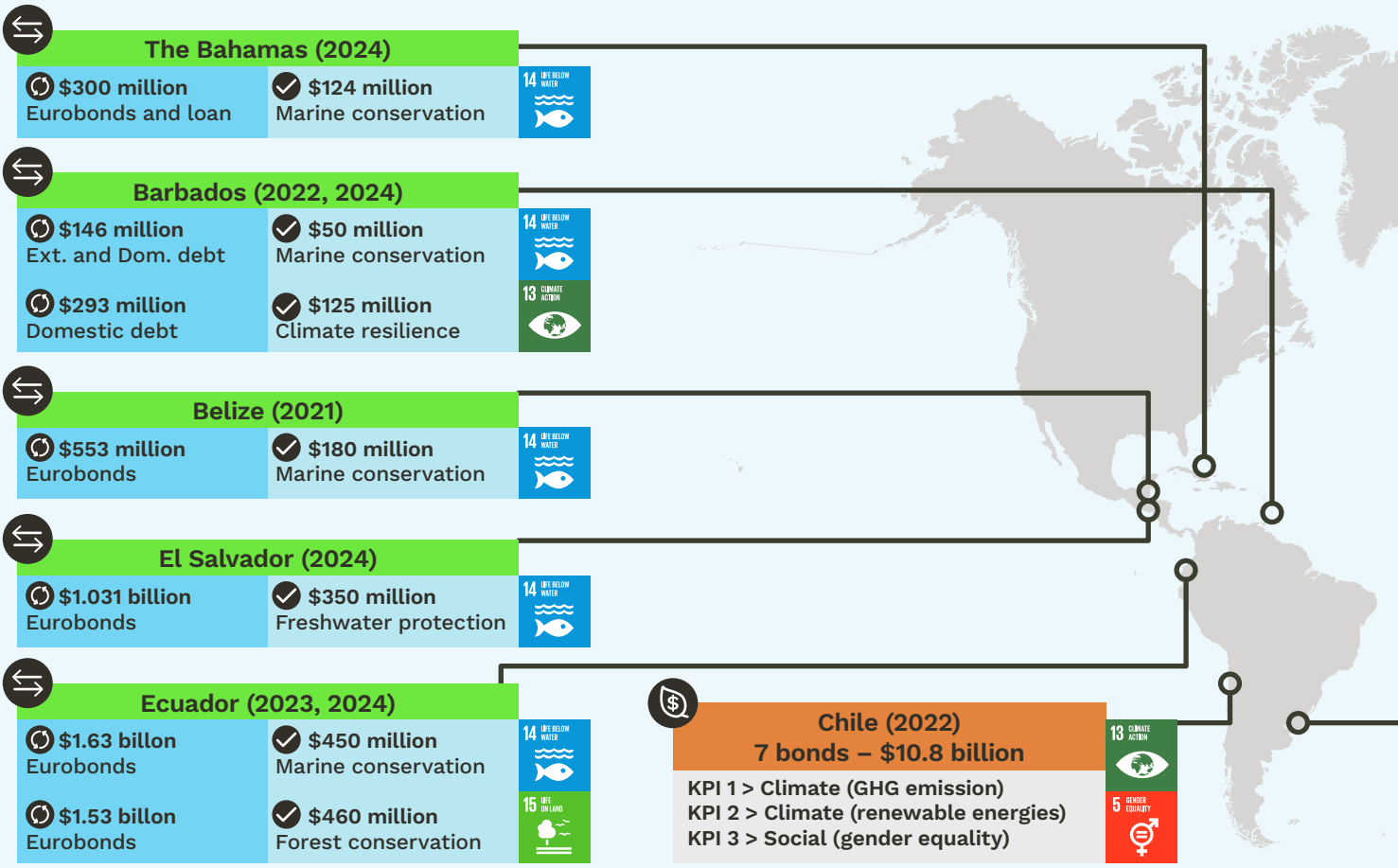
4.3 Accelerating the uptake of debt swaps and sustainability-linked finance

Debt-for-nature and debt-for-climate swaps, along with various kinds of sustainability-linked financing instruments, have attracted considerable attention in recent years. As outlined in Chapter 3, many EMDCs borrowed at historically low interest rates on capital markets and now face limited refinancing options at a time when they urgently need to mobilize investment in nature and climate. The conventional route of rolling over existing commercial debt at higher costs is suboptimal at best and impossible at worst. Moreover, traditional debt instruments – whether commercial debt or concessional loans – have inherent limitations in mobilizing sufficient capital for nature and climate objectives in a context of high indebtedness. Debt-for-development swaps and sustainability-linked finance (SLF) instruments offer alternative avenues to create fiscal space and reduce borrowing costs while achieving climate, nature and development goals.[ix]

ix We focus on debt-for-nature and debt-for-climate swaps involving commercial or market-based debt, not the bilateral swaps of official debt held by sovereign creditors.

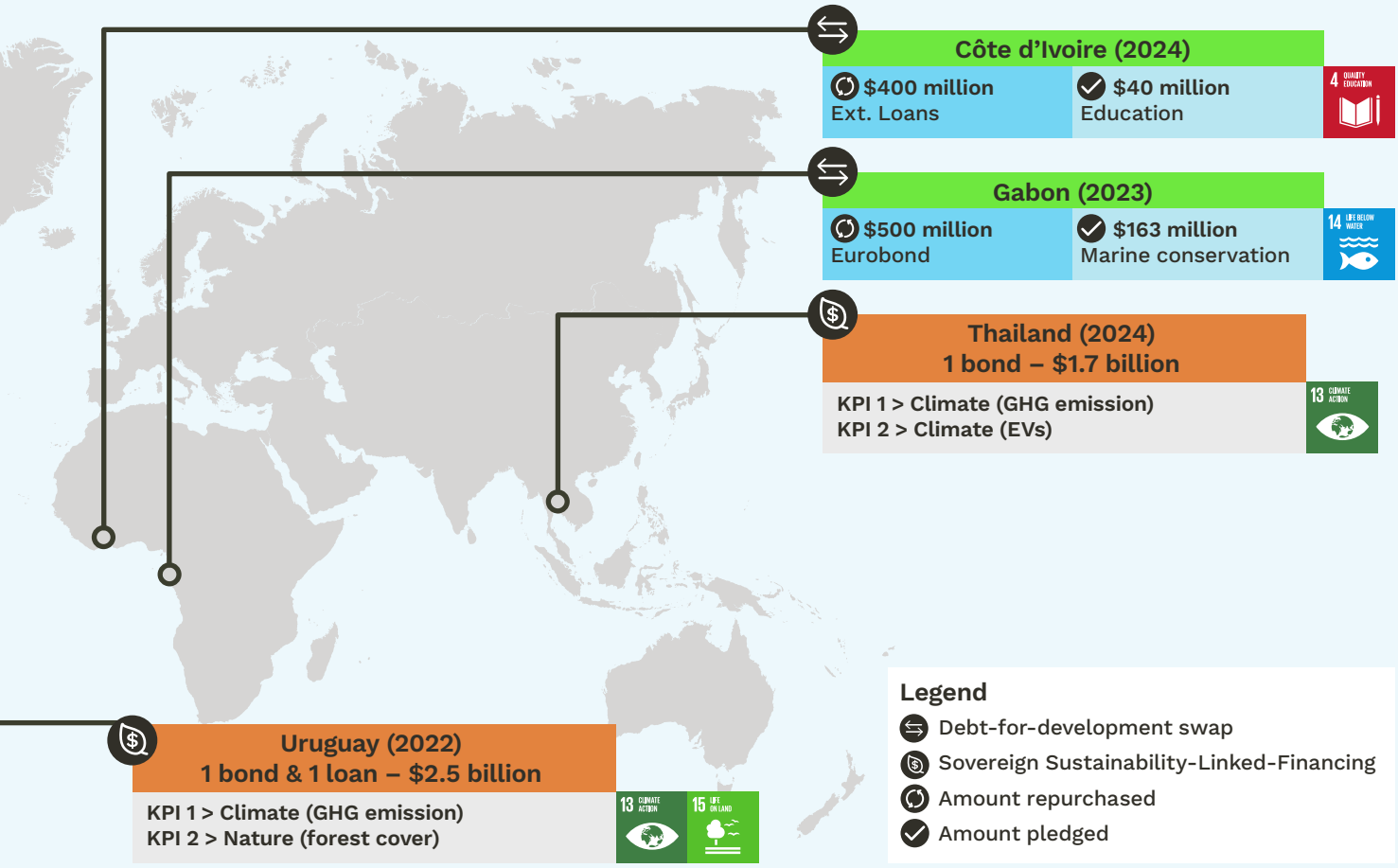
Figure 9. Landscape of debt-for-development swaps and SLF

