Finance for climate action

Scaling up investment for climate and development

Report of the Independent High-Level Expert Group on Climate Finance

November 2022

Finance for climate action: scaling up investment for climate and development

Vera Songwe, Nicholas Stern and Amar Bhattacharya

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The COP26 and COP27 Presidencies, together with the UN Climate Change High-Level Champions, launched a new Independent High-Level Expert Group on Climate Finance last July, co-chaired by Vera Songwe and Nicholas Stern. Amar Bhattacharya was appointed as the Executive Secretary of the Group. The members of the group are indicated on the following page. Eléonore Soubeyran served as the Secretariat of the group. This independent group was tasked to help develop and put forward policy options and recommendations to encourage and enable the public and private investment and finance necessary for delivery of the commitments, ambition, initiatives and targets of the UNFCCC Paris Agreement, further reflected within the Glasgow Climate Pact, building momentum and further action for the Sharm el-Sheikh agenda and beyond.

This report, which was prepared by the co-chairs and the Executive Secretary, benefitted enormously from the active and high-quality participation, guidance and input of the members of the group. The views expressed are the responsibility of Vera Songwe, Nicholas Stern and Amar Bhattacharya and not necessarily those of individual members, nor does the report purport to represent the views of either the COP26 or COP27 Presidencies or the Climate Champions.

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A critical moment for climate action (Section 1)

Our world is in peril: the climate crisis is accelerating. Current action is too weak and too slow; to delay is dangerous. This is also a moment of great opportunity. One path leads to attractive growth and development, the other to destruction, catastrophe and loss of lives and livelihoods on a massive scale, especially for the vulnerable. As shown by each successive report from the Intergovernmental Panel on Climate Change, climate change is occurring at a faster pace than previously anticipated, the impacts and damage are greater than foreseen, and the time for remedial action is rapidly narrowing. Emissions are still rising and tipping points getting closer. What happens in this decade is decisive for the world.

Acting on climate is about transforming our economies, particularly our energy systems, through investing in net zero, adaptation, resilience and natural capital. That investment leads to a much better form of growth and development than the dirty and destructive pathways of the past. There are new technologies, which are costing less and less, and a growing realisation of the tremendous co-benefits, including for health and general wellbeing, that come with climate action. Acting decisively will deliver not only on climate but on strong and inclusive growth and development and the drive towards the attainment of the Sustainable Development Goals. It is the growth story of the 21st century: sustainable, resilient and inclusive.

Achieving this transformation will not be easy. It requires strong investment and innovation, and the right scale of finance of the right kind and at the right time. This report sets out the investment that will be necessary and how it can be financed. It is finance for action; the action, particularly the investment, that can deliver on the agreements made at COP21 in Paris and COP26 in Glasgow. And the challenges require action across the board: on mitigation, adaptation/resilience/damage, and natural capital.

The failure to deliver the climate finance commitment of $100 billion per year by 2020 made by developed countries at successive COPs has eroded trust. According to the latest assessment of delivery plans, the $100 billion commitment will be met only in 2023, three years past the target date, and only then mainly because of increased financing from the multilateral development banks (MDBs). Bilateral public finance, which is the most important indicator of the direct contribution by developed countries, has not increased measurably since 2016 and there remain important shortfalls in its quality. The delivery of the $100 billion is an immediate task, but governments of developed countries need to go well beyond that, starting now.

The world needs a breakthrough and a new roadmap on climate finance that can mobilise the $1 trillion per year in external finance that will be needed by 2030 for emerging markets and developing countries (EMDCs) other than China. There is a significant role for public policy and government action to foster investment, and complementary roles for the private sector, MDBs, international financial institutions (IFIs), and concessional finance of various forms. Powerful multipliers can emerge from the complementary strengths of all sources of finance.

In particular, the realisation of the necessary investments and their finance requires:

- **Accelerating investment**: Rapid delivery of investment projects, at scale
- **Mobilising private finance at scale**: The private sector making the largest increase in financing, both foreign and domestic
- **Revamping the role of MDBs**: Stepped-up engagement and tripling of the annual flows from the MDBs and other development finance institutions (DFIs) in the next five years
- **Delivering on and expanding the scope of concessional finance**: A doubling of concessional finance from rich countries by 2025 from 2019 levels, together with strong expansion of the envelope of low-cost finance through innovative ways (including special drawing rights, voluntary carbon markets, philanthropy, and guarantees similar to those of the International Financing Facility for Education [IFFED])
- **Tackling indebtedness**: Resolving the debt and liquidity issues facing many countries.

These actions will also play a crucial role in fostering the recovery of the world economy and tackling its short-term pressures. At the same time, the rapid movement away from fossil fuels will radically reduce the likelihood of energy crises in the future.

The argument is therefore about what is necessary for delivery of the Paris Agreement, reinforced by the Glasgow Pact. It is about implementation. In this sense it is a deductive argument or an 'engineering approach', given the objectives the world wisely set in Paris. More than being 'nice to have', in the hope that 'we'll get there in the end', it is what the world *has* to do, rapidly, this decade, to mitigate the terrible dangers we now face. That is the starting point for working out the different kinds of finance that must be involved. At the same time, doing what is necessary for climate will deliver a new form of development. And it will help protect our precious natural resources and biodiversity.

Scope of the paper

The logic of this paper follows from the logic of delivering on the goals of the Paris Agreement and the Glasgow Pact. The first part (Sections 1– 3) focus on this purpose and the necessary investment and actions, drawing on earlier work on the analysis of investments by members of the group and others. The second part (Sections 4–9) is about the scale and nature of the different forms of finance that are necessary for this investment and how they complement each other. Section 10 is on how the framework and the key elements described can be taken forward through our systems for international collaboration, while Section 11 concludes with overall next steps.

The paper is intended to provide a framework for finance for climate action covering the overall needs for the comprehensive approach embodied in the Paris Agreement and UNFCCC. All the elements are necessary and urgent; it is a complementary and mutually supportive package. Most of the actions must start now; it is the science and the world's perilous condition that set the urgency and timing. The paper also looks ahead to the coming decade and beyond. We do not attempt to provide great detail on every element of the package, but we are clear that there is a practical way forward on each.

A major, rapid and sustained investment push (Sections 2–4)

A major push is needed to drive a strong and sustainable recovery out of current and recent crises, transform economic growth, and to deliver on shared development and climate goals, in particular those agreed at COPs 21 and 26. While the investment push is needed across all the Sustainable Development Goals, the key investment and spending priorities to ramp up climate action and deliver on the Goals must encompass:

- **The transformation of the energy system,** which is vital for both development and climate.
- **Responding to the growing vulnerability of developing countries to climate change.** This will mean greatly accelerating investments in adaptation and resilience and much better mechanisms to deal with loss and damage.
- **Investing in sustainable agriculture and restoring right away the damage human activity has done to natural capital and biodiversity** in terms of degraded land, deforestation, and damage to water supplies and the oceans.

For all three of these priorities, timing is crucial; delay is dangerous. Developing countries will not be able to meet these goals on their own. Developed countries have a crucial responsibility from the standpoint of climate justice, given historical responsibilities and the interrelationship with poverty reduction. Acting strongly is also in their own self-interest.

The starting point for a big investment push must be strong country leadership and actions. Investment demand depends critically on confidence in future pathways, and therefore all countries need to set out well-articulated investment programmes to stimulate recovery and transformation. These programmes should be anchored in sound and convincing long-term strategies to deliver on development and climate goals. The programmes need to be translated into concrete pipelines of projects and supported by a favourable investment climate. Clarity and credibility over the medium term are crucial if potential investment opportunities are to become investment realities.

All countries need to build the institutional capacity that can shape and manage the long-lasting investments needed in sustainable infrastructure, to reform policies that can ensure the quality and sustainability of the investments, including carbon pricing and removal of distortionary subsidies, and to provide supportive standards and regulations.

Country/sector platforms driven by countries can bring together key stakeholders around a purposeful strategy, scaling up investments, tackling obstacles or binding constraints, ensuring a just transition and mobilising finance, especially private finance. **Regional and sub-regional platforms** can also play an important role in accelerating investments and mobilising the necessary finance.

Recasting domestic and international finance for sustainable investment (Section 5)

The scale of the investments needed in EMDCs over the next five years and beyond will require a debt and financing strategy that tackles festering debt difficulties, especially those of poor and vulnerable countries, and that leads to a **major expansion of both domestic and international finance, public and private, concessional and non-concessional.**

Emerging markets and developing countries other than China will need to spend around $1 trillion per year by 2025 (4.1% of GDP compared with 2.2% in 2019) **and around $2.4 trillion per year by 2030** (6.5% of GDP), on the specific investment and spending priorities

identified above. These numbers are based on the analytical work set out in Bhattacharya et al. (2022) assessing sector and geographical requirements for investments and actions to keep the target of capping warming at 1.5°C in reach and to meet the goals of the Paris Agreement across all its dimensions. The numbers are broadly consistent with the work of the International Energy Agency and the Energy Transition Commission. They are translated in this paper into UNFCCC and COP climate investment and spending categories, rather than by sector. They are the per-annum flows necessary in the years indicated.

An overall financing strategy must be built, based on a granular understanding of the different areas being financed. It would utilise the complementary strengths of different pools of finance to ensure the right scale and kind of finance for different needs. It would blend finance with different costs and maturities, including grants and concessional finance, in order to match the financial returns and risks from investments. It would therefore consider different strands of finance as a complementary package, rather than simply focusing on the aggregate number. It would align all finance with sustainability, including climate goals, in line with Article 2 of the Paris Agreement, and it would create the necessary financing partnerships to deliver concrete results.

Around half of the required financing can be reasonably expected to come from local sources, from strengthening domestic public finance and domestic capital markets, including tapping into large pools of local finance that national development banks are able to mobilise. Strengthening tax collections and reducing fossil-fuel-linked subsidies will be important, partly for the fiscal space freed up and partly for the improvement in incentives for private investment that is created when instruments like a carbon tax are applied. The focus of this report, however, is on external financing, so these local financing issues are not treated in depth, although they are integral to the judgement that around $1 trillion per year of external finance will be required by 2030 to meet the scale of the investment needs.

These aggregates are therefore very different from the famous '$100 billion per year by 2020' target, negotiated first in Copenhagen at COP15 in 2009 (and part of the Copenhagen Accord), and embodied in the agreements of COP16 in 2010 in Cancun, and COP21 in 2015 in Paris. **The $1 trillion per year is a very different concept – it is a requirement based on an analysis of the investment and actions necessary and the domestic finance potentially available, for an internationally agreed and vital purpose. The $1 trillion is not the new $100 billion.** The latter was negotiated, not deduced from analyses of what is necessary for a purpose.

Tackling debt difficulties (Section 6)

One-third of all developing countries and two-thirds of low-income countries are at high risk of debt distress. Despite the evident deterioration in creditworthiness, in most cases the debt issue appears not to be one of over-indebtedness or lack of solvency but of liquidity and roll-over problems.

Three big issues need to be managed:

- **A growing risk of a liquidity** problem in many countries
- **A debt-overhang** problem in a small set of countries
- **A debt-as-insurance** problem in climate-vulnerable countries that leads to a vicious cycle of climate and debt vulnerability.

Tackling these debt difficulties will require a comprehensive approach with tailored solutions. This includes expanding access to low-cost official liquidity facilities; expanding

the envelope of low-cost finance; including systematic debt-suspension clauses in loan contracts in the event of a natural disaster, as pioneered by Barbados; improving the functioning of the G20 Common Framework; modifying criteria for allocating concessional finance to include climate vulnerability; and expanding the use of debt/climate/nature swaps.

Tapping the potential of private investment and finance (Section 7)

There is great potential and need to increase private sector investment and finance, given the constraints on fiscal space and the dynamism that the private sector can bring to the transformation agenda. A growing proportion of investments can now be undertaken by the private sector. It is also feasible since the investments required to deliver the net zero transition in EMDCs also represent a tremendous opportunity for private finance. Momentum is growing among mainstream investors, driven in part by the growing commitment to net zero. However, private finance being mobilised today is far too little and will have to increase many times over.

Several private-sector-led initiatives have been launched over the past two years to scale up finance for sustainable investments in EMDCs. In particular, the Glasgow Financial Alliance for Net-Zero (GFANZ) provides an overarching framework for private sector commitment and action. These initiatives should work together proactively and in partnership with the MDBs and countries to tackle impediments including the bottlenecks and obstacles in the investment climate, identification and development of projects, and reducing, sharing and managing risks to **bring down the cost of capital.** This is crucial if the necessary investments are to be financially viable. **That means assessing, reducing, managing and sharing risk** much more actively and effectively than hitherto, by setting up structures to tackle specific risks in partnership with the public sector.

While there is broad private sector commitment to align with climate goals and increase financing for climate action, there is now a need to develop concrete and standardised approaches that can unlock institutional capital at scale. Asset owners and other stakeholders need to be incentivised to come up with more 'plug in and play' solutions. We can learn from some of the most promising innovations such as the International Finance Corporation's Managed Co-Lending Portfolio Program (MCPP), which mobilises new sources of capital for sustainable infrastructure, the Africa50 platform, the Amundi Green bond fund or Climate Fund Manager's structured funds, which blend public and private sector funding and guarantees to mobilise institutional capital.

Central role of the MDBs and DFIs (Section 8)

We have seven recommendations to facilitate a major revamp and reorientation of the multilateral development bank and development finance institution systems, which must happen for the Paris Agreement and UNFCCC goals to be reached:

- **Working as a system, the MDBs should engage with countries and the private sector to play a purposive and proactive role in helping countries define, identify, enable and foster the investments and programmes necessary** for the implementation of the Paris Agreement, reinforced by the Glasgow Pact. This should include strong support for country and regional platforms.
- **A large scale-up in the collaboration between MDBs and the private sector is warranted**, given the major role of the private sector in the necessary investments and their finance.

- **The MDBs must significantly increase their work with the public sector and authorities to enable the large necessary public investments** that are core to the overall necessary investment programmes.
- **The MDBs and their shareholders must explicitly recognise that these tasks require a multiplying of their flows of finance by a factor of three in the next five years.** This would also make the cost of capital manageable. Collaboration with the DFI system can be a powerful element here.
- **This scaling up of financial flows from the MDBs can be built in part on more effective utilisation of the capital already available,** including by applying the ideas of the valuable recent report on capital adequacy commissioned by the G20.
- **Shareholders must recognise that capital increases for the MDBs over the coming five years will be required to achieve the necessary three-fold increase in flows,** and that the ideas from the Capital Adequacy Frameworks (CAF) (including the greater use of guarantees) and the capital increases required are very low cost to the budgets of country-shareholders in relation to the flows of resources released. In the language of finance ministries, they are extraordinary 'value for money'.
- **Beyond the MDBs, there is great potential to harness the entire public development bank system.** Bilateral DFIs can greatly step up their support for green investments, and local development banks are best placed to provide a powerful impetus to local lending, longer horizons, public domestic resources, and local capital markets. Creating a new architecture of cooperation among development banks, as the Finance in Common initiative is trying to do, can be a powerful means to accelerate climate investments.

Criticality of delivery and expanding the scope of concessional and low-cost finance (Section 9)

The major reason for the shortfall in the delivery of the $100 billion commitment has been the inadequate growth in official concessional finance. Donors must double their delivery of climate finance by 2025 from 2019 levels, including more than doubling finance for adaptation and climate resilience if the package of complementary finances for the delivery of the Paris Agreement, reinforced by the Glasgow Pact, is to be realised. They must also improve the effectiveness of their support by aligning more strongly with country priorities, enhancing access and bolstering support for the key multilateral climate funds, including the Green Climate Fund and the Adaptation Fund.

We see five promising and innovative options to mobilise low-cost finance:

- **Augment the use of special drawing rights (SDRs) for climate finance by bolstering further the Resilience and Sustainability Trust** established in the IMF; modernise the architecture for rechannelling SDRs so that they can be used more easily and expand channels of use to MDBs and regional institutions; augment the pool of SDRs through regular issuance as envisaged in the Articles of Agreement; and leverage SDRs to catalyse private finance.
- **Tap voluntary and compliance carbon markets** for priorities such as restoration of forests, peatlands and degraded land and the accelerated phase-out of coal.
- **Create an International Financing Facility for climate at the global and regional levels** to leverage finance through use of guarantees, as has been done successfully for education.

- **Leverage the growing flows of private philanthropy** to foster partnerships and mobilise finance for priority goals such as the Global Energy Alliance for People and Planet (GEAPP).
- **Harness the growing potential for South–South cooperation.**

All these options can help deliver finance at the right scale, of the right kind and cost, and in the right timeframe. **Powerful multipliers can emerge from using all sources of finance**, from collaboration across countries and institutions, from the instruments of the MDBs and IFIs, and from working with the private sector. There is now a great opportunity to join up public and private initiatives to deliver results country by country, supported by structured partnerships among key stakeholders.