Source: Finance for Development Lab (forthcoming).



4.3.1 Debt-for-nature and debt-for-climate swaps

Debt-for-nature and debt-for-climate swaps offer a way of releasing resources for a specific activity without increasing debt. Development finance institutions provide a guarantee allowing government debt to be refinanced at a lower interest rate, on condition that the savings generated are directed to an agreed purpose. In the case of debt-for-nature or debt-for-climate swaps, the resources have typically been earmarked for a specific nature conservation or climate resilience project, such as protection of a marine reserve or reforestation project, but they can also be directed to a more multi-faceted nature- and climate-related investment program. In either case, a clear set of key performance indicators (KPIs) need to be defined to provide accountability for the outcomes. A growing interest in using debt swaps to unlock finance for nature- and climate-related investments has been accompanied by much recent analysis of their potential.[67]



The total amount of debt refinanced through commercial debt-for-nature and debt-for-climate swaps remains limited, however, with two transactions in Ecuador accounting for nearly half of all such debt swapped.[68] There are two challenges to scaling up debt swaps. The first is that they only work for pockets of high-yielding debt. If a country has a lot of high-yielding and unsustainable debt, debt swaps are not a solution. In such cases, it may be wiser to seek a restructuring or refinancing to create long-term fiscal space (see Chapter 3). Debt swaps can also complicate future restructuring, especially when a guarantor has preferred creditor treatment, leaving less debt that can be renegotiated to restore sustainability. Second, because debt swaps address only expensive debt, they are generally not very large; this means they have high transaction costs relative to the additional funds released. The debt swaps which have so far been implemented have also tended to be time-consuming to agree, with each being different in structure and intended outcomes.

Over the last year a Credit Enhancement Task Force established by the Sustainable Sovereign Debt Hub, involving The Nature Conservancy and a number of MDBs, has been working to establish principles and standards for debt swaps aimed at making them easier to design and cheaper to transact. To some extent it is inevitable that debt swaps take time to agree: climate and nature conservation programmes differ, and so do creditors and guarantors. But some standardization would make it much easier for such instruments to be adopted by a larger number of countries.

We would therefore encourage the MDBs and others, through the Task Force, to work towards a 'debt swap framework' which standardizes the core features of different kinds of swaps (including their legal, KPI, guarantee and monitoring elements) so that both their time and financial transaction costs can be reduced. At the same time we propose that EMDCs interested in debt swaps be given independent technical assistance through the 'one stop shop' platform we propose in Chapter 6.

We would therefore encourage the MDBs and others to work towards a 'debt swap framework' which standardizes the core features of different kinds of swap.

4.3.2 Sustainability-linked finance

Sustainability-linked financing (SLF) instruments instruments offer financial incentives for borrowers to improve environmental outcomes. Instruments such as sustainability-linked loans (SLLs) and sustainability-linked bonds (SLBs) aim to incentivize environmental action, by tying the financial terms of the debt to predefined nature- and climate-related key performance indicators (KPIs). Such instruments can be structured either so the coupon contains a 'step-down' (i.e. lower interest rate) provision if KPIs are materially overachieved, or a coupon 'step-up' (higher interest rate) if the borrower fails to achieve the targets.

SLF instruments of these kinds provide an avenue for EMDCs to reduce borrowing costs while achieving environmental goals. To the extent that the chosen performance targets are credit-relevant and financially material to the sovereign's credit profile, then achieving the targets can also improve creditworthiness. In contrast, 'plain vanilla' debt instruments do not provide particular incentives for countries to invest in climate and nature.

Despite their theoretical appeal, the adoption of these SLF instruments has so far been limited. Only a handful of EMDCs have tested the market for SLBs, most notably Chile and Uruguay. Borrowers may not like the additional structuring costs or the penalty-based instruments, where a failure to meet the key performance indicators leads to an increase in interest rates. Moreover, many SLFs require subsidies from bilateral or multilateral donors, and such concessional finance is in short supply. By comparison, 'plain vanilla' instruments can match both investors' preference for straightforward financial and legal structures, and borrowers' preference for general budget funding.

Several initiatives have emerged to provide clearer guidelines for structuring sovereign SLF to ensure that the achievement of KPIs is accurately monitored and evaluated. The International Capital Market Association has established Sustainability-Linked Bond Principles to ensure transparency in KPI selection.[69] The World Bank has developed frameworks to help sovereigns calibrate KPIs that link borrowing costs to sustainability targets.[70] The Sustainability-Linked Sovereign Debt Hub has launched initiatives such as the KPI Accelerator to support debt managers in identifying and operationalizing KPIs.[71] Additionally, the Financial Materiality Assessment framework has been introduced to evaluate the impact of KPIs on sovereign risk, improving investor confidence.[72]

More can be done to develop the independent verification mechanisms that underpin investor and donor confidence. EMDCs and donors can jointly sponsor SLF instruments to help them become a viable, large-scale solution for debt sustainability and nature- and climate-related investment in EMDCs. The main risk facing EMDCs seeking to use SLF or debt swaps is that the financial incentives are not sufficient. Market appetite cannot be dictated externally; investors need to see that the financial incentives sufficiently compensate for perceived risks. Donors can help to nurture this

nascent market by de-risking these instruments to encourage their development and uptake. Development finance institutions could offer standard credit enhancement mechanisms, while philanthropy and vertical climate funds could provide catalytic grants to further improve financing terms.

Recent experiences with both debt swaps and SLF instruments demonstrate their potential for financing resilience and conservation in EMDCs (Figure 9). With support from the World Bank, the Government of Côte d'Ivoire has recently refinanced €400 million ($433 million) of commercial debt into longer-term, lower-cost debt, generating €60 million ($65 million) in debt service savings.[73] Barbados has just completed the world's first 'Debt-for-Climate Resilience Conversion', with a combination of credit enhancement and grants from the Inter-American Development Bank (IDB), European Investment Bank (EIB) and the Green Climate Fund (Box 3). While there is an opportunity cost to allocating scarce concessional resources in this way, a compelling case can be made when the instruments can mobilize private capital for sustainable development at scale.

For both debt-for-nature and debt-for-climate swaps and sustainability-linked financing, there is clearly scope for MDBs, EMDCs, donor governments and civil society organizations to work together to develop standardized structures which make them easier and cheaper to transact. We encourage them to do so, with the aim of expanding the use of these instruments where they can provide particular value to EMDCs.

With support from the World Bank, the Government of Côte d'Ivoire has recently refinanced €400 million ($433 million) of commercial debt into longer-term, lower-cost debt, generating €60 million ($65 million) in debt service savings.

Box 3 Blending SLF and debt swaps to finance climate resilience in Barbados

Barbados needs major investments in resilience while managing high levels of public debt. Like many SIDS, it is simultaneously facing acute climate vulnerabilities – particularly water scarcity and extreme weather events – and the burden of elevated public debt, which stood at 105% of GDP as of September 2024. In response, the government pursued a second debt swap operation in 2024 aimed, not at long-term conservation but at financing climate-resilient infrastructure – a notable shift in the typical profile of debt-for-development swaps.

As a first step, Barbados secured a low-cost loan to buy back expensive domestic debt. Barbados secured a sovereign sustainability-linked loan of BBD 600 million ($300 million), carrying a 3.25% interest rate and guaranteed to the tune of $150 million by both the IDB and EIB.[74] This enabled the government to repurchase BBD 592.7 million ($296.3 million)[75] in existing domestic bonds, which had significantly higher interest rates than external bonds – up to 8%. Although debt stock levels remained broadly unchanged, the transaction is projected to generate savings of approximately $125 million over 20 years.

The second leg of the operation was a major investment in water infrastructure to enhance climate resilience. Given that savings from the guaranteed loan will accrue gradually, the upfront capital needed for the project was mobilized separately: a $70 million concessional loan and a $40 million grant, jointly provided by the IDB and the Green Climate Fund. The debt service of the IDB and Green Climate Fund's concessional loan will be covered by the interest savings from the swap, illustrating how multiple financing instruments can work in tandem.

The governance structure is also innovative. Unlike most debt swaps, the repurchase was executed directly by the government using the guaranteed sustainability-linked loan, without a special purpose vehicle. The loan includes KPIs linked to the quality and quantity of reclaimed water produced. If these targets are not met, a penalty in the form of a step-up coupon applies. However, the proceeds do not go to the investors in the bond like some SLF, but to the Barbados Environmental Sustainability Fund. This results-based structure might signal a new generation of debt swaps: performance-driven, focused on domestic debt, and mobilizing a broad coalition of actors – including the EIB in its first debt swap operation and the Green Climate Fund providing catalytic grant funding.

5. Unlocking private capital via new mechanisms and instruments

Recommendations:

9 A special-purpose vehicle, the Finance Facility against Climate Change (F2C2), should be established to unlock private funds through the capital markets by issuing green bonds earmarked for climate-related investments in EMDCs, financed by future aid commitments.

10 EMDCs and development finance institutions (DFIs) should work together to develop new equity-like instruments to finance resilience infrastructure, which will better align repayments with real fiscal savings.

Even with a concerted push on domestic resource mobilization, new initiatives to relieve debt pressures and rapid scaling of proven instruments, many EMDCs will continue to face an investment gap. Raising and steering both domestic and international private finance will be key. We are already seeing progress: private finance exceeded 50% of mitigation finance in EMDCs (excluding LDCs) between 2018 and 2022.[76] However, it is very uneven, flowing overwhelmingly to the buildings, energy and transport sectors and contributing less than 10% of climate finance in LDCs every year except 2021. New mechanisms are therefore needed particularly to mobilize private finance for nature and climate action, accompanied by efforts by EMDCs themselves to foster an enabling environment for investment.[x]

We therefore propose two innovations to support nature- and climate-related investments and thereby help EMDCs transition to a virtuous circle of green, resilient growth. In Section 5.1, we recommend the establishment of a special purpose vehicle, the Finance Facility against Climate Change (F2C2). F2C2 would issue bonds, backed by donor country commitments to cover future debt service costs. EMDC recipients would earmark the funds for climate change mitigation and low-emission and climate-resilient development. In Section 5.2, we recommend that EMDCs and MDBs work together to develop new equity-like instruments to finance resilience. Our proposals recognize the different characteristics of mitigation and resilience investments in terms of the profile of the returns and how they might be monetized.

We are already seeing progress: private finance exceeded 50% of mitigation finance in EMDCs (excluding LDCs) between 2018 and 2022.

x An innovative example of such a new mechanism is the Tropical Forest Forever Facility proposed by Brazil to finance countries' efforts to end deforestation. See https://tfff.earth/about-tfff/

5.1 Establishing a Finance Facility against Climate Change (F2C2)

The establishment of a special purpose vehicle, which we call the Finance Facility against Climate Change (F2C2), could unlock private funds through the capital markets by issuing green bonds earmarked for climate-related investments in EMDCs. EMDCs' greenhouse gas emissions (GHG) emissions are rising quickly. High population growth in poorer countries will lead to an ever-rising share of global emissions. If EMDCs continue on their carbon intensive growth paths, even if the high income countries meet their net zero targets, the battle for the world's climate will be lost. By providing cheaper finance for public and private projects in EMDCs the creation of F2C2 would help shift them to a greener and more resilient growth model. F2C2 could help overcome the collective action problem associated with any investment that generates a global public good. Mitigation cost is typically lower in EMDCs than in richer countries. This makes rich countries' commitments a cost-efficient measure to reduce emissions: a tonne of carbon avoided in a high income country is typically more expensive than a tonne avoided in EMDCs.

The issuance of F2C2 bonds would be backed by future commitments of development assistance from advanced economies, providing the certainty needed to mobilize private funds through capital markets at scale.[xi] Such an approach would enable lower-income countries to meet the high upfront costs associated with nature-positive, low-emission and climate-resilient measures, while spreading the burden for taxpayers in both donor and recipient countries over many years, possibly even decades. One of the advantages of F2C2 is that it is scalable. Both traditional and non-traditional donors would be able to back F2C2 green bonds. Countries that do not opt in at its creation can join when their fiscal position is stronger or their public policy priorities shift back towards prioritizing climate action. Another advantage of F2C2 lies in the fact it does not require paid-in capital. By comparison, a capital increase to MDBs (as proposed in Section 4.3) will require budgetary funds to be made available immediately.