Alignment with Article 2.1c of Paris Agreement (Section 10)

The Paris Agreement's Article 2.1c is the orienting goal for a concerted effort to make all forms of finance – public and private, domestic and international – and all instruments "consistent with a pathway towards low greenhouse gas emissions and climate-resilient development". Discussions under the UNFCCC agenda have increasingly been complemented by wider institutional structures and efforts towards a sustainable finance architecture, with many interlocking parts. These initiatives have the potential to tilt incentives powerfully away from the financing of high-carbon investments towards low-carbon and sustainable projects. There is a need, however, for greater coherence and better benchmarking to achieve the greatest impact and avoid potential greenwashing. The ideas in the McKenna report (UN High-Level Expert Group on the Net-zero Emissions Commitments of Non-State Entities, 2022) prepared for the UN and COP27 will be valuable here.

Several strands of action are under consideration and can lead to a more effective system of sustainable finance:

- Creating common language and standards for sustainability to bring coherence to the pursuit of system-wide alignment given the multiplicity of initiatives
- Strengthening the role of central banks and regulators in the drive to net zero, including through the work of the Network for Greening the Financial System
- Tackling systemic bottlenecks that create disincentives to significantly increasing sustainable finance, including those associated with slow progress on government policies such as carbon pricing, information asymmetries at the geographical and sector/technology level, and unintended consequences arising from financial sector regulation
- Putting asset management strategies in place that align with net zero
- Supporting the sustainable finance agenda in EMDCs in a way that takes account of their development circumstances.

The work of the Coalition of Finance Ministers for Climate Action can add greatly to cross-country collaboration and consistency here.

The way forward (Section 11)

A big investment push to enable EMDCs to meet their climate and related development goals will require external financing of $1 trillion per year by 2030. The urgency of action means this financing effort must be frontloaded with a roadmap for delivery and implementation starting now. Below we set out how international action can move forward, based on four key pillars: strategy for investment; rapid scale up of MDBs and

DFIs; new partnerships between private sector, countries, and IFIs; and concessional and innovative forms of finance.

1. Strategy for investment

Each country should put in place its own strategy for investment that is aligned with the Paris Agreement and UNFCCC goals, embodying a 'big push' to finance investment in EMDCs, and tailored to its own circumstances and opportunities. That strategy should be created in collaboration with potential partners and investors and would form the country platform that shapes the investment climate and unlocks investments at scale. Clarity and credibility are key to investor confidence. The MDBs/DFIs have a crucial role to play in support of the development of strategies and policies and institutions for their delivery.

2. Scaling up MDB/DFI support and finance

The scaling up of finance must start with the MDBs, especially in the current circumstances of limited fiscal space and difficult financing conditions. If, as is necessary, the flows of finance from the MDB and DFI systems are to be multiplied by three within five years (from $60 billion to $180 billion), then decisions must be taken very rapidly. That means moving forward strongly and purposively at the spring and annual meetings of the MDBs in 2023, at COP28, and at the G20/G7. India's presidency of the G20 is a special opportunity. This scaling up will involve both shareholders and management moving together urgently with a shared vision and programme for action. This would be the biggest transformation of MDBs since their foundation. It will need clear and committed management leadership and strong support from shareholders.

The cost to shareholder budgets will be very modest in relation to the resources released. There will need to be a reorientation towards strong collaboration with the private sector and bringing down the cost of capital and a recognition that much of the necessary investment will be in middle-income countries.

Beyond the MDBs, there is great potential to harness the entire public development bank system. Creating a new architecture of cooperation among development banks, as the Finance in Common initiative is trying to do, can be a powerful means to accelerate climate investments.

3. New private sector, country and IFI partnerships

The GFANZ initiative set up at COP26 was a crucial advance in securing private sector commitment to support climate investments in EMDCs, building on earlier private sector initiatives. The challenge now is to translate that commitment into real private sector investment and finance at scale. As well as requiring EMDCs to create policies and conditions for investment through country platforms, this will entail direct involvement from the private sector, domestic and international, to help create those conditions, including by identifying and helping with solutions to difficulties and obstacles. The recent effort by the Climate Champions to engage GFANZ in specific investment opportunities in different regions can be built on to establish much closer interaction between investors and investment opportunities. There is also a range of actions on transparency and clarity of commitments in the private sector itself, as the McKenna report has underscored. Much work is underway across different initiatives, but there is an urgent need for acceleration of action and coordination.

4. Concessional and innovative finance

Bilateral official development assistance (ODA) for climate should be doubled by 2025 from its 2019 level, from $30 billion to $60 billion, building on the G7 Carbis Bay commitments, given the strong element of concessionary financing that is needed for

implementation of the Paris Agreement, reinforced by the Glasgow Pact. That will need decisions now in the budgets of donor nations. The internal politics of such action are never easy and current pressures are severe, but it is important that the necessary action is recognised by the G7 but also beyond, by all richer countries. By increasing ODA, richer countries are making powerful investments in their own future climate, in the recovery of the world economy, and in global energy security.

A big push is also needed in expanding the envelope of low-cost and debt-free finance. There is great potential to expand the pool of SDRs through regular issuance and to utilise it to bolster the Resilience and Sustainability Trust and expand the channels and leveraging of SDRs – for example, by creating SDR-based trust funds, as the Bridgetown Initiative has proposed. Voluntary and compliance carbon markets can also generate substantial debt-free finance if supported by strong frameworks to ensure integrity in both the supply and demand for credits.

Philanthropical organisations are moving strongly and together to support climate action and they can help catalyse financing for priority needs such as just transitions and investments needed in the poorest countries. A mechanism akin to an International Financing Facility for climate at the global and regional levels could expand the pool of low-cost finance through use of guarantees. Altogether, these initiatives could mobilise $50–75 billion of additional low-cost finance by 2025 and more than double that by 2030.

Finally, there is a great scope to tap South–South cooperation to create more partnerships to scale up green investments, especially renewables, as much as to mobilise finance.

On all these fronts the world needs decisions and progress in 2023. COP27 is a crucial moment to set out this agenda for action, not only in terms of a framework for beyond 2025 and the next decade, but also on what has to be done now. All the above ways forward involve decision and action during 2023.

With concerted action on the part of all stakeholders, working from a framework set out at COP27, the world can create a breakthrough and a new roadmap that can mobilise the $1 trillion per year in external finance that will be needed by 2030 to deliver on climate and related development goals for emerging markets and developing countries. This decade is decisive, and decisions and action are necessary now.

1. A decisive moment in world history

Humanity is at a crossroads – a moment of great risk and great opportunity. One path leads to attractive growth and development; the other to great difficulties and indeed destruction.

Even before the COVID-19 pandemic, emerging markets and developing countries (EMDCs) were facing challenges of slowing growth, stagnant productivity, growing inequality, and pressures on social cohesion. The pandemic and the global response have exacerbated underlying vulnerabilities and have imposed huge human and economic costs on developing countries. Inflationary pressures and financial conditions have worsened since the start of the war in Ukraine, putting further strain on EMDCs. Fiscal space has been greatly reduced across EMDCs and many low-income countries are facing severe debt distress.

The present trajectory is one of slow growth, low investment and public spending, and rising debt service burdens in many, if not most, EMDCs. These economies are at a juncture where high debt and slow recoveries are tilting the balance towards so-called fiscal prudence, with real risks of economic stagnation.

At the same time, the urgency and opportunity of tackling climate change is becoming ever clearer. As shown by each successive report from the Intergovernmental Panel on Climate Change, climate change is occurring at a faster pace and with ever more severe impacts than previously anticipated and the time for remedial action is rapidly narrowing.

Our understanding of climate action has also changed in the past decade. Acting on climate is not a cost as many have propounded but rather an opportunity to unlock new and better forms of growth. New technologies have been developed at rapidly falling costs, and there is a growing realisation of the tremendous co-benefits that come with climate action: cities where we can live and breathe; fruitful ecosystems; and new waves of innovation and learning. Acting strongly will deliver not only on climate but also on strong and inclusive growth and the attainment of the Sustainable Development Goals. It is the growth and development story of the 21st century.

There is a real opportunity to make a breakthrough on both development goals and climate, building on the progress achieved by EMDCs and new technological options that can deliver improved results. EMDCs will account for the vast preponderance of new physical capital in the coming three decades. How these investments are undertaken will determine the success of reaching net zero emissions by mid-century, achieving climate resilience, restoring natural capital and accelerating the development of human capital.

Seizing that opportunity will require a clear strategic direction, strong and purposive policies, a massive scaling up and shift in investment and the mobilisation of the right finance at the right scale.

2. Where are we on climate finance?

Climate finance has been a central element in the climate accords from the outset. In particular, developed countries' commitment to mobilise $100 billion a year by 2020 to support developing countries on climate action is both an intensely important symbol of trust and foundational to progress on climate action by developing countries.

Recent analysis from CPI (2022a) suggests that global finance flows for climate action have almost doubled over the past decades to reach $653 billion in 2019/20, up from $574 billion in 2017/18 (ibid.). The UNFCCC's Standing Committee on Finance (2022b) provides higher figures, with climate flows amounting to $803 billion in 2019/20, up from $775 billion in 2017/18. What is clear from both assessments is that global climate finance has increased substantially over the past decade but still falls short of the amount needed to avoid the worst impacts of climate change and support adaptation and resilience in vulnerable countries.

Climate finance flows are unevenly distributed across geography, sectors and themes (see Appendix 1 for a detailed analysis of climate finance trends in 2019/2020 based on CPI, 2022a and UNFCCC Standing Committee on Finance, 2022a). Most financing remains in its country of origin (76% of climate finance in 2019/2020 was raised domestically) and is primarily concentrated in the advanced economies of East Asia and the Pacific (dominated by China), Western Europe and North America. In 2019/20, these regions attracted the majority of private finance (81%), while public finance accounted for the largest source of funding in many climate-vulnerable regions (86% in Sub-Saharan Africa, 63% in South Asia). Finance for adaptation and crosscutting activities is lagging, with 90% of total climate finance targeting mitigation activities, and in particular energy systems (51%) and transport (26%). Most climate finance (63% in 2019/2020) was raised as debt, of which only 16% (or $61 billion) was low-cost or concessional.

While there has been progress in both bilateral and multilateral public finance flows since 2013, the commitment to deliver $100 billion a year by 2020 was not met (with a shortfall of around $17 billion in 2020) and will likely only be achieved in 2023 (see Appendix 1), largely because of increased financing from the multilateral development banks. Bilateral public finance, which is the most important indicator of the direct contribution by developed countries, has not increased measurably since 2016 and there remain important shortfalls in its quality. The delivery of the $100 billion is an immediate task, but we need to go well beyond that, starting now.

Public finance accounted for more than 70% of total climate finance provided to developing countries between 2013 and 2020, while the mobilisation of private finance by developed countries has been relatively modest. Forward-looking modelling by the Organisation for Economic Co-operation and Development (OECD) (2021) indicates that the $100 billion goal could be achieved by 2023 and surpassed thereafter (see Table 2.1 below for an overview of the most recent assessments by the OECD, the biennial assessments by the Standing Committee on Finance, and the biennial reports by countries).

Beyond scaling up, there is also a pressing need to tackle shortfalls in the *quality* of finance provided and mobilised. A review of recent analysis by the OECD highlights a number of areas for progress (see Appendix 1), including:

- Poor predictability: The quick delivery of the $100 billion goal will be essential to rebuild trust and provide developing countries with assurance of predictable support.

- An inadequate focus on adaptation and on poor and vulnerable countries: Most financing between 2016 and 2020 focused on mitigation activities in developing countries (67%) and largely targeted high-emitting countries. The share of finance for adaptation out of total climate finance in Africa is higher than in most regions but still only amounted to 34% in 2016–2020, despite the high vulnerability and exposure of the continent to climate impacts. While adaptation activity was low in most regions, nearly half of climate financing provided for Small Island Developing States (SIDS) and Least Developed Countries (LDCs) focused on adaptation. Further, climate finance is highly concentrated in a few economic sectors, with most mitigation finance targeting the energy and transport sectors.
- Difficulties in access to climate finance, especially by poor and vulnerable countries: Access to finance for large-scale projects, whether from public or private sources, has proved challenging for poor and vulnerable countries. The mobilisation of private finance by developed countries has mainly taken place in middle-income countries with relatively low risk profiles (OECD, 2022a). In addition, the complexity of application processes to access financing, for example from multilateral climate funds, has posed significant challenges for SIDS and LDCs (Caldwell and Larsen, 2021; Garschagen and Doshi, 2022). Delays in disbursements of climate finance to activities in developing countries also need to be addressed (UNFCCC, 2017).
- A low share of grants: Loans (both concessional and non-concessional) accounted for the largest share of public climate finance between 2016 and 2020, amounting to 72% of the total public finance provided, while grants provided only 26% of financing. The instrument split varied significantly between provider types, with multilateral climate funds and bilateral aid agencies committing more funds as grants compared with MDBs and bilateral development finance institutions (OECD, 2022a). The low share of grants provided is a particular concern in a context in which many developing countries are now facing severe debt stress against the background of unprecedented crises (World Bank, 2022a).

As part of the climate finance Delivery Plan, most developed countries have now committed to work with developing countries to increase MDBs' ambition on climate finance, and to work with MDBs and climate funds to enhance access, in particular for SIDS and LDCs (COP27, 2022). Financing by MDBs in 2021 exceeded their 2025 climate finance goals (see Appendix 1). Developed countries have also come together to improve the effectiveness and ambition of climate funds, including by collectively committing $5.33 billion to support the eighth replenishment of the Global Environment Facility in April 2022.

With regard to adaptation finance, developed countries are taking important steps to improve accountability and transparency, as well as improve overall ambition: for example, the 2022 Delivery Plan reports that 12 countries have set adaptation finance commitments for 2025, several of which involve a doubling or more. Several bilateral donors have indicated an intention to ramp up finance for adaptation based on a substantial increase in MDB financing. Given that those rely on raising additional funds from the capital market, an increasingly important role for debt finance could be expected in future international public climate finance.

Table 2.1. Assessments of finance provided and mobilised by developed countries for climate action in developing countries (US$ billion)

	2013	2014	2015	2016	2017	2018	2019	2020
Public finance from developed countries provided via bilateral, regional and other channels								
Biennial assessment (BA), 2022[1]	23.1	23.9	29.9	33.6	28.1	31.8	31.9	31.4
Biennial reports (BRs), 2, 3 and 4[2]	23.1	23.9	29.9	33.6	33.8	33.8	n/a	
OECD, 2022b	22.5	23.1	25.9	28	27	32	28.7	31.4
Officially supported export credits from developed countries								
BA, 2022	Not reported separately						n/a	
OECD, 2022b	1.6	1.6	2.5	1.5	3	2.7	2.6	1.9
Public climate finance attributed to developed countries provided via multilateral channels								
BA, 2016, 2018, 2020, 2022[3] Multilateral climate funds (including UNFCCC funds)	1.9	2.5	1.4	2.4	2.2	3.1	2.9	3.5
MDB climate finance	14.9	16.6	17.4	19.7	24.1	25.8	30.5	33.2
BRs, 2, 3 and 4[4]	14.3	16.4	12.8	13.1	17	19.7	n/a	
OECD, 2022b	15.5	20.4	16.2	18.9	27.1	30.5	34.7	36.9
Total public climate finance provided by developed countries								
BA (aggregated based on data reported in the BA as above)	39.9	43	48.7	55.7	54.4	60.7	65.3	68.1
BRs, 2, 3 and 4[5]	40.5	43.2	49.3	49.3	52.2	52.2	n/a	
OECD, 2022b	39.5	45.1	44.6	48.5	57.1	64.8	66	70.2
Private climate finance mobilised by developed countries								
BA, 2022	12.8	16.7	13.2[6]	15.7	19.8[7]	25.6[8]	21.7	22.7
BRs, 2, 3 and 4[9]	n/a							
OECD, 2022b	12.8	16.7	n/a	10.1	14.5	14.7	14.4	13.1
Total climate finance mobilised by developed countries								
BA (aggregated based on data reported in the BA as above)	52.7	59.7	61.9	71.4	74.2	86.3	87	90.8
OECD, 2022b	52.4	61.8	n/a	58.5	71.6	79.9	80.4	83.3

Sources/notes: **1.** Table 2.7, p.89, 2022 BA Technical report for period 2013-2020. **2.** Fig. 21, p.66 of compilation and synthesis report of BR2s for 2013 and 2014; Fig. 29, p.57 of compilation and synthesis report of BR3s for 2015 and 2016; para. 221, p.71 of compilation and synthesis report of BR4s for 2017 and 2018, of Parties included in Annex I to the Convention. October 2016, November 2018 and May 2022. **3.** Fig. 1, p.5 of BA's Summary and Recommendations for 2013-2014 (2016); Fig. 1, p.6 in BA's Summary and Recommendations for 2015-2016 (2018); Fig. 2, p.8, the BA's Summary for 2017-2018 (2020); Fig. 2, p.9 of BA's Summary for 2019-2020 (2022). **4**. Table 11, p.65 of compilation and synthesis report of BR2s for 2013 and 2014; Fig. 28 and Table 6, p.56 of compilation and synthesis report of BR3s for 2015 and 2016; Table 4, p.71 of compilation and synthesis report of BR4s for 2017 and 2018, of Parties included in Annex I to the Convention. October 2016, November 2018 and May 2022. Annex II Parties reported contributions through multilateral channels, including climate specific and core/general support to MDBs. **5.** Fig. 27, p.68 in compilation and synthesis of fourth biennial reports of Parties included in Annex I to the Convention for 2015, 2016, 2017, 2018 (May 2022). Fig. 19, p.63 in compilation and synthesis report of second biennial reports of Paris included in Annex I to the Convention for 2013 and 2014. **6.** Includes mobilised private climate finance by the MDBs and by bilateral, regional institutions (of $10.9 billion and $2.3 billion respectively) as per Fig. 1, p.6 in BA's Summary and Recommendations for 2015-2016 (2018). **7.** Includes mobilised private climate finance by the MDBs, by bilateral, regional institutions, and other private finance projects (of $10.8, $3.7, and $5.3 billion respectively) as per Fig. 2, p.8 in BA's Summary for 2017-2018 (2020). **8.** Includes mobilised private climate finance by the MDBs, by bilateral, regional institutions, and other private finance projects (of $10.8, $3.8, and $11 billion respectively) as per Fig. 2, p.8 in BA's Summary for 2017-2018 (2020). **9.** The compilation and synthesis of the biennial reports of Parties included in Annex I to the Convention do not provide an aggregate of the private finance mobilised.