F2C2 would emulate (but on a larger scale) the successful example of the International Finance Facility for Immunisation (IFFIm). IFFIm was established in 2006 to raise funds through bond issuance, with the proceeds earmarked for immunization programs in low-income countries. The bonds were backed by future aid commitments from donor governments. Like immunization campaigns, emission reductions are most effective when front-loaded: once a unit of carbon dioxide is emitted, it will remain in the atmosphere for hundreds of years.

The tried and tested experience of IFFIm demonstrates that F2C2 would reduce the cost of borrowing for EMDCs in two ways. First, pledges from highly rated advanced economies would cover a substantial part of the F2C2 bonds' debt service

xi The approach taken would differ across countries owing to different legal arrangements.

obligations. Effectively F2C2 builds a bridge from the future to the present. It enables the required frontloading of mitigation investments, while avoiding the short-term impact on donor countries' budgets. Second, credit rating agencies will treat advanced economies' pledges to back F2C2 obligations on a par with the full faith and credit of the sovereigns making that promise. Thus, the bonds will carry ratings in the AA or even AAA range, depending on the size and composition of advanced economies' commitments for future funding and possible overcollateralization of pledges.[77] We know that rating agencies will treat the commitments on a par with a sovereign's senior unsecured debt obligation because that is how they proceeded in the case of IFFIm. The agencies confirmed that ratings approach recently in the context of the much larger example of the Next Generation EU Fund established to support economic recovery during the COVID-19 pandemic, which has an issuance limit of over €800 billion. The strong credit ratings assigned to F2C2 will permit it to raise funds at a low cost compared to EMDCs. Early engagement with credit ratings agencies will be critical to optimize financing structures (for example, the extent of overcollateralization or the seniority and composition of pledges) and thereby secure the highest possible rating.

The funds raised through the issuance of F2C2 bonds can be on-lent to EMDCs or to private sector entities that put their own funds in as equity in climate-related projects in those countries. The financial arrangements for F2C2, such as treasury operations, could be managed by the World Bank, as it does for IFFIm and many other climate-related funds.[xii] The F2C2 mechanism is shown in Figure 10.

We propose that F2C2 funds are allocated in two ways:

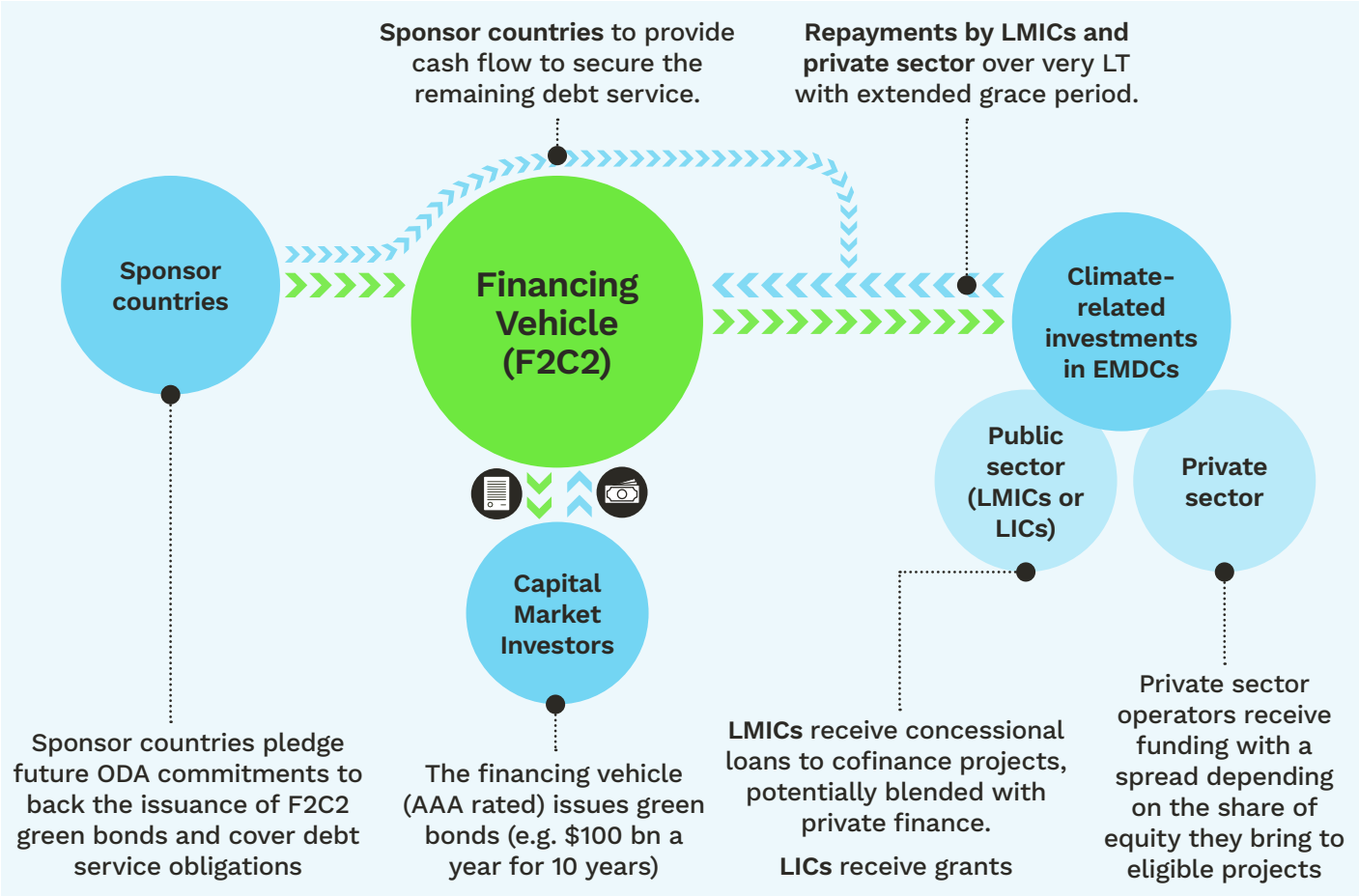
- Grants and loans to EMDC governments for mitigation projects. LICs will receive the funds as grants with no co-financing requirement. LMICs would be expected to provide a 10% co-financing contribution but would also receive highly concessionary conditions by applying a 50% 'discount' on the most concessionary terms currently offered by the World Bank's International Development Association, with a repayment period of 50 years, including a 10-year grace period. This would result in a very low net present value of the recipient LMICs' payment obligation with annual principal repayment of 1.25% of the total from year 11 to 50. F2C2 would be expected to enjoy preferred creditor treatment like other multilateral lenders. While F2C2 is primarily designed to finance the provision of a global public good (i.e. emissions reduction), a certain share could also be dedicated to adaptation measures in EMDCs.
- Loans to private entities for low-emission and climate-resilient projects. F2C2 can provide blended finance at scale. Many climate mitigation projects in lower-income countries are bankable in principle, but too often will not happen because of the cost of capital and/or perceived political risk. Private project developers, including utilities, can benefit from lower financing costs by borrowing from F2C2 as long as the projects to be financed are consistent with the climate-smart DSAs, NDCs and NBSAPs of the respective countries. A

xii The Adaptation Fund, the Fund for Responding to Loss and Damage, Global Biodiversity Framework Fund, the Green Climate Fund, the Least Developed Countries Fund and the Special Climate Change Fund.

sliding scale could be applied: the more equity the private entity provides, the lower the mark-up over F2C2 funding costs for the loan from F2C2 would be. If private equity surpasses 50% of the total cost of the project, even a mild mark-down from F2C2 funding costs could be envisaged, to entice private capital flows to green and resilient investments in EMDCs. To reduce the perceived country risk, political risk insurance (for example through MIGA) would be supported by F2C2. The financial support for this risk insurance would again be arranged on a sliding scale and increase in line with the private equity portion injected into the mitigation investment.