3. Finance for what? Investment and spending priorities for climate action and sustainable development

3.1. Investment imperative and priorities

A major, rapid and sustained investment push is needed to drive a strong and sustainable recovery out of the COVID-19 crisis, transform economic growth and to deliver on shared development and climate goals. There is an urgent need to boost investment in all forms of capital – human, physical, social and natural – and benefit from the opportunities offered by a low-carbon future. Investment and innovation can drive new and better forms of growth and development through the transformation of key systems – energy, transport, cities, digital, water, agriculture and land use – with circularity principles at their core. Everywhere there is an opportunity to 'build back better' by replacing aging and polluting capital with better capital and by building new capital that is sustainable, inclusive and resilient. Action this decade is critical to avoid immense and irreversible damage from climate change and biodiversity loss.

While the investment push is needed across the full spectrum of the Sustainable Development Goals (SDGs), **the main investment and spending priorities to ramp up climate action and deliver on the related sustainable development goals encompass three elements:**

- **First, the transformation of the energy system,** which is vital for both development and climate. Affordable, accessible and clean energy can help transform development opportunities, boost inclusive growth and is the only way to meet the 1.5°C temperature warming goal.
- **Second, responding to the growing vulnerability of developing countries to climate change**: both more frequent and damaging extreme events, and 'slow onset' impacts, especially on heat, precipitation, and water resources. This will require much better mechanisms to deal with loss and damage as well as greatly accelerating investments in adaptation and resilience.
- **Third, investing in sustainable agriculture,** which will be key to mitigation, adaptation and development. Damaged natural capital in terms of degraded land, deforestation, polluted water supply and oceans must be restored right away.

3.1.1. Accelerating just energy transitions in developing countries

A major scale-up and transformation of energy will be critical to delivering on both development and climate goals. Energy makes up almost three-quarters of global greenhouse gas emissions, with EMDCs (other than China) accounting for around 40% of historical emissions (WRI, 2022). These economies will account for virtually all the world's incremental energy demand into the future, given the current large deficits in energy access and broader development needs at a time of major structural and demographic change (see Bhattacharya et al., 2016 for an overview of the drivers of future infrastructure demand). Today, around 770 million people lack access to electricity, 77% of whom live in Sub-Saharan Africa (IEA, 2022).

Decarbonisation of energy supply and demand in EMDCs is therefore vital to achieving the net zero target by mid-century. The expansion and transformation of energy can unlock new and much better forms of growth, and hence deliver on both development and climate goals. The global concerns about energy security triggered by the Ukraine crisis call

for acting even harder and faster in the transition to clean energy, which can provide better national, regional and global energy security.

At the heart of the energy transformation must be a massive increase in renewable energy to drive electrification of the economy and decarbonisation of the power sector. This expansion is necessary to ensure that new electricity demand is met by renewable energy to the maximum extent possible. A further expansion of renewables will be needed to offset the phase-out of fossil fuels in the power sector, including coal, and the transformation of demand to replace fossil fuels in direct energy use. The development of renewables can now largely be undertaken by the private sector, but there will be a need for complementary public investments in grid development, storage and back-up capacity, which will need to be frontloaded. For many countries natural gas will have to remain as part of the energy mix during the transition period, mainly for back-up capacity.

There is tremendous potential to transform demand in EMDCs through improvements in energy productivity, electrification, development of low-carbon technologies and expansion of green hydrogen. The potential for improvements in energy and resource efficiency in developing countries is particularly large. EMDCs can take advantage of rapid technological progress and can participate in the development of new technologies. A strong and coordinated global effort through policies, standards and cooperation can greatly accelerate the development and deployment of new technologies and drive down costs.

The phase-out of coal represents the lowest hanging fruit in cutting global carbon emissions. As advanced economies phase out coal-fired power plants, the bulk of the remaining coal plants will be in China and several other emerging markets. The early phase-out of coal plants will bring important direct and co-benefits, including for air quality, but will also entail substantial financial costs (associated with the loss of foregone revenues, decommissioning of plants and just transition costs for people and places). The international community will need to provide support to manage these transition costs, which will be greater in economies with large primary coal production such as South Africa, Indonesia and India.

As well as ensuring a just transition out of fossil fuels, the energy transformation must also be the foundation for job creation and more inclusive growth (Robins et al., 2018a). The transition away from fossil fuel industries will result in economic restructuring and dislocation of work. The fossil fuel industry both employs workers directly and generates a significant number of indirect jobs throughout its supply chain and in the communities built around fossil fuel extraction (World Bank, 2021). Further, for countries dependent on fossil fuel exports, the impacts of the transition will be felt economy-wide (Armstrong, 2019). The just transition is a whole-economy issue (Robins et al., 2018b). Investing in people and places will be necessary to build the political and societal will for the strong action needed on climate change.

3.1.2. Responding to climate shocks and building resilience

EMDCs face significant risks from climate change due to their geographical location and are less able to adapt to them. Many of these countries have particular exposure to desertification, rising sea levels and flooding, and extreme heat. In 2019, eight out of the 10 countries most affected by extreme weather events belonged to the low- and lower-middle income category and half were Least Developed Countries (Eckstein et al., 2021). Despite having contributed the least to the problem, EMDCs are on the frontline of the climate crisis, and they will need support from the international community to adapt to climatic changes and mitigate the worst impacts (Kharas and Dooley, 2021).

Investment in adaptation and resilience will be unavoidable: while investment in emissions reductions will reduce the level of adaptation necessary, some of the future impacts of climate change are already 'locked in' by past emissions. Without appropriate adaptation action to ensure that the most vulnerable populations have the financial, technical and institutional resources to cope and recover from climate-related events, climate change could push more than 100 million people below the poverty line by 2030 (Global Commission on Adaptation, 2019). Supporting populations to manage the adverse effects of climate change can avoid health costs; for example, the implementation of preventative measures and warning messages by the French government after the deadly 2003 heatwave led to the death toll from the 2019 heatwave being 90% lower than would otherwise have been expected (Ford, 2019).

Priority areas for investment in adaptation and resilience include food and water systems, the natural environment, cities, infrastructure, and disaster risk management. Some adaptation measures, such as increasing access to health facilities and education, will overlap with development goals. Others will need to specifically address the current and future risks caused by climate change, such as building flood defences to protect coastlines from sea-level rise.

An increase in finance mobilised will not automatically guarantee the effectiveness of adaptation projects. To succeed, adaptation and resilience strategies will need to place poor and vulnerable groups at the centre of their objectives, including women, youth, elderly, ethnic and religious minorities, Indigenous people and refugees. By taking into account existing inequalities and allowing marginalised groups to meaningfully participate in adaptation processes, countries can reduce vulnerability to climate impacts and create economic benefits for the poorest (see, for example, Eriksen et al., 2021).

Funding for loss and damage will also be necessary to help developing countries recover quickly from climate-related disasters where adaptation has not been optimally implemented or where adaptation limits are reached. These countries are already facing substantial costs. For example, loss and damage from the impacts of climate change are estimated to have cost 20% in lost GDP in Vulnerable Twenty (V20) economies over the last two decades (V20, 2022). The IPCC (2022) stresses that many ecosystems are approaching the thresholds beyond which no additional adaptation actions can prevent irreversible loss and damage. Several ecosystems, including some rainforests and coastal wetlands, might have already surpassed their limits. As such, early collective action to reduce global greenhouse gas emissions and build adaptation and resilience in vulnerable countries will be critical to minimise the future costs of loss and damage.

Since the creation of the Warsaw International Mechanism on Loss and Damage at COP19 in 2013, there has been little progress on financial support for developing countries facing increasing risks of loss and damage from climate change. To address this, G7 countries in a joint effort with the V20 have formally launched a 'Global Shield against Climate Risks', which aims to increase cooperation to provide financial protection to deliver faster and more reliable prearranged finance against disasters, including social protection schemes.

3.1.3. Agriculture, land use and conservation

Developing countries are home to important natural resources and carbon sinks, but these ecosystems are deteriorating at a rate that is unprecedented in human history (IPBES, 2019). In the Amazon Rainforest, the combined impacts of climate change and deforestation have greatly reduced the forest's ability to absorb carbon dioxide from the atmosphere (Gatti et al., 2021).

Protecting and restoring ecosystems that can absorb and store carbon – including forests, peatlands, mangroves, seagrasses and saltmarshes, soils and oceans – will be essential to mitigate climate change. The protection and restoration of 450 million hectares of natural land and forests, and of coastal and marine ecosystems, could reduce annual net greenhouse gases by over 5 gigatonnes (Gt) and 0.9Gt respectively by 2030 (FOLU, 2019; High Level Panel for a Sustainable Ocean Economy, 2019). Actions to protect and restore nature can also protect communities against climate impacts. To combat the expansion of the Sahara Desert, 21 African countries are working together to grow the 'Great Green Wall', 8,000 km of trees and shrubs across the width of the continent. Healthy forests can draw water through their roots and recharge groundwater supplies that can help communities survive droughts.

Beyond climate, the protection of the natural world can improve biodiversity, water and soil quality, as well as people's health; land-use change is a globally significant driver of pandemics and has caused the emergence of more than 30% of new diseases reported since 1960 (IPBES, 2020). Stable ecosystems also underpin productivity across sectors. An estimated $44 trillion of global GDP is highly or moderately dependent on nature, including the three largest sectors – agriculture, food and beverages, and construction (Herweijer et al., 2020).

Transforming agricultural systems towards resource-efficient, regenerative practices is necessary not only to address climate goals but also to support global food security and poverty reduction in a changing climate (Lipper et al., 2014). Worsening climate impacts combined with human-induced land and water degradation have pushed agricultural systems to breaking point (FAO, 2021). Agricultural productivity growth in Africa has been reduced by 34% since 1961, a greater reduction than anywhere else in the world (Trisos et al., 2022). This is a particular threat for poor people in rural areas who tend to rely on subsistence agriculture, and for poor communities in urban areas, due to cascading impacts on food prices (FAO et al., 2018).

EMDCs (other than China) account for an estimated 90% of the investment opportunity in protecting and restoring nature from 2020–2030, amounting to $0.14 trillion per year (0.57% of EMDCs' projected GDP in 2025) (SYSTEMIQ, 2021). Reaching this level will require a step-up in investment in three elements: transforming the agriculture sector towards productive and regenerative practices; protecting and restoring terrestrial and marine ecosystems; conserving biodiversity, by implementing protected areas, for example; and reducing water pollution.

Investment opportunities in natural capital are highly country-specific. The most critical sites for sustainable land use and nature preservation are concentrated in East Asia, Latin America and Africa. Brazil and Indonesia account for 60% of the investment in terrestrial ecosystems, given the carbon mitigation potential of halting deforestation, sustainable forest management and peatland conservation in these countries (ibid.). Further, 50% of investment in coastal wetlands protection and restoration (mangroves, seagrasses, saltmarshes) has gone to Indonesia. These countries will need help to maintain these global public goods (Kharas and Dooley, 2021). Further, these investments will need to be made in the context of maturing markets for nature-based solutions, to avoid assets becoming stranded (Stern, 2021).

3.2. Assessing investment and spending requirements for climate ambition

Numerous assessments of the investment and spending required to deliver on climate ambition and related development goals have been carried out, as described in Appendix 1. These assessments have highlighted a wide range of financing needs, reflecting differences in methodologies, scope (including sectoral coverage and the time period

considered), data sources and the ambition of the climate scenario utilised. Nevertheless, some core conclusions can be drawn from all the studies:

- **Energy transformation.** EMDCs face substantial investment and financing needs during the coming decade to accelerate the energy transformation that is central to their development goals and crucial to keeping the 1.5° temperature goal within reach. Altogether, the energy transformation could entail total financing needs of $1.3–$1.7 trillion a year by 2030 for EMDCs other than China.
    - The largest component is for the very large and rapid expansion in renewable energy that is at the heart of the energy transformation.
    - To enable electricity systems to cope with the huge scale-up in renewables, all countries will need to make substantial complementary investments in public infrastructure, including in extension and upgrading of grids, back-up capacity and storage, as well as in upgrading and decarbonising transport systems.
    - Improving energy productivity and decarbonising end-use of energy will require largely private investments in industry, transport fleets and buildings.
    - The potential for green hydrogen to replace fossil fuels in hard-to-abate contexts is also expanding rapidly, and with it the case for investing in hydrogen production and distribution.
    - The early phase-out of coal could require annual expenditure in excess of $50 billion a year, but this will be concentrated in a few countries.
- **Just transition.** The transition to a low-carbon economy may be unjust in several ways: first, if people and places that are adversely affected by the exit out of high-carbon activities are asked to bear the cost without support; second, if countries and communities that have contributed little to climate change are asked to assume the cost of accelerating climate change; and third, if not acting on curbing emissions damages the wellbeing of future generations. Accelerating climate action is therefore the right course of action. However, it is important to ensure that the social dimensions of the low-carbon transition are fully addressed, through proactive policies and adequate funding support. Developed countries should help with these transitions from the perspective of climate justice, and to support developing countries to cope with the mounting damages. For their part, developing country governments need to ensure that the transition fosters inclusive growth and avoids exclusion. Just energy partnerships must take this broader approach and must be adequately funded by governments and donors.
- **Adaptation and resilience, and loss and damage.** The growing impacts of climate change on lives and livelihoods require substantial increases in funding as well as better mechanisms to respond to loss and damage and for investments in adaptation. Estimates for future loss and damage are subject to great uncertainty,[1] but recent events suggest they could be as high as $150–300 billion by 2030 to cope with immediate impacts and for subsequent reconstruction. The growing climate impacts also underscore the importance and urgency of investments in adaptation and resilience. The last comprehensive assessment undertaken by UNEP in 2016, and new country-level evidence including from the World Bank's Country Climate and Development Reports (CCDRs), suggest that

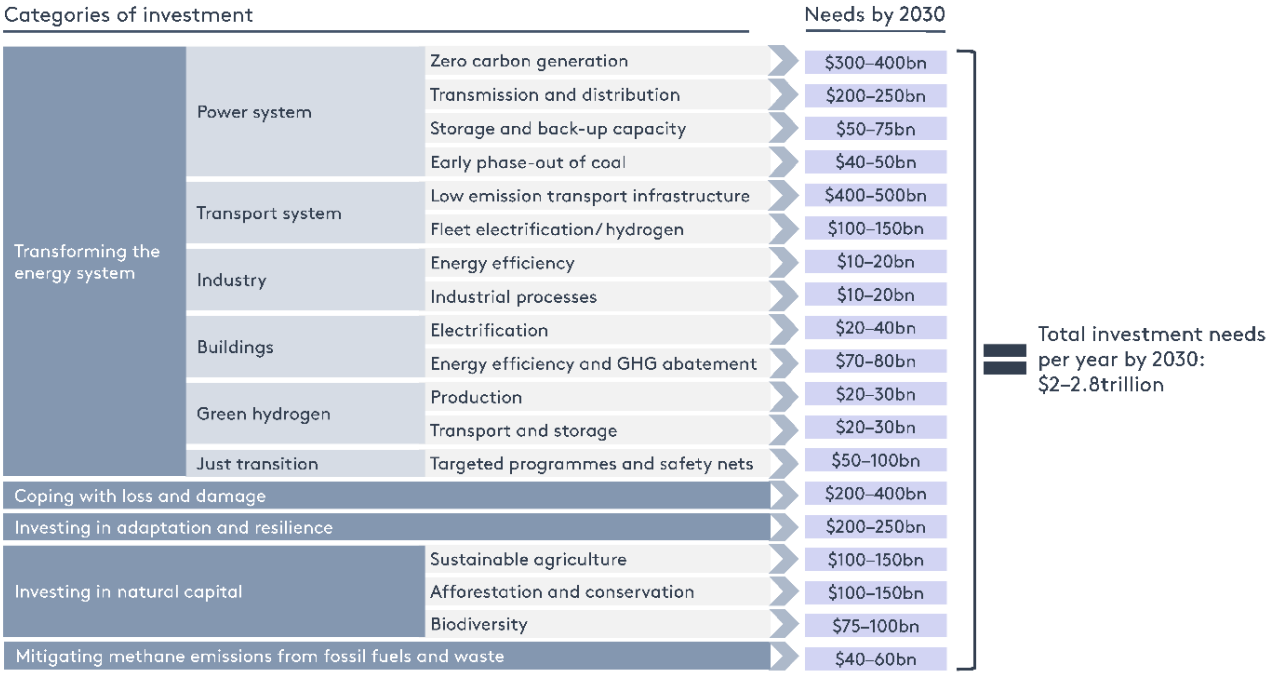
[1] As Stern et al. (2022) show, integrated assessment models (IAMs) cannot capture adequately the nature and scale of the risks from climate change, and thus the models likely underestimate the costs from loss and damage in developing countries and in specific regions.

investment needed for adaptation could amount to $200–250 billion annually by 2030.

- **Natural capital.** There is a need to close the investment gap for sustainable agriculture, given the importance of the sector for mitigation, adaptation and development. Significant financing is also needed for the protection and restoration of forests, other land use and marine ecosystems, as well as for the conservation of biodiversity. Altogether, investment requirements in natural capital could amount to $275–400 billion per year by 2030.
- **Methane abatement**. Methane abatement from the production of fossil fuels and the waste sector[2] is necessary given the significant global warming potential of methane in the short term, and it can be tackled with relatively modest amounts of investment, ranging from $40–60 billion per year by 2030.

Figure 3.1 sets out the estimated financing needs per year by 2030 for the investment and spending categories described above. The battle against climate change adds another layer of implications for investment needs to support development over the next decade; however, this does not necessarily mean additional investment. In some areas, combining the need to tackle climate change with the development agenda involves a change in the composition of investment or a need to accelerate investment, rather than a need for additional investment.

Figure 3.1. Investment/spending needs for climate action per year by 2030



Note: The financing needs are estimated for the year 2030 and as such do not represent cumulative investments for the decade 2020–30. Source: Authors

[2] Investments to abate methane emissions from agriculture are accounted for under the estimate for 'sustainable infrastructure'.

There is not a large amount of additionality in the investments required to align energy systems in EMDCs (other than China) with climate objectives. Indeed, the growth and structural change agendas in EMDCs over the next three decades will already entail substantial investment requirements in the energy sector – including in energy supply, energy infrastructure, transport, and other end-use sectors – in order to progress on development objectives such as achieving universal access to energy. As such, a large part of the investment requirements in sustainable infrastructure *for the clean energy transition* are already embodied in the investment requirements in sustainable infrastructure *for development*. We estimate that only around $500–600 billion of the $1.3–1.7 trillion total annual financing needs for the energy transformation by 2030 will be additional investment. Investment requirements in natural capital, adaptation and resilience, and spending on loss and damage will be additional.

It is also important to consider the substantial cost savings from the shift to a low-carbon system that are typically not included in the scope of assessments of investment needs. The shift to renewables will entail significant savings on the costs associated with primary coal, oil and gas production (e.g. for extraction, refining) as well as on fossil fuel rents. To give an idea of scale, UNFCCC Standing Committee on Finance (2022a) estimated that fossil fuel investment amounted to $892 billion per year over 2019–20, and fossil fuel subsidies to $450 billion. Savings from avoided investments in fossil fuels in EMDCs dwarf additional climate investments needs.

A recent report prepared by colleagues at Brookings and LSE (Bhattacharya et al., 2022) argues that to deliver on development and climate goals EMDCs other than China will need to invest an additional $1.3 trillion by 2025 and an additional $3.5 trillion by 2030 – in human capital, sustainable infrastructure, adaptation and resilience and natural capital. For the specific investment and spending priorities identified above, EMDCs other than China will need to spend around $1 trillion in 2025 (4.2% of GDP compared with 2.2% in 2019) and around $2.2 trillion in 2030 (6.9% of GDP) (see Appendix 1). As such, total investment for development and climate goals will have to increase by $3.5 trillion in 2030 (or 6.9% of GDP) from the spending level in 2019. This includes a necessary increase in climate-related investment by $1.8 trillion in 2030 (or 4.8% of GDP) from current spending. Table 3.1 shows the total investment and spending needs for sustainable development and climate action in EMDCs other than China as described in Bhattacharya et al. (2022), and the share of the total that is related to climate action (including spending on the energy transition, on adaptation and resilience, and on agriculture, forestry and other land use [AFOLU]).

Table 3.1. Investment/spending needs per year for sustainable development and climate action for EMDCs (other than China)

	2019 US$ bn	2019 % GDP	2030 US$ bn	2030 % GDP	Gap[1] (2030-2019) US$ bn	Gap (2030-2019) % GDP
SDG-related investment (Bhattacharya et al., 2022)[2, 4]	2,385	11.3%	5,880	18.2%	3,500	6.9%
Of which climate and related investments[3]	450	2.1%	2,250	6.9%	1,800	4.8%

Notes/sources: ***1.*** *Gap is defined as difference between estimated investment needs in 2030 and current baseline of investment in 2019.* ***2.*** *Human capital, sustainable infrastructure (including on the energy transition), adaptation and resilience, AFOLU.* ***3.*** *Energy transition, adaptation and resilience, AFOLU.* ***4.*** *In Bhattacharya et al. (2022), estimates for human capital investment are based on analysis by Kharas and McArthur (2019). Estimates for sustainable infrastructure investment build on analysis by Bhattacharya et al. (2016), incorporating additional investment required for energy transition. Estimates for AFOLU investment combine analysis of agricultural spending by Kharas and McArthur (2019) and analysis of investments to protect and restore nature by Systemiq (2021). Estimates for adaptation and resilience investment based on analysis by Systemiq (2021).*

Source: *Bhattacharya et al. (2022)*

The purposes and breakdowns of investment set out in Figure 3.1 are critical to achieving the objectives of the Paris Agreement, reinforced by the Glasgow Pact. The task of further analysis and action on climate finance is to move forward on all the complementary investment fronts (including energy transformation, adaptation/resilience, national capital, just transition) and with the necessary, again complementary, external sources of finance (private, MDB, concessional/debt-free) as set out in the figure. These must be combined with necessary internal finance and actions to foster and enable investment. That is the overall climate finance agenda. It is much more specific, broader, and more detailed than that of the $100 billion. A simplistic comparison of the $1 trillion per year and the $100 billion per year could be profoundly misleading.

Box 3.1 examines the example of Africa and its climate finance needs.

Box 3.1. Africa's climate finance needs by 2030

Current assessments show that finance mobilised for Africa amounted to $30 billion in 2019/20. Climate finance is concentrated in just a few countries (10 countries out of the continent's 54 absorb more than half of all investments) and is overall dominated by loans and public sector finance (CPI, 2022b).

The studies summarised in Table 3.2 suggest that the scale of investment in the continent will need to be much larger this decade if it is to meet developmental objectives, contribute to limiting warming to 1.5°C, and pay for adaptation. Recent analysis of the nationally determined contributions (NDCs) of African countries show that financing needs for climate mitigation and adaptation would require $280 billion (or 7% of GDP) annually (CPI, 2022c), which would imply multiplying existing climate finance by a factor of 9.

With regard to the energy transition, African countries will require an additional 250 GW of generation capacity to be installed by 2030 to meet the SDG7 targets of universal access to reliable, affordable and clean energy. The Economic Commission for Africa (ECA) estimates that the least-cost pathway would require investment of $500 billion by 2030. A large portion of this investment can be driven by the private sector but will require accompanying support in terms of enabling policies at national and regional levels, appropriate regulatory environments with pricing certainty and transparency and de-risking throughout the investment cycle.

The full costing of adaptation needs based on NDCs and publicly available adaptation commitments is estimated at $438 billion by 2030. This sum regroups financing across sectors that are important for adaptation including water, agriculture, food security, forestry, ecosystems and biodiversity, coastal protection, fisheries and human settlement and land management. In addition, it covers the built infrastructure requirements for adaptation, energy, transport, health, education and tourism-based adaptation. While adaptation may represent a more challenging space for investment from a private sector perspective, with the right support, adaptation initiatives can present impressive returns on investment in terms of value-added and job creation. Recent studies undertaken by ECA (2021) in the context of an African green recovery have demonstrated the potential for high returns on adaptation: 150% from investing in parks in South Africa, 450% from irrigation in DR Congo, a 400% return on solar-powered irrigation for agriculture in Egypt and a 200% return on planting drought-resilient seeds in Kenya.

Cont. next page.

Table 3.2. Estimates of investment needs for sustainable development and tackling climate change in Africa

	Gross spending 2019, US$ bn	Gross spending 2019, % GDP[1]	Finance needs[2] 2030, US$ bn	Finance needs 2030, % GDP	Gap[3] (2030-2019) US$ bn	Gap (2030-2019) % GDP
Investment needs in energy to meet SDG7 targets (ECA)[4]	n/a	n/a	500	12%	n/a	n/a
Investment needs for climate adaptation (Tufts/UNECA)[5]	24	1%	438	10%	414	9%
Investment needs in mitigation and adaptation based on NDCs (CPI, 2022c)	30[6]	1%	280	7%	250	6%
Infrastructure and climate investment (AfDB, 2021)	n/a	n/a	75 – 150	2 – 4%	n/a	n/a
Of which: Mitigation			*70 – 114*	*1.7 – 2.7 %*		
Adaptation			*4 – 36*	*0.1 – 0.9%*		

Notes/additional sources: *Shares of GDP are calculated using a standardised value based on World Bank projections.* ***1.*** *Current spending and financing needs are expressed as a share of Africa's GDP for the year 2019 and 2030, respectively.* ***2.*** *Finance needs are defined as the amount of finance required annually by 2030.* ***3.*** *The financing gap is defined as the difference between estimated investment needs by 2030 and the baseline of current spending in 2019.* ***4.*** *Source: UN Economic Commission for Africa (ECA)'s calculation based on least cost scenario for energy production to achieve universal access to electricity and based on estimates of electricity demand for access to meet population growth and at average of $2,000/kW of installed capacity across technologies.* ***5.*** *Source: Assessment of needs based on NDCs undertaken by Climate Policy Lab, The Fletcher School at Tufts University on behalf of the ECA.* ***6.*** *Biennial average of the finance mobilised in 2019/20.*

4. Translating investment opportunities into reality: unlocking ambitious investment programmes

Investments to ramp up climate action, for both mitigation and adaptation, will remain academic unless countries are able to develop and implement investment programmes in a purposeful way. These programmes need to be translated into concrete pipelines of projects and supported by a favourable investment climate. Investment depends on expectations, and clarity and credibility over the medium term are crucial.

Countries will therefore need strong and sustained policy and institutional reforms to unlock the scale and quality of investments that will be needed, much of which will have to come from the private sector.

The starting point for a big investment push must be strong country leadership and actions. All countries need to set out well-articulated investment programmes to stimulate recovery and transformation anchored in sound long-term strategies to deliver on development and climate goals. These programmes need to be translated into concrete pipelines of projects and supported by a favourable investment climate. While the reform agenda will be country-specific, there are **four common threads**:

1. **Institutional capacity** to shape and manage the intergenerational investments needed in human capital and sustainable infrastructure.
2. **The adoption of carbon pricing and elimination of fossil fuel subsidies**, together with complementary policies on standards, design and R&D that will be essential for a shift to a zero-carbon future.
3. **Domestic reforms** that can ensure the financial viability of long-term investments. It will also be important to make market mechanisms work more effectively and efficiently to direct capital where needed.
4. **'Just transition' programmes** that can alleviate adjustment costs and protect those that may be adversely affected by the low-carbon transition, including from the accelerated phase-out of coal.

While this agenda typically will require institutional reforms and, in many cases, sustained capacity-building, an intermediate approach is the establishment of country/sector platforms that can bring together all key stakeholders in support of country-led investment and transition strategies. Momentum has been building on the use of country platforms to support higher ambition on climate action and investment with a focus on energy transition, both from the official sector (G7 and G20) and the private sector, including the call by Mark Carney, UN Special Envoy on Climate Action and Financing, to use enhanced country platforms to mobilise private finance at scale for EMDCs. Such platforms can incentivise a country to set out clear strategies and investment programmes, tackle binding policy impediments, put in place structures for scaling up project preparation, and create replicable and scalable models of financing. Crucially, a country platform allows a country to engage with all stakeholders, including donors, international finance institutions (IFIs), the private sector and philanthropic organisations, to ensure that ambitious commitments on the part of a country can be matched by a commensurate scale and mix of finance. The International Just Energy Transition Partnership between South Africa and France, Germany, the UK, US and EU, launched at COP26, provides an important pilot case that could be extended to other countries and to other priority sectors – see Box 4.1, which also provides the further example of Egypt. T
his agenda will require a strong and urgent focus on capacity-building and support to accelerate implementation.

Box. 4.1. Two pioneering country platforms: Egypt and South Africa

Egypt Country Platform for Nexus of Water, Food and Energy (NWFE) – Country ownership to move from pledges to implementation

Egypt's Country Platform for the Nexus of Water, Food and Energy (**NWFE** نُوَفِّـــي) programme, launched in July 2022 on the back of the announcement of Egypt's National Climate Strategy 2050 (Ministry of Environment, 2022), aims to accelerate the national climate agenda.

The Platform integrates a set of high priority projects for adaptation and mitigation, bundled around the nexus of the three main pillars of water, food and energy and selected through a prioritisation process led by the Government of Egypt. These climate action projects will be implemented under a programmatic approach and include projects that would replace existing inefficient thermal power plants with renewable energy, enhance small farmers' adaptation to climate risks, increase crop yields and irrigation efficiency, build resilience of vulnerable regions, develop water desalination capacity, establish early warning systems, and modernise on-farm practices. Further, the platform adopts a multi-stakeholder approach through deploying innovative forms of finance such as concessional loans, blended finance and debt swap programmes.

South Africa's Just Energy Transition Partnership (JETP)

The Just Energy Transition Partnership (JETP), launched at COP26 in 2021, aims to accelerate the decarbonisation of South Africa's economy with a particular focus on just transition. The International Partners Groups (consisting of the governments of France, Germany, United Kingdom, United States, and the European Union) have committed to mobilise an initial amount of $8.5 billion from all sources of finance over the next three to five years to support South Africa's pathway to low emissions and climate-resilient development. Key priorities for the partnership include the decarbonisation of the energy system (one of the most carbon-intensive in the world given its heavy reliance on coal), protecting workers and communities affected by the move away from fossil fuels, and supporting the repurposing of mines and opportunities for technological innovation (e.g. green hydrogen and electric vehicles).

A country-led process to develop an Investment Plan is underway. The plan will set out the projects and activities required to achieve a just transition and guide the use of funds. Further, policy reforms implemented in South Africa since the launch of the platform will be key to building an enabling environment to support the objectives of the JETP. This includes, for example, the launch of a South African Green finance taxonomy in April 2022, which outlines the assets, projects and sectors that are defined as 'green'.

5. A new approach to finance: scale, urgency and options

The scale of the investments needed in EMDCs over the next five years and beyond will require a debt and financing strategy that tackles festering debt difficulties, especially in poor and vulnerable countries, and that **leads to a major expansion and revamp of both domestic and international finance, public and private.**

An overall financing strategy must utilise the complementary strengths of different pools of finance to ensure the right scale and kind of finance and to reduce the cost of capital rather than simply focusing on the aggregate number; it must align all finance with sustainability, including climate goals, in line with Article 2 of the Paris Agreement; and it has to create the necessary partnerships to deliver concrete results.