Under reasonable assumptions, we believe that up to $1 trillion could be raised by F2C2 in a decade. To put this into context: the total development lending of all MDBs combined stands at around $2 trillion. More details of the proposed financial arrangements underpinning F2C2 can be found in Annex 2.

Figure 10. Illustration of the mechanism of the F2C2



Source: Adapted from Kraemer and Volz (2024)[78]

Box 4 proposes a new product offering borrowers both a credit enhancement function and an interest rate 'buy down' to unlock private capital for EMDCs.

Box 4 A Credit Enhancement/Interest Rate Buy-Down Product

An option that may not require the creation of a special fund with new pledges, but could be organized via existing programs and climate funds of some MDBs, would be the development of a 'Global Credit Enhancement/Interest Rate Buy-Down' product to support climate-related resilience investments in EMDCs. As with F2C2, this product would be designed strategically to both (i) mobilize and (ii) reduce the cost of private capital for EMDCs seeking to invest in nature and climate action. As with F2C2, the loans could be provided to eligible EMDC governments and subnational governments or to private developers for resilience projects. However, the mechanism for crowding in private capital would be different from F2C2 in that this could simply be achieved by using existing products of the MDBs and climate funds in a more targeted, applied and coordinated way.

The product would:

- Leverage the strong credit ratings of the MDBs to provide a credit enhancement function in the form of guarantees or similar support to raise the creditworthiness of an EMDC borrower or project to a level closer to investment-grade. This would require the product itself to be underwritten on the balance sheet of an entity that itself had a credit rating that could be leveraged, and for a borrower to benefit from that guarantee in its own efforts to raise capital from private investors.
- Utilize existing (and future) concessional capital via climate funds to provide a partial interest rate 'buy-down' for the EMDC borrower from the MDB. Such a buy-down would be tailored and sized to ensure that the borrowing was sustainable for the country over the term of the loan, and would be aligned with the climate-positive outcomes of the borrower's project/investment. Such a buy-down might extend below market rates, but would not fully buy-down the interest rate, and as such should be tied to the climate investments outcomes.

By combining a credit enhancement function with an interest rate 'buy-down', the proposed product would tackle two challenges facing EMDCs. The credit enhancement function would reduce creditors' concerns about credit risk (whether real or perceived), thereby helping to maintain availability and stimulate flows of private capital. The 'buy-down' aspect of the product would address the affordability of the EMDC's debt.

The dual nature of the product is key in circumstances where even with a credit enhancement, the cost of borrowing is still challenging and/or unsustainable for the borrower. Furthermore, buying-down the interest rate over the term of the loan for climate-related investments could serve to specifically apply and/or incentivize the borrower's climate and nature investments.

5.2 Developing equity-like instruments to finance resilience

Investing in resilience and adaptation is a fiscally prudent thing to do. The fiscal savings from resilience and adaptation measures can substantially exceed the investment needs. However, there is a limit to the uncompromising debt obligations a country can make in the present given forecast public revenues and uncertainty about when fiscal savings may be realized. Traditional debt instruments will therefore not meet EMDCs' needs for adaptation investment in a climate-changed world.

New financing instruments need to be designed that enable EMDCs to frontload such investments, such as 'equitizing' the payment structures. Unlike sovereign governments, firms can raise finance by issuing equity: a share in the company and rights to profits after financial obligations to creditors have been met. Equity holders can receive nothing (if there is nothing left over from satisfying creditors), or they can make an extraordinary return on investment. There is no upper limit to returns on equity, but those returns are more conditional, uncertain and variable than those on debt. Fiscal savings associated with adaptation investments have a very similar profile. They have the potential to be several times the original investment, but will not be realized until an external shock occurs, in comparison to the stream of steady principal and interest repayments associated with a loan. We are therefore proposing the development of debt instruments that shift the profile of repayment to be more equity-like (though not equity-like in the sense of ownership).

We recommend that EMDCs and DFIs work together to develop a payment structure for resilience investments based on a proportion of future fiscal savings. Such an instrument can be seen as a twist on a public-private partnership or payment-for-results approach. The borrower country would benefit from access to more subordinated and patient capital, which does not increase its traditional indebtedness and that better aligns the timeline for repayments with the savings. DFIs, which have a greater appetite for long-term sovereign risk in their client countries than the market, would receive a higher long-term return as compensation for the greater uncertainty about its scale, timing and the performance of the resilience investment.