About half the financing needed could come from domestic sources, underlining the importance of bolstering the public finances. This is challenging but feasible and an essential foundation given the importance for core public spending priorities, recurrent spending and creditworthiness.

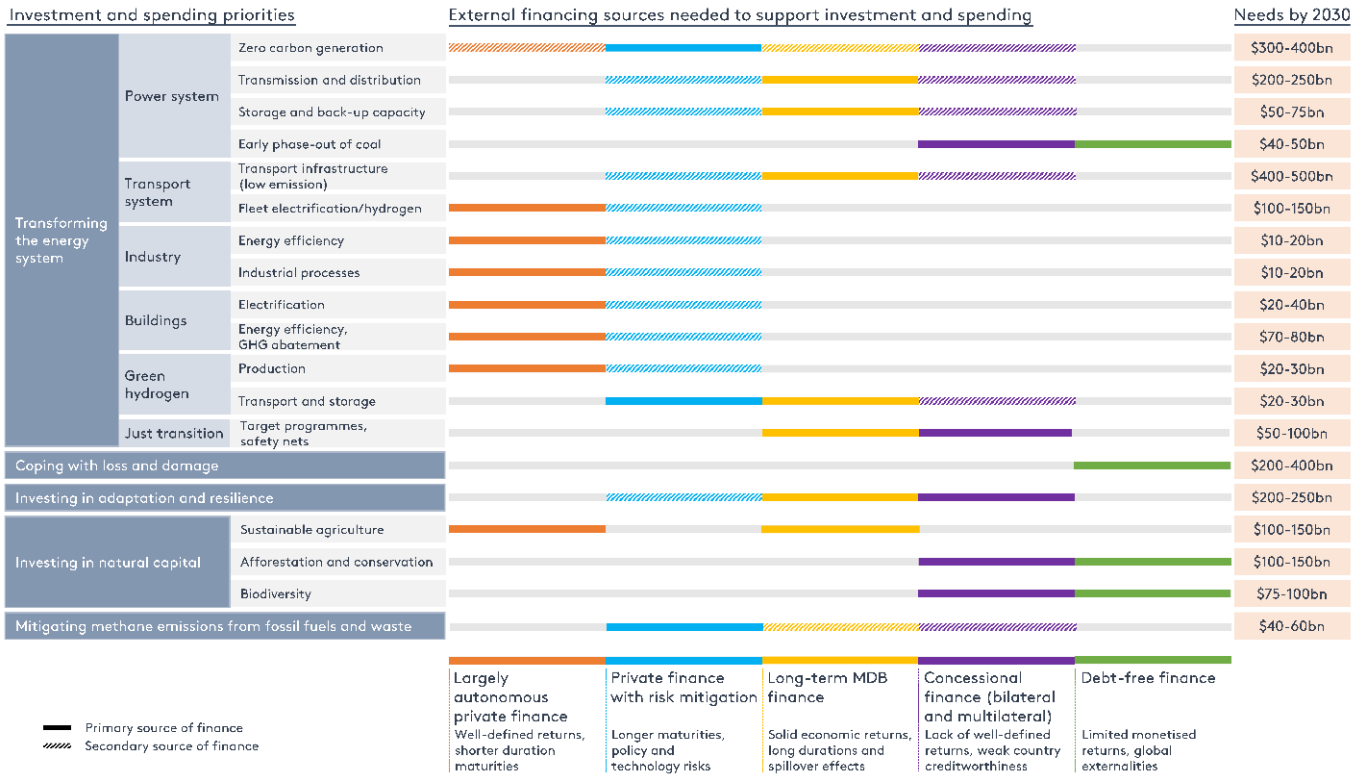
Our calculations indicate an additional $1 trillion per year by 2030 will be needed in external flows and private finance by 2030 to meet the projected investment needs. This will have to come from a mix of financing given the attributes of the investment requirements. Figure 5.1 highlights the mix of external financing sources – including largely autonomous private finance, private finance with risk mitigation, long-term MDB finance, concessional finance (bilateral and multilateral), and debt-free finance – needed for each investment and spending priority.

At one end are investments that have relatively robust revenue streams and require shorter-duration financing. These can be largely undertaken and financed by the private sector. The scope for private investment and finance has greatly expanded in other areas as well, including renewable energy, transport infrastructure, green hydrogen and even some areas of adaptation. These all have clear revenue streams but are often subject to policy and technology risks and require a long tenor of financing. Attracting private finance and reducing the cost of capital will require risk reduction mechanisms at scale and, in poor and vulnerable countries, significant proportions of blended finance.

International public finance will also have to play a stepped-up role in supporting the substantial public investment needs where there are large spillovers or where revenue streams are not adequate to attract private finance. MDBs in particular will need to play a much larger role to support public investments, catalyse private finance and augment financing for poor and vulnerable counties. As shown in Figure 5.1, there are crucial areas that will require concessional finance (bilateral and multilateral), including adaptation and resilience, agriculture, forestry and land use, and the accelerated phase-out of coal supplemented by debt-free finance including for future loss and damage.

These aggregates are therefore very different from the goal of $100 billion per year by 2020 first negotiated in Copenhagen at COP15 in 2009 (as part of the Copenhagen Accord) and embodied in the agreements of COP16 in 2010 in Cancun, and COP21 in 2015 in Paris. The formal purposes of the $100 billion figure were not expressly articulated, and it was indeed negotiated down by developed countries from a greater amount that was being sought by developing countries. The $1 trillion per year of external climate finance is a very different concept – it is, as emphasised above, a requirement based on an analysis of the investment necessary and the domestic finance potentially available, for an internationally agreed and vital purpose. **As such, the $1 trillion figure is not the new $100 billion goal.**

Figure 5.1. External financing sources for investment and spending priorities for climate action and related development goals

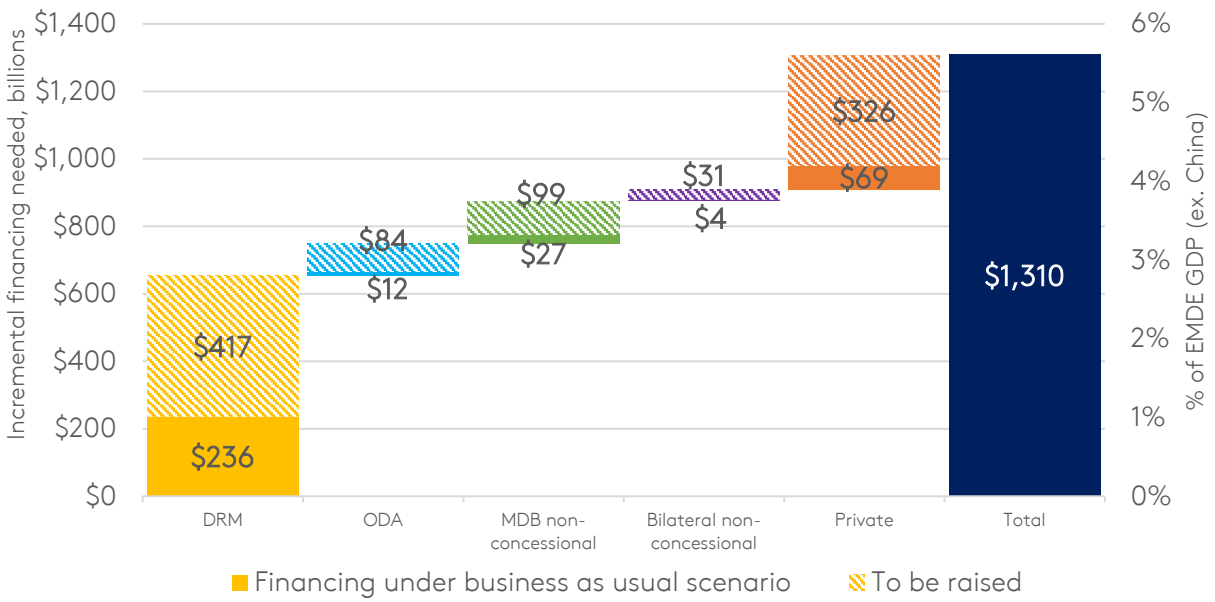


Note: The categories of investment and spending necessary to meet climate and development goals described in Section 3 are shown on the left-hand side. For each category, we outline the mix of financing needed from external sources – including largely autonomous private finance, private finance with risk mitigation, long-term MDB finance, concessional finance (bilateral and multilateral), and debt-free finance – to support the related investment and spending priorities. We distinguish between sources that would constitute the primary source of financing for one sector, and those that would play a secondary role. On the right-hand side we outline the estimated investment and spending requirements by 2030 for each category, as set out in Section 3. Appendix 2 provides an overview of the methodology used to produce the estimates.

Source: Authors

A sustained effort to boost financing from all sources must start now given the urgency of the climate challenge. As Bhattacharya et al. (2022) argue, there is a case for a 'grand match' financing strategy, with domestic and International effort from both the public and private sectors, that can deliver the incremental financing requirements to make a big push on climate and sustainable development in the immediate time horizon (Figure 5.2).

Figure 5.2. Grand match financing strategy – incremental financing needed between 2019 and 2025 (billions 2019 US$)



Source: *Bhattacharya et al. (2022)*

This report sets out a road map to a climate finance package that together can deliver the scale and mix of financing to support the investment and spending priorities that are critical to meet the Paris climate goals, while providing a boost to both the recovery from the present crisis and to restoring momentum on the sustainable development goals.

The key elements of this financing package are:

- A concerted push to resolve debt difficulties and enabling countries to take on new debt to finance Investments.
- A strong acceleration in private sector Investment and finance, with a proactive approach on the part of the private sector to translate commitments to net zero and boosting financing for EMDCs into tangible investments and finance, and with effectives responses from countries and DFIs to create a new highway for private finance.
- A major scaling up of effort and finance from the MDBs in order to help countries to tackle barriers to scaling up investments, catalyse private finance to their full potential, and help finance urgent public investments and transitions. Beyond the MDBs, this is the moment to transform the entire public development bank system.
- The criticality of rich countries delivering on and doubling official concessional finance by 2025 given the importance of concessional finance to key priorities such as adaptation and resilience, loss and damage and accelerating decarbonisation in middle-income countries.
- The need to expand sources of low-cost finance through innovative approaches (such as the International Finance Facility and use of guarantees) and tapping all available pools of finance such as SDRs, carbon markets and private philanthropy.

The proposals set out in this report accord well with proposals emanating from other initiatives to raise ambition, such as the G20 Capital Adequacy Framework report, the McKenna report, and the Bridgetown Initiative, which has brought together an influential group of thought leaders and campaigners, initially hosted by Prime Minister Mottley of Barbados (see Box 5.1).

Box 5.1. The Bridgetown Initiative

By Avinash Persaud

The Bridgetown Initiative is five specific proposals that would make a meaningful difference to climate finance and development and could be achieved in 24 months. It were developed in informal discussions initially hosted by Prime Minister Mottley in Bridgetown, Barbados. These five proposals would result in a fundamental redrawing of the global financial architecture that resonates strongly with this report. As a participant in both, I summarise the Bridgetown Five below.

Bridgetown no. 1: Drawing in $5 trillion of private savings for climate mitigation. ODA and MDB lending is less than 10% of what is required to finance the low-carbon transition. To fill the gap we must redirect mainstream private capital. The fundamental obstacle is the cost of capital. Countries that issue an international reserve currency borrow 10-year money at 1–4% per year today, while developing countries borrow at an average of 14%. Add a private sector risk premium and the country rating ceiling, and few mitigation projects are commercially viable in the developing world. The Bridgetown solution is a Climate Mitigation Trust that borrows with the backing of $500 billion of special drawing rights, donor guarantees, or similar. This could be a Trust at the IMF or the private sector arms of regional development banks to increase flexibility. The Trust would invest borrowed funds in projects based on the size and pace of climate change mitigated and would leverage up to $5 trillion of private finance. Projects would go through extensive environmental, social and governance (ESG) processes, like those found in Just Energy Transition Partnerships.

Bridgetown no. 2: Widening access to concessional finance for the climate-vulnerable. Much climate adaptation does not have the revenues private investors need, so indebted governments must borrow more. 'Bridgetown' calls for a limited widening of the eligibility for concessional lending, to include investing in resilience in climate-vulnerable countries.

Bridgetown no. 3: Expanding MDB lending for climate and the SDGs by $1 trillion. We must broaden MDBs' lending capacity if we widen access to concessional funds. 'Bridgetown' calls for MDBs to lend a further $1 trillion by raising their risk appetite and include donor guarantees and SDRs when determining their lending room. No one need write a cheque.

Bridgetown no. 4: Funding loss and damage. Climate loss and damage is already four times greater between the Tropics of Cancer and Capricorn than elsewhere. Over 50% of the debt increase in many climate-vulnerable countries relates to funding disaster recoveries. Without grants to fund recovery, vulnerable countries will be sunk by debt. But with mitigation and adaptation funded by other mechanisms in this scheme, post-disaster reconstruction is a sufficiently defined 'ask' to be persuadable. We need approximately $200 billion per year. We could apply a levy on fossil fuel production that starts at zero and rises by 1% for every 10% decline in fossil-fuel prices – so it will not impact today's cost of living. We could internationalise the EU's proposed carbon-based import tax to level the playing

field between carbon taxes paid on domestic and imported products. The proceeds could go to a fund that pays out when a major disaster hits.

Bridgetown no. 5: Making the financial system more shock-absorbent. All lending instruments, including those of MDBs, should have natural disaster and pandemic clauses. These clauses are net present value-neutral: lenders are no worse off if a disaster happens. When an independently verified major disaster hits, debt service is suspended for two years and the loan maturity extended by two years. Suspended debt service is paid back at the original interest rate. If all developing countries had had these during the pandemic, they would have released $1 trillion of liquidity – twice their actual spending on COVID-19.

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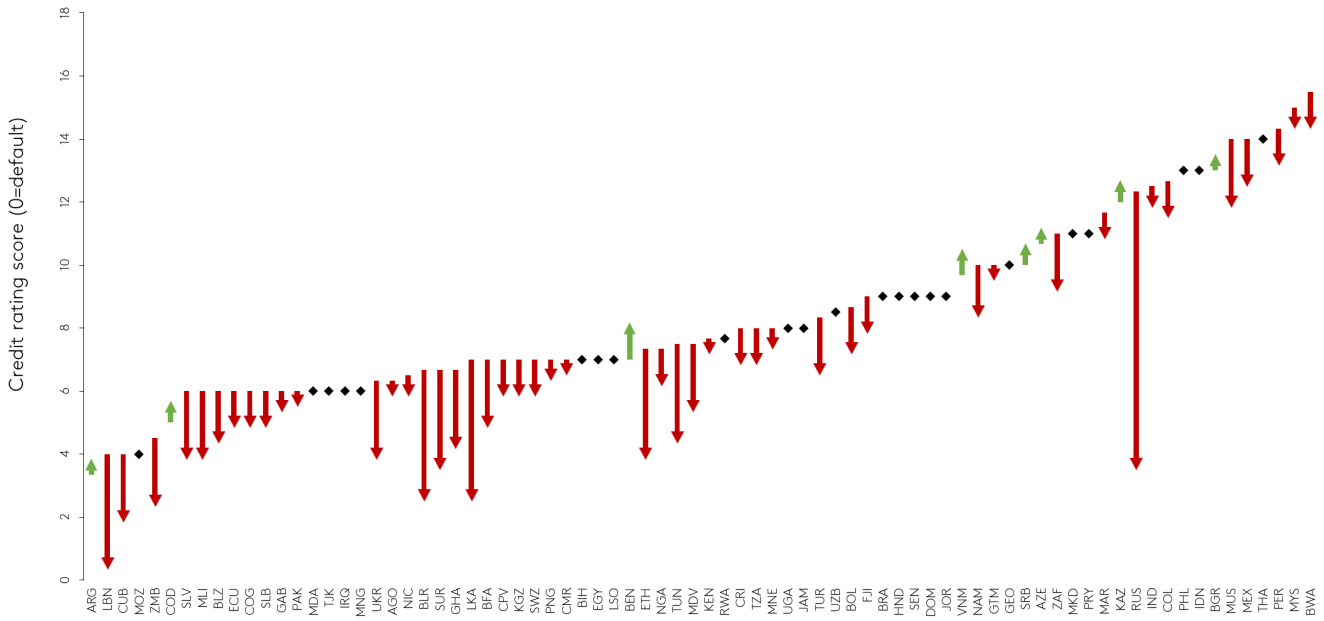
6. Debt and debt sustainability

6.1. A worsening debt outlook

IMF Managing Director Kristalina Georgieva said in July 2022 that one-third of all developing countries and two-thirds of low-income countries are at high risk of debt distress (Reuters, 2022). Since then, interest rates have risen, the US dollar (in which most debts are denominated) has appreciated, and growth has slowed. Each of these adds to the difficulties of servicing debt. Indeed, as Figure 6.1 shows, credit rating agencies have been systematically lowering their assessments of sovereign creditworthiness since the onset of the pandemic. Few countries are now classified as having an 'investment grade' rating (12 or above on the scale below).

Figure 6.1. Sovereign credit ratings, December 2019 versus October 2022



Note: Vertical axis measures average credit rating of 3 major agencies: S&P, Fitch, Moody's, with ratings converted to a 0 (default) to 21 (best rating) scale.

Source: Author estimates from scraping of Trading Economics, 24/10/2022

In part, the deterioration in creditworthiness stems from a growing realisation that climate risks are no longer something that will affect the future but are part of the assessment of creditworthiness in the here-and-now. An IMF study found a negative, significant effect of climate vulnerability on creditworthiness (Cevik and Jalles, 2020). Other studies have shown that borrowing to smooth out the cost of a natural disaster over time can result in a cycle of debt accumulation if the frequency and impact of shocks goes up – this phenomenon largely explains the indebtedness of many Caribbean countries (Cantelmo et al., 2019; Srinivasan et al., 2017).

The situation is compounded by a 'debt overhang' in many countries that is preventing governments from undertaking economically and socially desirable investments in key mitigation, adaptation, resilience, land-use and nature-based projects. Such investments have a high return in avoided costs for the public sector and in future savings from more efficient provision of energy. For example, IRENA (2022) finds that non-OECD countries will save $5.7 billion a year because they invested in renewables rather than in fossil fuel-fired generation in

2022. These savings would be even greater if developing countries faced a cost of financing similar to that faced by companies in advanced economies.

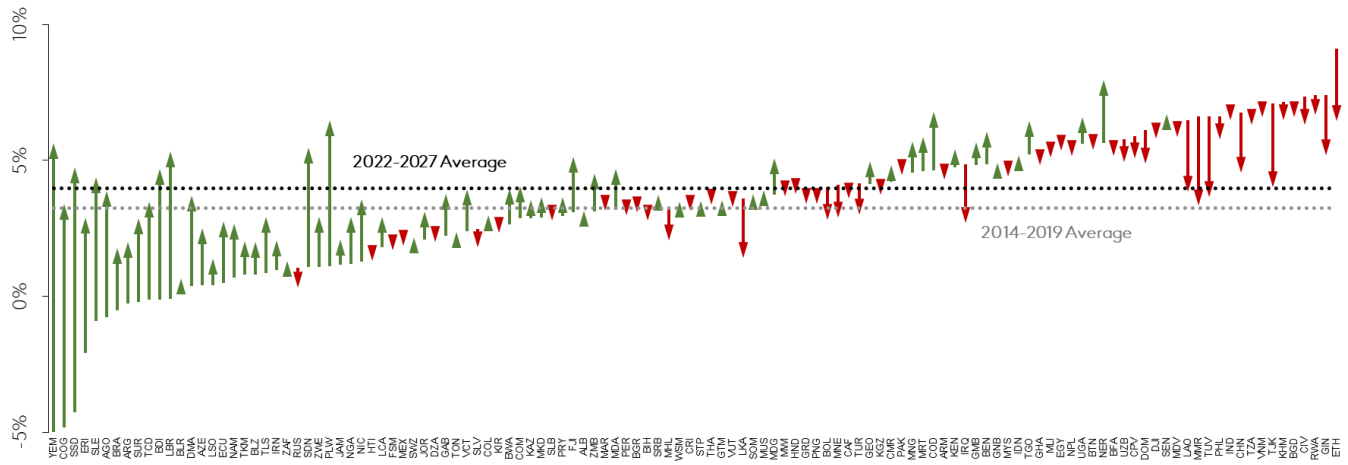
6.2. Rethinking the diagnosis of the debt problem

Despite the evident deterioration in creditworthiness, in most EMDCs the debt issue appears not to be one of over-indebtedness or lack of solvency but of liquidity and roll-over problems. This is based on a country-by-country assessment of the outlook for output and debt, given prevailing fiscal deficits and interest rates.

The good news is that even though growth forecasts for EMDCs have been lowered, the IMF projects that growth in the next five years will be higher than in the five years preceding the pandemic (see Figure 6.2). What is more, projected growth is more evenly distributed – growth forecasts for rapidly growing economies like Ethiopia have been lowered, while for slow-growing countries like the Republic of Congo forecasted growth is substantially higher than in the pre-pandemic period.

If we see these growth rates, or even faster rates, which could occur if there is higher and better-quality public spending, and if finance is made available on terms that non-concessional official lenders offer, then most countries should be able to grow out of their debt difficulties. Even a country like Ghana, whose public debt to GDP ratio could exceed 100% in a matter of five years under the current base case scenario, would be able to start to reduce its debt burden if it could access more debt from official lenders, given its moderately high growth forecast.

Figure 6.2. Sovereign growth rates, 2014–2019 versus 2022–2027



Note: *GUY, MOZ, and GNQ were removed for scaling purposes*
Source: *IMF World Economic Outlook, October 2022*

However, it is not the case that there are no problems with debt management. **There are three big issues that need to be managed.** Each is distinct and has a different solution, so it is important to be clear about the nature of the problem to be solved:

1. **There is a growing risk of a liquidity problem in many countries.** Benin, for example, faces sharply higher repayments on its Eurobonds in 2023 and 2024, which it might find expensive to roll over given current market conditions, even though it has adequate international reserves and strong growth prospects: the IMF projects growth at 6% per year for the next five years. Benin's debt management issue stems from ensuring adequate liquidity despite the uncertainties in global capital markets.

2. **There is a debt overhang problem in other countries**. When Sri Lanka was unable to finance the importing of fertilizers for its tea plantations, it made its long-term creditworthiness worse, not better. Many other countries are finding it difficult to find the fiscal space for high-return mitigation, adaptation and resilience projects. The debt overhang problem is about microeconomics – how to finance good projects when existing levels of debt are too high for new creditors to voluntarily provide new money.
3. **There is a debt-as-insurance problem in some countries**. When Caribbean countries incur debt to cover the costs of a natural disaster, they build up liabilities at the same time as key assets are being destroyed. The debt can have an intertemporal smoothing function, putting some of the burden of adjustment onto future generations, but it does not reduce the net present value of the losses and is inefficient and unfair if even larger shocks are expected in the future. With a growing number of disasters being linked to climate change, the debt problem in these countries is at heart a problem of an inadequate application of the 'polluter-pays' principle in international finance. Countries that contributed least to climate change are being damaged, while those who are most responsible for climate change have no legal responsibility to provide compensation, whereas in a domestic dispute over loss and damage this requirement would be commonplace.

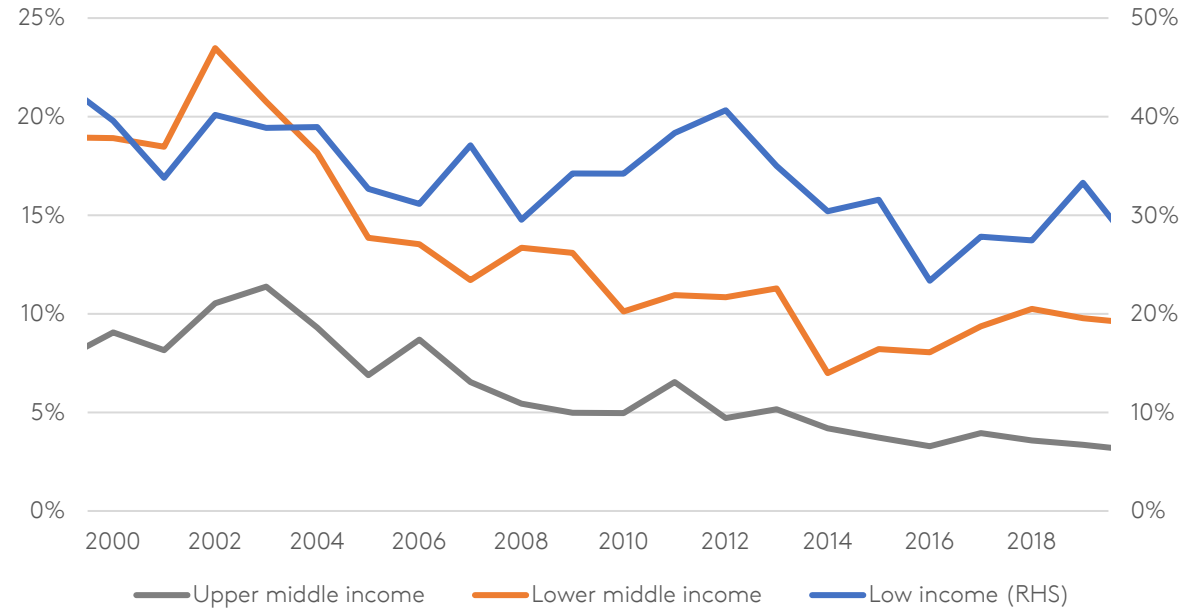
6.3. Solutions to improve debt management

6.3.1. Liquidity problems

Liquidity problems emerge when the structure of debt service payments is lumpy, as in the case of the Benin Eurobond example mentioned above, or when the economy suffers an external shock, which is often related to unfavourable terms of trade developments or, as has been the case more recently, to the disappearance of tourism revenues as a result of COVID-19. Liquidity problems can be exacerbated when countries rely excessively on private capital markets, particularly sovereign bond markets, where capital flows are procyclical and where there is greatest difficulty in gaining consensus on restructuring parameters in the event that debt service has to be restructured.

Liquidity problems are becoming harder to manage in part because official lending, from both bilateral and multilateral sources, has declined in importance. As Figure 6.3 below shows, multilateral creditors today account for only half the share of external debt service of middle-income countries compared with their share in 2000.

Figure 6.3. Multilateral debt service (% total debt service), 2000 to 2018



Note: Upper-middle and lower-middle income countries are shown on the left-hand axis and low-income on the right-hand axis.
Source: World Bank International Debt Statistics, accessed January 2022

Priorities for managing liquidity risk include:

- Creating easier access on reasonable terms to official liquidity facilities, without penalty surcharges.[3]
- Developing better market mechanisms to reduce liquidity risk, as will happen through the Liquidity and Sustainability Facility (see Box 6.1).[4]
- Placing more reliance on official finance where longer maturities and grace periods reduce lumpiness in repayment schedules.
- Making greater use of multilateral insurance and guarantee facilities to hedge near-term fiscal risks.
- Issuing new special drawing rights (SDRs) into the international system on an on-going basis (supplemented by scaled-up voluntary reallocation mechanisms; see below).

[3] The IMF imposes penalty surcharges for higher levels of liquidity, which disincentivises countries from accessing these facilities in a timely fashion. Surcharges are commonly used by central bankers to reduce moral hazard and excessive risk-taking by banks. However, when the issue stems from countries embarking on a big push investment with co-benefits at the global scale, it is inappropriate to apply surcharges. The IMF has recognised this by providing longer maturities at standard rates in its Resilience and Sustainability Facility, but the same principle should apply to all IMF lending to countries that have embarked on sound climate action programmes.

[4] The Liquidity and Sustainability Facility is a new mechanism established at COP26 to support the liquidity of sovereign Eurobonds and to incentivise the issuance of SDG and green bonds.

Box 6.1. The Liquidity and Sustainability Facility (LSF)

There are few mechanisms for converting EMDC sovereign bonds into liquid assets in a timely and affordable manner, and this results in EMDCs paying a liquidity premium on their market financing.

African countries alone have a bond market exposure of about $160 billion and pay on average an additional 170 to 250 basis points due to the illiquidity of their paper. Removal of this liquidity premium would save them $2.7–4 billion each year.

The lack of adequate market infrastructure for EMDC bonds can be solved by putting in place repurchase or repo markets, as is commonly available for other financial instruments. The total volume of repos traded daily in advanced markets is about $20 trillion for both sovereigns and corporates, suggesting that repo markets are a critical component of efficient market functioning.

The Liquidity and Sustainability Facility launched by the UN Economic Commission for Africa creates a repo facility for African sovereign bonds. It provides international investors with a rapid and transparent way of converting their securities into cash. This will attract new investors into the market, creating competition and diversification, and eventually drive down pricing. With the rollover possibilities of the repo, the tenure of investments could also be longer. As the repo market develops, it is expected that prices will better reflect true country risk and provide better debt transparency.

The LSF, working with Citibank, Afreximbank and Bank of New York Mellon, was planning to close its first deal in November 2022. Additional funding will be crucial to the long-term success of the facility, as there is no African Central Bank to provide the needed liquidity. The LSF is looking for funding from multilateral institutions, commercial banks and individual EMDC central banks who see the facility as a tool to improve their country's creditworthiness.

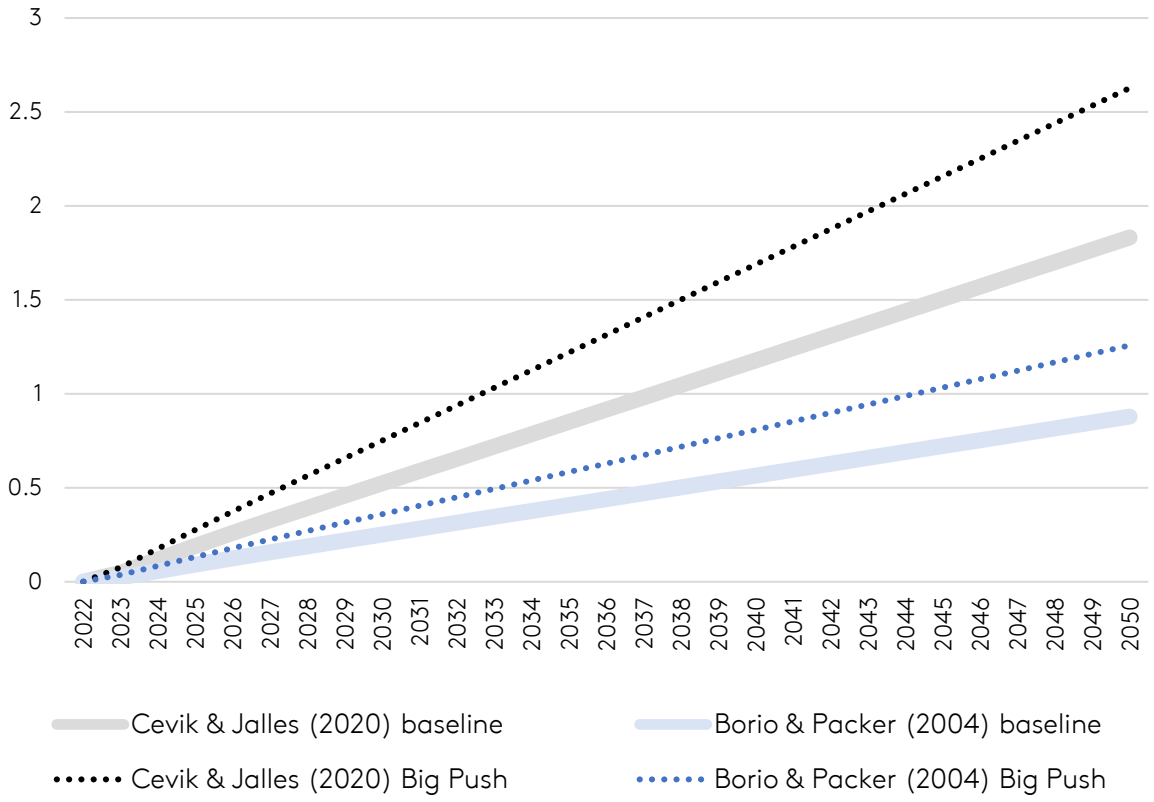
6.3.2. Debt overhangs

The big push strategy to invest more in climate change mitigation, adaptation, and land-use and nature-based solutions represents a trade-off between taking on more debt for the right kind of investments. To be successful, the strategy relies on sound public investment management. If project returns are higher than the cost of finance, creditworthiness will generally improve under a big push strategy compared with the current business-as-usual (BAU) strategy.[5] In the big push, there is an improvement in creditworthiness from higher income levels and growth that more than offset the decline in creditworthiness caused by higher debt levels and fiscal deficits.

Figure 6.4 below simulates creditworthiness under the big push and BAU scenarios. The simulation applies coefficients that have been estimated by academics to the evolution of macro variables (debt, growth, fiscal deficits and income levels) along each scenario. What is clear is that the big push improves creditworthiness even more than the BAU approach under both the models considered.

[5] In the big push scenario, we assume that fiscal deficits and public investment increase by 4 percentage points of GDP, financed equally by domestic resource mobilisation and by external borrowing. Growth accelerates by 1 percentage point (an ICOR of 4). The levels of debt and income are arithmetic functions of the primary deficit, interest rates and growth rates.