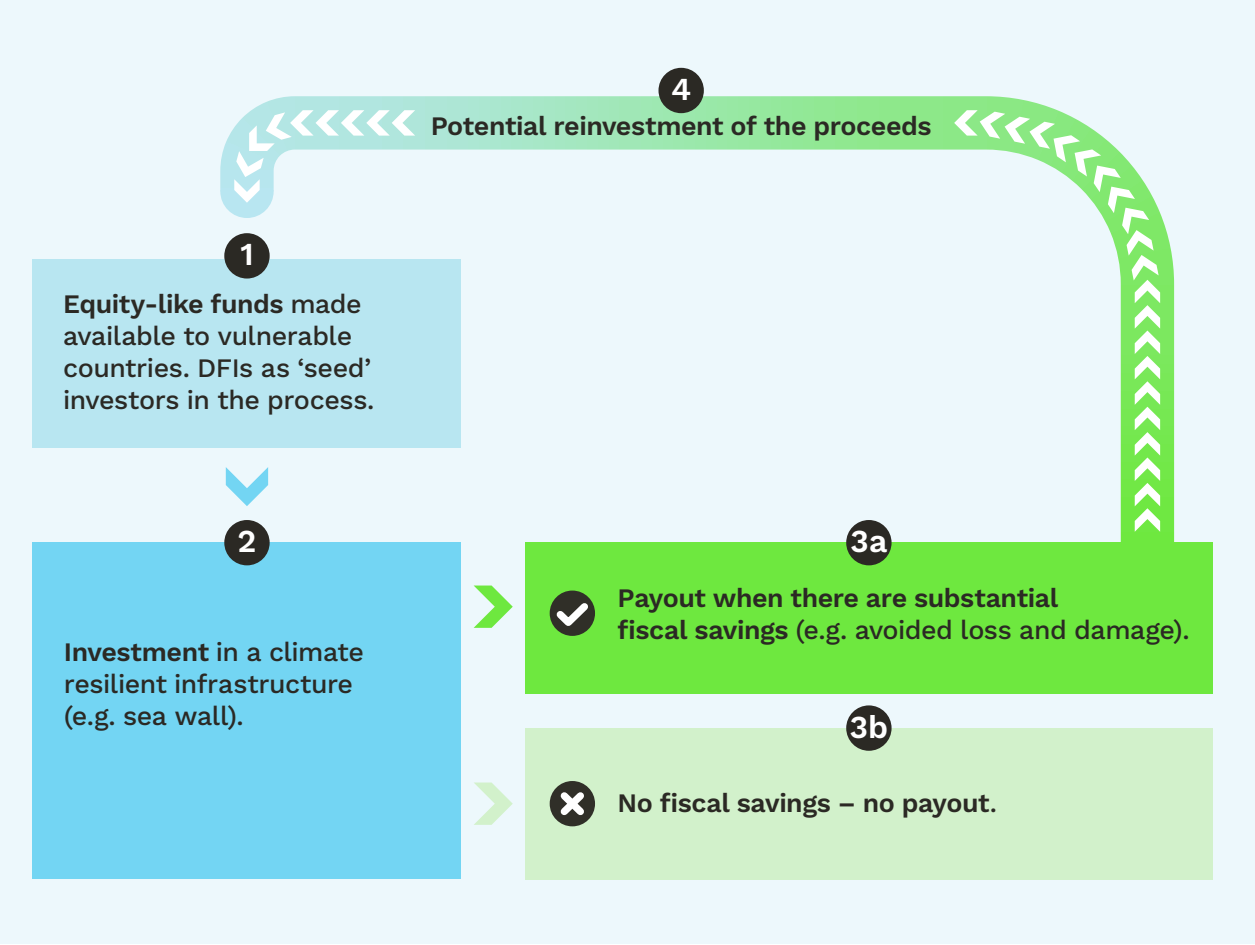
The borrower country would benefit from access to more subordinated and patient capital, which does not increase its traditional indebtedness and that better aligns the timeline for repayments with the savings.

Once the income stream starts developing and the new model is seen to be robust, the DFI could sell part of the future receivables to private investors, using the proceeds to finance more resilience projects along similar lines. We are under no illusion that private investors would flock to finance resilience in this way immediately, given the novelty and unpredictability of cash flows. Hence, DFIs must initiate this new approach. They are well-versed at piloting new financial instruments and developing capital markets. They can help EMDCs

to draft appropriate terms and build a repayment record that can later attract private investors. The way in which the instrument would work is illustrated in Figure 11.

Investors (including the DFI that initially co-developed the equity-like instrument) may be attracted by the lack of correlation between the income stream and the economic cycle. Insurers, which face increasing pay-outs related to environmental shocks, may particularly appreciate an investment that generates returns that rise and coincide with such disasters. All investors would need to be satisfied that the fiscal savings are being measured independently and rigorously, and would likely want to have oversight of the design, construction and maintenance of the investment. Pooling several of the equity-like investments into a regionally diversified portfolio could enhance the attractiveness to private investors as it would diminish the 'lumpiness' of payouts.

Figure 11. Illustration of the mechanism of the equity-like instrument



Source: Expert Review on Debt, Nature and Climate

6. Equipping countries to manage debt and investment more sustainably

Recommendations:

11 EMDCs, particularly those with tax revenues at or below 15% of GDP, should prioritize enhancing domestic resource mobilization to increase the funds available for public goods, including through the phasing out of environmentally harmful subsidies, and by raising the level and expanding the scope of carbon pricing.

12 MDBs, the IMF, UN agencies and regional UN economic commissions should work together to create a 'one-stop shop' or single platform for technical assistance, better data and mutual support, to enable governments and international economic institutions to improve the design and management of fiscally and environmentally sustainable debt and investment.

In this report we have so far focused on the three core requirements to make debt more sustainable: incorporating nature and climate properly in economic and debt analysis; reducing current debt pressures to create fiscal space for nature- and climate-related investment; and developing and scaling proven and new approaches to unlock more resources for sustainable development.

But making these reforms happen will also depend on creating a more enabling environment, both through action by EMDCs themselves and within the multilateral arena. We focus here on two key elements:

1 The ability of EMDCs to raise resources domestically in a way that is aligned with nature and climate goals; and

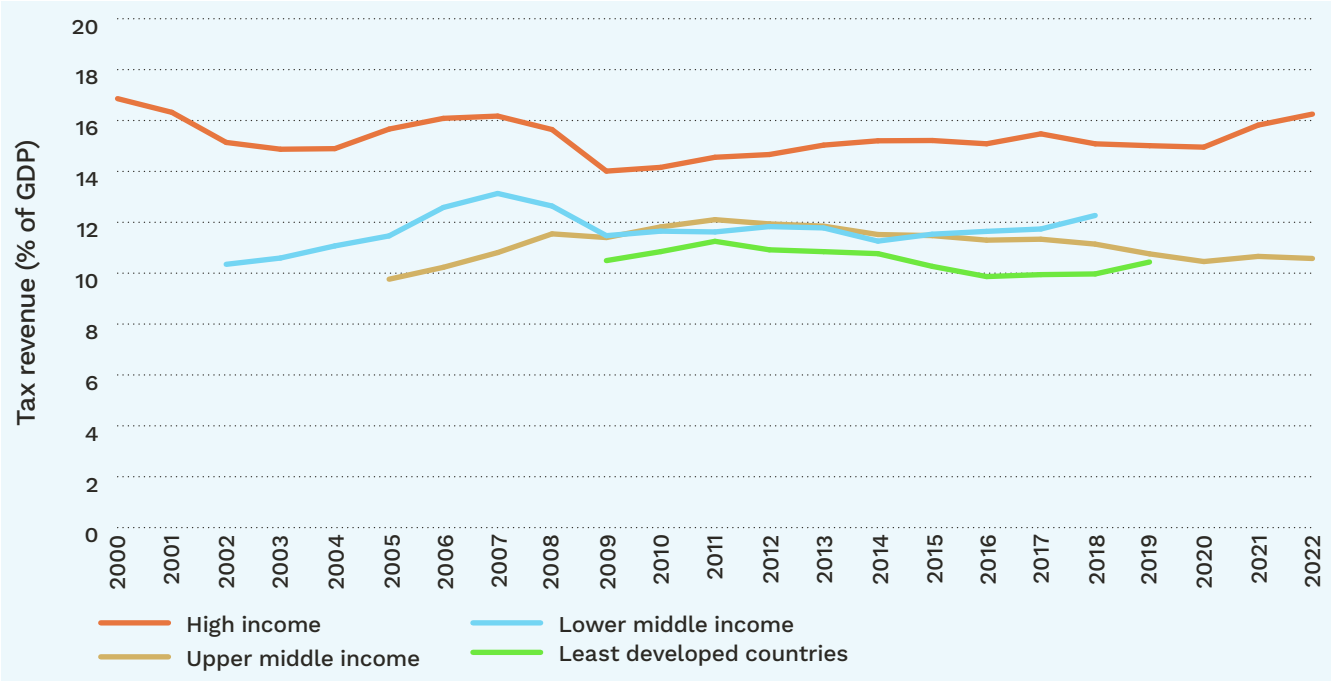
2 The knowledge and capacities of EMDC policy makers and international financial institutions in the design and management of fiscally and environmentally sustainable debt.