Figure 6.4. Projected change in average developing country credit ratings from 2022 to 2050

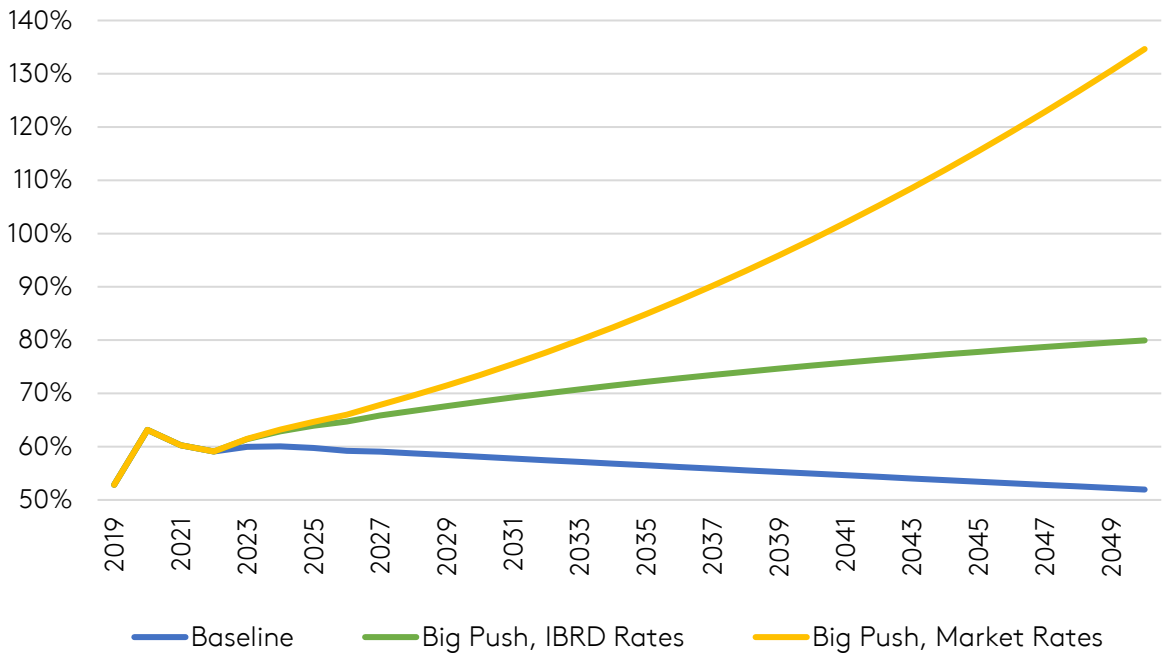


Note: *Scale is a composite creditworthiness score, averaged across major CRAs, with each step equivalent to one notch. 0 represents default, and 21 is AAA.*
Source: *Authors' estimates using sources named on figure.*

The improvement in creditworthiness shown in Figure 6.4 depends critically on the assumption that the external financing portion of the big push is mobilised from official creditors on standard non-concessional rates, rather than at private capital market rates. This dramatically reduces the rate at which debt accumulates. To see this, we ran the identical simulations using the interest rate faced by an average developing country accessing global private capital markets. In that scenario, the debt/GDP ratio rapidly spirals into uncharted territory (see Figure 6.5). By contrast, it stabilises at its current level in a BAU scenario. Under the big push scenario, debt/GDP rises faster than the baseline by about 1% each year, but the capital stock and output rise even faster.

These simulations underscore a crucial point: **a big push strategy is feasible only if the incremental financing comes largely from official lenders who are able to offer loans to developing countries for investment purposes at affordable, albeit unsubsidised and non-concessional, rates of interest.** Multilateral official finance is most useful because it can be offered on suitable terms and because multilateral creditors enjoy preferred creditor treatment from borrowers.

Figure 6.5. Average developing country debt projections from 2019 to 2049



Source: *Authors' estimates*

There are several mechanisms for augmenting the flow of official resources for climate action. These include:

- Expanding the activities of multilateral and bilateral lenders (trebling their sustainable lending volumes).[6]
- Extending the suspension of official debt service for countries embarking on suitable big push investment programmes.[7]
- Innovating with non-debt financing streams, including participation in voluntary carbon markets.[8]
- Improving the functioning of the Common Framework, including its extension to climate-vulnerable countries.[9] [10]

Economic variables are only one factor entering creditworthiness assessments. Another is institutional strength, proxied by metrics of the rule of law, governance or corruption; this factor is empirically more important in explaining the differences in creditworthiness across

[6] The recommendations of the G20 independent review of MDB Capital Adequacy Frameworks provides details on how this could be achieved.

[7] An expanded Debt Service Suspension Initiative would provide immediate access to resources that could be used to implement sound climate action programmes.

[8] Mechanisms to avail of Article 6 of the Paris Agreement could provide substantial non-debt flows that help reduce debt accumulation.

[9] The Common Framework could consider long-term investment programmes in determining the extent of debt reduction recommended from existing creditors. It is the only current mechanism for tackling the debt overhang problem front-on, but coverage to date has been limited and progress slow.

[10] See V20 Statement on debt restructuring for climate-vulnerable countries (V20, 2021).

countries. Any big push investment strategy should be accompanied by improvements in the investment regime, especially if it hopes to attract foreign investors, and such improvements would cause creditworthiness to improve substantially.

A final note: a debt overhang affects a country's ability to access additional external capital for new investments. It can also, however, affect the legal authority of policymakers to incur new debt. Most countries have fiscal rules designed to constrain the Executive from overborrowing. Temporary exemptions to these rules were provided to manage the COVID-19 emergency economic situation. Such exemptions are now expiring. They would need to be reinstated, at least for a portion of the new investments oriented towards climate action, for a big push to be successfully implemented.

6.3.3. Insure against shocks

Vulnerable countries can suffer catastrophic losses from a single event. In some cases, their economies are too small for the risks to be pooled across communities and thus the whole country is battered. For example, when a hurricane hits a small island, everyone suffers. In such cases the global community must step in to help shoulder some of the burden of loss, else it condemns the country to a cycle of constantly rising indebtedness.

The implication is that concessional finance must be made available for such situations, yet commonly, vulnerable countries that are not among the poorest countries have no access to concessional finance because these funds are targeted at the poorest countries. Furthermore, money is useful to help households cope immediately after a disaster (or better yet, immediately before, if early warning is available), so disbursement mechanisms need to be automatic. Negotiating new loans can take valuable time. For this reason, adding clauses into bond contracts that provide immediate cash relief in the event of a large natural disaster or pandemic can have major impact. The approach has been successfully piloted by Barbados but could be systematised across all bond contracts dealing with development or climate finance, including those issued by multilateral financial institutions.

A novel way of providing quasi-insurance to vulnerable countries is to facilitate their access to debt-for-climate swaps, especially when grants are not otherwise accessible. IMF research suggests that debt-for-climate swaps make sense when climate adaptation is efficient and when fiscal risks are high but debt is not necessarily unsustainable (Chamon et al., 2022).

Policy priorities include:

- Inserting liquidity clauses into sovereign bond contracts, triggering the suspension of debt service payments in the event of a natural disaster or pandemic, as piloted by Barbados.[11]
- Reviewing criteria for allocation of grants and concessional aid to include vulnerability as well as income level of the recipient.[12]
- Availing of debt-for-climate and debt-for-nature swaps to make appropriate investments while limiting debt accumulation.

[11] Barbados has included natural disaster and pandemic clauses in its bond contracts. These clauses provide immediate liquidity in the event of a large adverse shock. The immediacy of the cash relief adds significantly to the value of these clauses. While Barbados has not paid a premium for the addition of these clauses, it would be preferable to have a system-wide approach with such clauses made standard for all development bonds, including those issued by development finance institutions like the MDBs.

[12] Small islands in particular may have income levels that are too high for them to access concessional funds under existing rules yet they are among the most vulnerable countries to climate-related disasters and need mechanisms of global solidarity when disasters hit.

- Establishing a global Loss and Damage Facility to pay for climate-related disasters while ensuring that contributions are additive to existing ODA.[13]

To recap: a big push strategy will inevitably require countries to take on additional debt. Despite current fiscal stress, there is a strategy that is consistent with the big push but that requires reform of the international financial architecture:

- First, there must be an improvement in the provision of liquidity in the event of economic downturns or natural disasters.
- Second, new borrowing must be on affordable terms, best intermediated through multilateral and bilateral official financial institutions.
- Third, provision must be made for global solidarity to share the costs of climate-related disasters when they strike small countries that are especially vulnerable.

Technical fixes for each of these strands of strategic debt management are available. The political will to align the practices of multiple financing agencies to this strategy will be a crucial ingredient for success.

[13] One way of doing this is to use the proceeds from a global 2% cess on fossil-fuels as a source of finance for the Facility.

7. Ramping up private investment and finance

7.1. Introduction

Emerging markets and developing countries will not be able to finance the scale of long-term investment programmes necessary to meet their climate and development goals without mobilising significant additional private capital – at least $1 trillion a year by 2030 from different parts of the financial system, domestic and international.

The majority of this investment is needed in capital-intensive clean energy assets – such as wind, solar PV, batteries, electric vehicles and hydrogen electrolysers – and other low-carbon solutions for energy systems, transport, buildings and agriculture. These 'new climate economy' assets have relatively high upfront investment costs and lower operating and fuel expenditure compared with traditional assets over time. Seventy per cent of these investments over the next decade will need to be carried out by private developers, consumers and financiers. A significant proportion of that investment is needed in EMDCs, where the enabling environment including real and perceived policy risks (e.g. the absence of carbon pricing, the pricing and certitude of offtake contracts, creditworthiness of the utilities) and the scarcity of well identified investment opportunities continue to be key barriers to attracting capital.

Rising inflation and interest rates will make it increasingly difficult for EMDCs to attract global financial flows for investment in the short term. But investors are still searching for productivity-enhancing long-term opportunities, particularly in inflation-reducing green and transition assets. This is true both in domestic financial markets across EMDCs as well as international financial markets, which are both important sources of capital. Some evidence of the continued appetite for investment in green assets can be seen in green bond issuance in EMDCs, an important mechanism for the development of domestic capital markets for investment in the transition. Issuance remains low compared with advanced economies, although it more than doubled to $95 billion in 2021 (from $41 billion in 2020), representing over 15% of global issuance (IFC, 2022). Efforts must be accompanied by frameworks for transparency and for assessing the sustainability credentials of these instruments and their additionality, in order to safeguard their quality and integrity, as the McKenna report is strongly emphasising (UN High-Level Expert Group on the Net-zero Emissions Commitmnets of Non-State Entities, 2022). Beyond the fixed income market, private finance in sustainable investments in EMDCs needs to be scaled up across all types of instruments. This includes developing well-designed low-carbon indices to help investors manage climate risks over the long term while protecting returns in the short term (Boissinot and Samama, 2018).

Similar evidence comes from the increased global momentum to invest in sustainable infrastructure (especially clean energy, electromobility, green buildings, low-carbon transport). The Glasgow Financial Alliance for Net Zero (GFANZ), launched at COP26 in November 2021, has resulted in more than 550 financial institutions in 50 countries, with assets that account for nearly 40% of global private finance, making a commitment to support transition of the real economy to net zero by 2050 and is working with its members to develop the necessary frameworks and approaches. GFANZ members are seeking investment opportunities and assets aligned or aligning with transition, and GFANZ is supporting this both by developing tools – such as a pan-sector transition planning framework – and by working to address barriers to the net zero transition. This includes supporting country-led platforms and JETPs. There are significant efforts being made on mobilising private capital for EMDCs through other initiatives, too, such as the Climate Finance Leadership Initiative (CFLI), the Global Investors for Sustainable Development alliance (GISD), the Sustainable Markets Initiative (SMI) and the Climate Policy Initiative's Finance to Accelerate the Sustainability Transition in Infrastructure (FAST-infra) (see Appendix 3).

Innovative structures have emerged in the last few years to support investment at scale in transforming energy systems in EMDCs, like Africa50, which drives innovative cooperation between private sector, governments, IFIs and DFIs to execute large projects (Box 7.1 describes Africa50's investment in Benban solar park in Egypt). The Amundi Planet Emerging Green One is another good example: a $2 billion fund with a $256 million cornerstone commitment from the International Finance Corporation (IFC), aimed at increasing the capacity of banks in emerging market to fund climate-smart investments. Climate Fund Managers (CFM) is another, proving the value of replication to reduce transaction costs and get to scale quickly. CFM launched the 'Climate Investor One' for renewable energy in 2017 and 'Climate Investor Two' for water and oceans in 2021. Both are blended funds for Africa, South East Asia and Latin America, with aggregate capital commitments of $1.8 billion to these two themes. These structures use a mix of public and private-sector funding, commitments from DFIs and an export credit agency guarantee to mobilise institutional capital. These initiatives represent private-sector-led solutions which could be replicated to unlock additional large-scale capital for climate-focused investments in EMDCs.

Box. 7.1. Africa50's investment in Benban: combining partnerships, technology and innovative multilateral finance to meet Egypt's power needs and climate goals

Benban, Egypt's giant 1.5 GW solar park, demonstrates how combining partnerships, technology and innovative finance can harness Africa's extensive solar resources for power generation while meeting climate change commitments. Over 30 DFIs, export credit agencies, banks, private and public investors are involved, with Africa50, the multilateral investment platform, financing six of the 41 plants, which have a total capacity of 380 MW.

Joining Norfund and Scatec Solar in 2017, Africa50 took a 25% equity stake in the project, supporting the project development phase. This early-stage investment capital helped leverage total funding of around $450 million from the European Bank for Reconstruction and Development (EBRD), FMO (the Dutch Entrepreneurial Development Bank), the Green Climate Fund, the Islamic Development Bank, and the Islamic Corporation for the Development of the Private Sector.

The successful execution of the project was down to the government of Egypt creating the favourable enabling environment investors seek. The plants are supported by 25-year power purchase agreements with the Egyptian Electricity Transmission Company (EETC) under its Feed-in Tariff programme, backstopped by a sovereign guarantee. Access roads and interconnection facilities were funded collectively by the developers under a cost-sharing agreement with EETC and the New and Renewable Energy Agency.

The refinancing of the six plants with a $335 million green bond in April 2022 also broke new ground, creating value for the shareholders and EETC. Distributed to a pool of private international institutional investors and a consortium of DFIs, it is the first green bond ever issued for non-recourse infrastructure financing in Africa. Risk mitigation instruments from the Multilateral Investment Guarantee Agency (MIGA) and EBRD helped provide comfort for the private sector investors, for some of whom this is their first investment in Africa. Moreover, the structure of the green bond establishes an efficient precedent for achieving an investment-grade credit rating for future transactions on the continent.