6.1 Enhancing domestic resource mobilization

Domestic resource mobilization is central to financing sustainable development in countries at all levels of income. It is essential for governments to be able to shape development trajectories through spending and investment, and to anchor access to bank lending and bond markets that allows the cost of productive investments to be spread equitably over time. Own-source revenues and access to capital markets is becoming even more important for EMDCs as many advanced economies cut development assistance. The Independent High-Level Expert Group on Climate Finance estimates that 60% of the finance required for sustainable development in EMDCs will have to come from domestic public and private sources.[79]

Many EMDCs have the potential to significantly increase tax capacity, improve the efficiency and effectiveness of spending, and manage debt more robustly. 41 out of 75 of the poorest and most credit constrained countries have tax revenues below 15% of GDP.[80] The IMF estimates that IDA-eligible countries could generate additional tax revenues worth 6.7% of GDP; other EMDCs could generate additional tax revenues worth an additional 5.0% of GDP.[81] Figure 12 illustrates the gap in tax capacity between EMDCs and high-income countries, as well as illuminating the lack of data in EMDCs. We recognize that tax and spending reforms are not easy. They need to be seen to be fair and to be buttressed by visible progress in the transparency and accountability of public financial management.

Figure 12. Tax capacity by region (2000–2023)



Source: World Bank (2025)

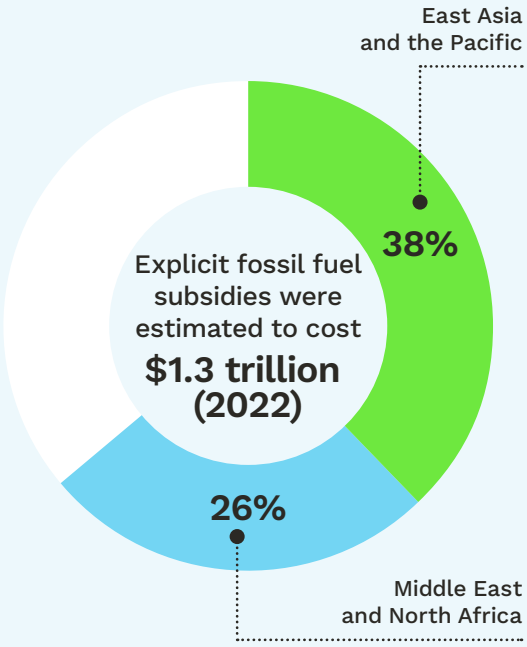
We believe that EMDCs, particularly those with tax revenues at or below 15% of GDP, should prioritize enhancing domestic resource mobilization. Governments have a range of tools to generate more revenues and manage their finances more effectively. An efficient, transparent and fair tax collection system is at the heart of good public financial management, with effective enforcement mechanisms to ensure that individuals and companies pay their fair share. Internal control mechanisms and digitalization of tax and customs administrations can make tax payment easier and reduce opportunities for corruption and evasion. Efficient allocation of resources through the national budget and robust monitoring of public expenditure can ensure scarce resources are spent wisely. A strong debt management office has an important role to play in minimizing borrowing costs, managing risks and ensuring timely payments. International development partners can support domestic resource mobilization through capacity building (see Section 6.2) and by tackling illicit financial flows.

Official lenders could incentivize better tax collection by linking the interest rate due on official loans to progress in enhancing domestic resource mobilization.

For many countries, an important potential source of domestic fiscal space is the reduction and phasing out of environmentally harmful subsidies. This can both release resources for, and align incentives with, greener and more resilient economic growth. Direct fiscal expenditures on environmentally harmful activities are very high. Globally, explicit fossil fuel subsidies were estimated to cost $1.3 trillion in 2022, as illustrated in Figure 13. East Asia and the Pacific accounted for 38% of this figure and the Middle East and North Africa for 26%.[82] These figures do not take into account the indirect costs associated with such subsidies such as toxic air pollution – a health burden primarily borne in industrializing middle-income countries. Meanwhile global agricultural subsidies cost an average of $638 billion a year between 2016 and 2018.[83] Although a handful of large economies (some of them high-income) account for most of the environmentally harmful subsidies in absolute terms, the share of government budgets and GNI going to environmentally harmful subsidies is often higher in smaller and lower-income countries. Phasing out environmentally harmful subsidies in these economies would therefore proportionately have a bigger impact on fiscal space.[84]

A second potential source of fiscal revenue is carbon pricing. A price on carbon is a powerful tool to systematically incentivize emission reductions; it can also generate significant government revenues. Carbon pricing schemes have been introduced in large middle-income economies including Brazil, China, Indonesia, Mexico and South Africa. Revenues in emerging markets remain a relatively small proportion of the $104 billion generated globally from carbon taxes in 2023: Mexico's carbon tax, for instance, generated $437.2 million and South Africa's generated $127.3 million.[85] However, interest in this source of revenue is growing, as evidenced by the development of new carbon pricing schemes in countries such as India and Türkiye.

Environmentally harmful subsidies continue to use up considerable public resources around the world



Agricultural subsidies
$638 billion per year
(2016-18)

Fishing subsidies
$35.4 billion
(2018)

Revenues in emerging markets remain a relatively small proportion of carbon tax revenues generated

$104 billion
Global carbon tax revenues generated in 2022

$437.2 million
Mexico

$127.3 million
South Africa

Carbon pricing and subsidy reform needs to be accompanied by complementary measures to mitigate the potential impact on low-income and other marginalized groups. Most subsidies (including underpriced greenhouse gas emissions) are regressive, with most of the benefits in absolute terms being captured by higher-income households. However, reforms that increase the cost of fuel and food will have a disproportionate impact on the poor, as a higher proportion of their disposable income goes to these essentials.[86] Fortunately, carbon pricing and subsidy reform create fiscal space for governments to introduce more targeted support for lower-income households as well as to invest in nature- and climate-related measures. Fossil fuel subsidies reform in, for example, Nigeria and some Latin American countries illustrates how such approaches can achieve public support despite higher energy prices.[87]

6.2 Coordinating technical assistance to improve debt sustainability

Those engaged in the field of sovereign debt need high levels of expertise; integrating nature and climate risks adds further complexity. If the recommendations in this report are adopted, economic, fiscal and financial decision-makers will need to access better data, absorb new knowledge and adopt different analytical methods.

Technical capacity is already an issue for many smaller EMDCs, which lack the data, coordination or resources of larger, higher-income countries or of private creditors. The imbalance in expertise is most stark during sovereign debt restructurings, where creditors always have much greater resources and expertise at their disposal than borrower countries. Capacity gaps are a perpetual problem for many EMDCs, particularly those where small populations and tax bases limit the size of government and therefore its capacity to develop and retain specialized skills. Many EMDCs are interested in exploring simple forms of contingency, debt swaps, sustainability-linked finance and other measures, but lack the in-house expertise to assess and implement them. EMDCs can buy advisory services, but they are very expensive and hard to internalize.

Similarly, economic, fiscal and financial decision-makers will not be able to incorporate climate and nature into their analyses and models without good data. But at present, the availability of country-level data on nature and climate risks, nature- and climate-related investments and their costs and benefits is patchy: good in some countries and in relation to some types of risks and measures; poor in most others.

Technical assistance is available for EMDCs looking to improve their debt management and negotiate with creditors, but the landscape is fragmented and difficult to navigate. A wide range of institutions provide relevant technical assistance, including the Coalition of Finance Ministers for Climate Action, the Sustainable Sovereign Debt Hub, the UN Development Programme (UNDP), UN Trade

and Development (UNCTAD), the UN Regional Economic Commissions, the IMF, the World Bank and the regional development banks. However, the proliferation of options, besides being inefficient, can make it difficult for EMDCs, particularly low-income countries, to identify and access the specific, sustained support they need. The small island developing states are now in the process of setting up a Global SIDS Debt Sustainability Support Service designed to bring such advice into one place.[88]

Similarly, many organizations have worked hard for many years to improve the data available to economic, fiscal and financial decision-makers. Some of this information is publicly available, including that generated by the IMF, MDBs, UN agencies and other intergovernmental organizations, research institutes and civil society organizations. Some of the information is proprietary or paywalled, including that generated by insurance companies, credit rating agencies, financial advisors, energy companies and universities. Recent breakthroughs in artificial intelligence have the potential to dramatically improve risk modelling, scenario development and data integration to enhance predictive capabilities, but it is not clear that these data will be publicly available or easily affordable.

Many EMDCs are interested in exploring simple forms of contingency, debt swaps, sustainability-linked bonds and other measures, but lack the in-house expertise to assess and implement them.

We therefore recommend the establishment of a 'one-stop shop' or single platform bringing together the various technical assistance, capacity-building and data initiatives and services available to support EMDCs on debt issues. Such a platform could build on the Global SIDS Debt Sustainability Service. It would require collaboration between the MDBs, IFIs, UN agencies and regional UN economic commissions working in this field. It would be responsible for systematically mapping the different services available and coordinating providers to ensure more tailored, seamless advisory services to finance ministries in EMDCs, particularly the poorest and most credit-constrained countries. The support available from the one-stop shop platform might encompass domestic resource mobilization, capital market development, hazard and vulnerability assessments, nature- and climate-smart macro-financial modelling, legal services for debt contracts and negotiations (including integrating simple forms of contingency), and the design of debt swaps and sustainability-linked instruments.

Another function which the platform could perform would be to enable borrowers to provide mutual support and advice to one another (South-South exchange). There are at present few places where borrowers can meet, combine expertise and exchange experiences and best practice. A coordinating platform could provide such a forum. By integrating improved debt management with the design of appropriate investments and financial instruments, and better economic and financial analysis, EMDCs have the potential to achieve the virtuous circle of low-carbon, climate-resilient and nature-positive development: of healthy debt on a healthy planet.

Annexes and references

Annex 1. **A stock-flow consistent model: EIRIN**

EIRIN is a stock-flow consistent macro-financial model that has recently been used by a number of development finance institutions, central banks and financial regulators, including in several low-income and emerging countries. These include:

- the World Bank for the analysis of the macro-financial implications of the compounding of COVID-19 and climate physical risks in the Caribbean and South East Asia;[89]
- the NGFS in the development of its short term climate scenarios;[90]
- the G24 and V20 Climate, Development and the IMF Task Force for the analysis of spillover climate risks and sovereign debt sustainability in Indonesia[91] and in Barbados[92]; and
- the European Central Bank to assess the materiality of climate risks in the Euro Area economy and banking sector.[93]

EIRIN's macrofinancial simulations have also been used in climate stress tests of the financial system used by several central banks.[94]

In terms of structural characteristics, EIRIN includes a limited number of heterogeneous agents and sectors of the economy and finance (including a central bank, banks, insurance and a financial market), which are modelled as a network of interconnected balance-sheet items.[95] EIRIN's agents are heterogeneous in terms of skills, wealth, income and preferences. They are characterized by bounded rationality and adaptive expectations, and are subject to incomplete information. This means that shocks (such as a sudden change in the carbon price) are not fully anticipated, leading to more persistent effects (such as on inflation) than in conventional models, which in turn can trigger monetary policy responses. The impact of shocks can be tamed by delays in price and wages adjustment.

The model is calibrated to reproduce historical data and other official projections of the economy and real policy responses.

EIRIN can represent the out-of-equilibrium macrofinancial response of the economy under a range of fiscal and monetary policies (including unconventional monetary policies), prudential regulations and their interaction. It is therefore particularly suitable for analysis of debt dynamics and sustainability.[96]

Annex 2. **Financial design of F2C2**

A more detailed proposal on how a F2C2 could be structured can be found in Kraemer and Volz (2024).[97]An analysis of the NDCs of LICs and LMICs suggest that the total cost of implementation would stand near $5 trillion, with LICs accounting for $300 billion (or 6% of the total).

At this stage we propose to cap F2C2 at $1 trillion – 20% of the total estimated NDC cost. Of this $1 trillion, a minimum of $100 billion should be reserved for LICs, which is slightly higher than their share in global GDP, reflecting their weaker alternative funding opportunities

The proposed size of F2C2 of $1 trillion is very large. For comparison: the total outstanding debt of MDBs at year-end 2023 stood at $2 trillion (S&P Global Ratings, 2024).[98] Still, it is only a little more than the €807 billion (or $870 billion) of the commitments made by EU members alone for the Next Generation EU (NGEU) recovery programme. If F2C2 runs for one decade, its annual issuance of $100 billion amounts to a mere one-hundredth of global annual sovereign borrowing (estimated at $12.3 trillion in 2025). The cumulative issuance of $1 trillion would amount to less than 1.5 percent of the total current level of the commercial sovereign debt stock, estimated at over $76 trillion in 2024.[99]

The implementation period will be over ten years. This period reflects the limited absorption capacity of receiving countries. In other words, an average of up to $100 billion a year could be issued by F2C2 green bonds, providing a liquid market. The repayment period will be stretched over fifty years. If the repayment were to stretch from 2030 to 2080, this would equate to an average annual repayment of $20 billion, less than 10% of the official development aid provided by donors in 2024 ($223 billion, OECD). In fact, the amounts that donors will need to mobilize are likely to be smaller still, as some of the repayments will be made by recipient countries in the LMIC category and by private sector project investors, as outlined in Section 5.1 of this report.

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