7.2. The problem: assessing and managing risk and cost of capital

Despite this momentum, the complexities and transaction costs to moving at the scale and speed needed – especially to crowd in mainstream investment – require targeted action to reduce the cost of capital and tackle real and perceived geographical-, technology- and project-specific risks in EMDCs. To design targeted solutions to these challenges, the risks

faced by the private sector must be disaggregated at specific points of the project lifecycle by different types of investors/private sector actors. These phases of risk can be grouped as follows:

- **Phase 1. Pre-feasibility/feasibility – lack of funding for project preparation and development.** Project preparation is a critical part of translating opportunities into realised investments. Limited funding and capacity for project preparation – or difficulty accessing existing project prep facilities – is a major constraint to scaling private investment in EMDCs. Scaling and streamlining existing facilities (such as the Global Infrastructure Facility) and exploring new project preparation tools and funds (e.g. CDPQ's $1.7 billion facility or the philanthropically funded SEACEF initiative for South East Asia [VRI, 2020]) and linking this capital to public sector country platforms will be critical to accelerating the development of a high-quality project pipeline. Ensuring domestic banks (including national development banks) can access project prep funding and are actively engaging with private investors (including through platforms like CFLI) in the early stages of project development will also be key to a long-term, investable pipeline. Even at this early stage, a lack of clarity on how exchange rate risk will be managed through the project cycle will be an obstacle that may prevent projects from moving forward. Structuring the project to minimise currency risk exposure and developing a currency hedging strategy from the early stages of project development will be essential.
- **Phase 2. Construction – lack of effective risk mitigation.** The construction phase of the project lifecycle requires managing traditional risks including permitting, delays, contractor risk, technical issues, and so on. In advanced economies, these can often be insured against or taken on as a commercial risk. However, in EMDCs these risks can be higher – or perceived as being higher – especially when working with new partners. For smaller scale projects, such as smaller scale renewables installations, local developers may not have the balance sheet strength necessary to absorb such risks. Establishing collateral and other legal risks may also be higher, or perceived to be higher, in emerging markets, depending on regulatory regimes. Transferring or managing key risks including counterparty, offtake and currency/ exchange rate risk can help bring down the cost of capital significantly. This is critical as these risks, if left unmanaged, will spill over to the investor and impact the credit risk of the entity seeking capital. This is particularly relevant for larger scale projects, where the aggregation of these risks may make it very challenging, for a consortium, to seek financing at a reasonable cost of capital. Blended finance solutions like development guarantees, insurance and hedging provided by donor agencies and development banks can be used to mitigate these risks and improve the credit rating of a project. They have been proven in structured vehicles like the Emerging Africa Infrastructure Fund, Climate Investor One and the Elazig hospital bond. Often the transaction costs of combining these different instruments can be excessive – requiring more standardisation and simplification of processes, especially when working with multiple partners. (Later in this section we describe blending mechanisms.)
- **Phase 3. Operation – barriers to mobilising large pools of institutional capital.** Unlocking pools of large-scale, long-term capital to refinance operational projects can be delicate. It moves financing of the project onto players who generally have less appetite for risk and who are often unfamiliar with these markets. At this stage, it is essential to address three issues: (i) better data; (ii) aggregation; (iii) standardisation and benchmarks:

    i. Publishing the MDB GEMs (Global Emerging Markets Risk Database Consortium) database, standardising assessment frameworks (e.g. using FastInfra's sustainable infrastructure standards) and ensuring integrity of performance targets criteria (as

being developed by GFANZ) will be key. Here the old proverb 'what gets measured gets managed' is fitting.

ii. **and iii.** Aggregation and scale are particularly important to be attractive to institutional capital, but without data and benchmarks, many of the risks in the previous phases including creditworthiness will be inherited/exacerbated when the project is refinanced, escalating the cost of capital. Aggregation and credit enhancements, like first loss guarantees, can help deal with the distributed nature of risks at the refinancing phase. The Amundi Plant Emerging Green One Fund, for example, has successfully raised capital at scale through a securitisation technique with embedded first-loss protection to a global pool of green bonds to be originated in emerging market economies. The African Development Bank's 'Room to Run' $1 billion synthetic securitisation solution is another initiative designed to efficiently channel investment from private buy-side investors to EMDE infrastructure projects while freeing up the MDB's balance sheet.

The simple framework shown in Table 7.1 can help differentiate between different phases of projects, the different players and the key risk management tools they could use. Better data and information-sharing will be key to mitigating risks at each phase of the project lifecycle.

Table 7.1. Risk framework

Project phase	Private sector actor	Key risks	Potential risk management tools
Phase 1: Project preparation – pre-feasibility/ feasibility	Developers/early equity investors	• Project non-investable and not proceeding • Exchange rate risk planning	• Scaling project prep funding in existing and new vehicles; standardising access to existing project prep funding • Data sharing • Planning for currency risk management through project cycle
Phase 2: Permitting and construction	Developers/equity investors/private equity funds	• Regulatory risk (around permitting but also broader policy risks related to business model) • Construction risk (delays, accidents, etc.) • Exchange rate risk	• Data sharing and benchmarking • Tailored blended finance mechanisms including guarantees and insurance; cost-effective currency hedging

Phase 3: Operations – refinancing	Operating companies/ financiers (debt providers – local banks, global banks, asset managers, insurance companies, etc.)	• Sector and policy risk on viability of business model (e.g. around off-take and the creditworthiness of utilities) • Macro risk on ability to pay (e.g. faltering economic growth reducing disposable income) • Political risk • Exchange rate risk • Credit risk (e.g. large proportion of renewable energy investments will be undertaken by small and medium developers) • Scale • Stranded assets	• Blended finance mechanisms including first loss, guarantees and political risk insurance • Cost-effective currency hedging and maximising local currency financing to incentivise domestic institutions to participate in refinancing • Project aggregation • Standardised performance targets, reporting and data sharing • Using internal carbon price to test business model against stranded asset risk

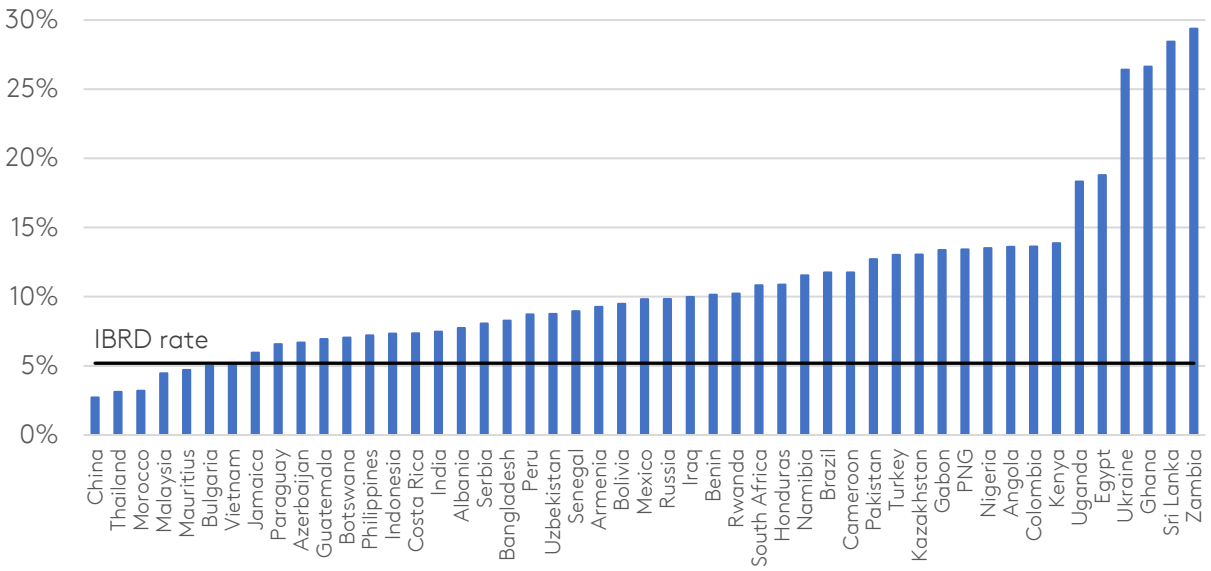
This risk framework helps identify a set of cross-sectional risks faced by different private sector actors:

1. **Weakness of investment climate**. This is particularly the case in energy investment and stems from policy uncertainty, which translates into offtake risk and creditworthiness risk of key players (e.g. utilities). Uncertainty around sustainability policy, energy subsidies and carbon pricing can exacerbate such risks.
2. **Exchange rate risk**. This arises because infrastructure projects by their nature often have currency mismatch between cost (in hard currency) and revenues (in local currency); this risk is often significant because of high sovereign risk premia in EMDCs.
3. **Asymmetric information on EMDCs**. Lack of familiarity of global private sector financiers and investors with EMDCs' markets leads to an inability to estimate risk, or at best an over-estimation of risk. This translates into high perceived risk across the project cycle.
4. **Pipeline**. Lack of a significant high-quality pipeline of investable projects in a country makes it difficult for a global private sector player to make a comprehensive commitment in a market. It also limits appetite due to size (see below).
5. **Scale**. The weakness of the pipeline often implies that the scale of investable projects is not sufficient for a private sector player to take an initial commitment as this comes with significant upfront costs, which may not be recouped if the pipeline does not materialise.

6. **Lack of data**. Investors need data to assess risk. If it cannot be measured, it cannot be managed. Lack of standardised taxonomies and accessible data often prevents investors from being able to progress.
7. **Lack of risk mitigation instruments**. When facing unmanageable risks, investors need to be able to access fit-for-purpose and simple risk mitigation instruments. Fragmentation and lack of suitable instruments will prevent investors from investing. This generates risks for the global financial system and for recipient countries. Initiatives involving use of public funds must avoid creating moral hazard from inappropriate application of credit enhancements and de-risking, as well as balance of payment vulnerabilities and capital outflow risks through EMDCs' greater exposure to international finance (Prasad et al., 2022).
8. **Mobilisation.** MDB incentive structures create a risk of 'crowding out' private capital instead of driving co-investment and mobilisation of additional private capital. This can lead to hoarding assets as opposed to using MDB capital to de-risk projects and unlock private investment.

This cascade of risks and impediments, if unmanaged, will lead to a significant escalation of the cost of capital. This is particularly true in emerging markets, where macroeconomic issues alone will significantly increase the cost of borrowing (see Figure 7.1 below).

Figure 7.1. Developing country 10-year bond yields



Source: Trading Economics and World Government Bonds, Market Insider, and Haver Analytics, extracted 10/14/2022

As analysis by Climate Policy Initiative shows (see Table 7.2), the cascade of risks – from macroeconomic to those in the solar sector – can lead to extremely high required rates of return for Solar PV-based power generation in EMDCs.

Table 7.2. Return expectation from solar projects in EMDCs

Country	S&P Rating	Required return from solar project (%)
Germany	AAA	7%
USA	AA+	9%
UAE	AA	10%
Saudi Arabia	A-	12%
Chile	A	12%
Morocco	BBB-	15%
India	BBB-	17%
Algeria	B	18%
Oman	BB-	18%
Peru	BBB	20%
Costa Rica	B	21%
Namibia	BB-	21%
Ghana	B-	22%
Brazil	BB-	22%
Nigeria	B+	22%
Bolivia	B+	24%
Tanzania	B	24%
Egypt	B	28%
Zambia	CCC-	38 %
Argentina	CCC+	52%

Source: Climate Policy Initiative (forthcoming)

7.3. Developing an architecture of solutions

Both public and private institutions, including philanthropical organisations, have been assembling options for potential solutions to ramp up investment. Organisations such as GFANZ, SMI and GISD have recently, for example, proposed important recommendations that would lead to higher levels of cross-border finance (GFANZ, 2022; GISD, 2022). The simple framework below is an attempt to structure thinking around potential actions:

1. **Private sector proactivity in committing to investing and gaining experience in EMDCs**
   a) Commit to increase, over time, the amount of investment in EMDCs and gradually absorb more of the risk through private sector balance sheets.
   b) Actively increase on-the-ground presence in countries to access, standardise and share data and information to reduce perceived risk.
   c) Build on the special COP27 initiative to use regional fora to identify priority projects and connect with private investors. Altogether, 104 projects were presented across five regions (see Box 7.2.).
   d) Institutionalise GFANZ regional programmes to connect international investors with local partners to identify investment opportunities and jointly mobilise finance.

Box 7.2. COP27 Special Initiative on regional fora to identify investable climate projects

The recent efforts by the High-Level Climate Finance Champions Team to use regional fora to identify adaptation and mitigation projects and connect them to potential investors is an excellent example of stronger collaboration between the public and private sectors to unlock opportunities for investment. In the lead-up to COP27, the regional fora identified 104 investable projects, across five regions, for a total of more than $120 billion in potential investment opportunities. Projects presented in these regional fora covered all sectors; energy projects made up the largest proportion (about 40%), followed by water infrastructure and agriculture (about 26%). About two-thirds of the projects presented had not advanced beyond the feasibility phase; about half of the projects were below $100 million in scale – reinforcing the importance of public–private–philanthropic partnerships to manage early-stage project risks and aggregate smaller scale projects to unlock institutional capital.

Source: UN Regional Economic Commissions; CDCC; Breakthrough; PIDA; GBW.

2. **Active participation to strengthen investment climate**
   a) Engage with MDBs and governments on country platforms to help identify priorities in investment climate and policy reform.
   b) Participate in coalitions and initiatives like the CFLI country pilots in India, South Africa and Colombia, aimed at convening domestic and international financial institutions with private sector players to strengthen policy enabling environment (CFLI, 2021).
3. **Pipeline development**
   a) Much stronger collaboration between private sector and DFIs on pipeline development, including joint project preparation leveraging the on-ground presence of DFIs.
   b) Scale up the Global Infrastructure Facility (GIF) to expand the pipeline of bankable sustainable infrastructure projects, utilising its links with both the MDBs and the private sector to develop stronger partnerships on project development. This scale-up should focus on streamlining engagement, bringing the private sector in earlier in the preparation of projects and design of financing solutions.
   c) Investment in upstream pipeline development, for example through programmes like the SEACEF facility for South East Asia.
4. **Data standardisation and sharing**
   a) Create shared, standardised datasets to minimise the cost of accessing information for risk assessment across the project cycle in key sectors, especially energy.
   b) Open and share datasets that can help with risk assessment, such as the GEMs datasets – where members (mostly IFIs for the moment) contribute anonymised data on credit events and in return gain access to aggregate GEMs statistics on observed default rates; rating migration matrices and recovery rates by location and sector can be particularly effective.
5. **Help design risk mitigation instruments and achieve scale**
   a) **Exchange rate risk.** Donor-funded mechanisms to provide hedging instruments in geographical locations where they do not exist is a priority, as the private sector will not be able to invest otherwise. MDBs are best placed to identify the right

instruments, as well as domestic partners, to provide such solutions in a cost-effective manner.

b) Policy risk. Depending on the type of risk – which may be generic credit risk or offtake risk – liquidity mechanisms supported by a development bank, similarly to what has been suggested by investor and asset manager Meridiam, can be potentially effective. Tackling specific risk with a more tailored approach, for example by broadening and scaling up guarantee instruments such as the ones offered by MIGA, may also provide cost-effective solutions.

c) Intermediation costs. Aggregation to generate an opportunity sufficiently large for institutional investors is an essential element to generate financial flows at scale. Reducing intermediation costs and some provision of first loss guarantees for risks that have not been managed upstream (at the project level or through the named instruments above), and therefore cascade into aggregate instruments, will in most instances still be essential to reduce the cost of capital, particularly in the current environment. The African Sovereign Investment Forum (ASIF), which brings together nine African sovereign wealth funds, strategic investment funds and long-term public investment funds, is a good example of collaboration in this space. It works closely with Africa50 and the African Development Bank to mobilise patient capital from institutional investors for adaptation and mitigation infrastructure investment and to accelerate Africa's just and equitable transition to net zero.

6. **Stronger partnerships on MDB optimisation**

a) MDBs incentives should be aimed at mobilising external finance effectively, as opposed to lending volumes. This will require changes in scorecards and mindsets, as well as alignment and drive from shareholders. This is discussed in more detail in Section 8.

b) MDBs supporting the creation of and participating more directly in third party equity infrastructure funds in EMDCs, and providing origination support as well as risk mitigation instruments, may be more effective than the other way round (i.e. MDBs seeking co-investment in individual projects). This enables private funds to develop on-the-ground experience and use their own investment processes and build scale. It could be done in exchange for long-term commitments of continued private-led investment and presence in a region or set of countries.

7. **Improve blended finance structures and cooperation**

a) Blended finance can play a key role in unlocking and financing climate investments given the risks and the long-term nature of returns. There has been much focus on potential solutions including through initiatives such as Tri Hata Kirana. It is now important to draw on the lessons from the considerable experimentation and innovation that has already occurred to push ahead with implementation and improved cooperation (Lankes, 2021).

b) Potential solutions include: building on successful models and initiatives; scaling up portfolio approaches; aiming for both impact and volume; strengthening governance to ensure value for money; and tackling the public–private culture gap.

There is great potential to accelerate implementation of these actions through knowledge sharing as the Blended Finance Taskforce has sought to do over the last few years. There is a growing body of analytical work focused on mobilising private climate financing, such as the recent IMF paper (Prasad et al., 2022). An important initiative during Egypt's COP27 Presidency is the preparation of the Sharm El-Sheikh Guidebook for Just Financing, which has the objective of capturing opportunities to leverage and catalyse needed finance and investments to support the climate agenda. The initiative, led by Egypt's Ministry of International Cooperation, has

brought together more than 100 stakeholders through an inclusive consultative process. The Guidebook will provide valuable insights on just financing for climate action, including through guiding principles; tackling perceived risk of investments in developing countries through bridging the information gap; mapping climate capital providers and their access criteria; innovative financing modalities to unlock private investments; and examples of successful climate-aligned projects that can be replicated and upscaled in developing countries.

Managing risks at each phase to mobilise domestic and international private capital will require both the public and private sector to commit to putting the right implementation modalities in place – at the country, regional and sub-regional levels. But the prize is worth it. Unlocking funding for project development and addressing barriers to private finance at the construction and refinancing phase will be key to delivering on climate and development targets and ensuring investment in the transition to a net zero economy is sustainable in the long term.

While there is a broad commitment on the part of the private sector to align with climate goals and increase financing for climate action in EMDCs, there is now a need to develop concrete and scalable solutions. There is still a lack of plug and play solutions for investors. Asset owners and other stakeholders need to be incentivised to come up with such solutions, as has been the case with some of the most promising innovations. Successful and innovative financial frameworks in this space, such as the IFC Managed Co-Lending Portfolio Program (MCPP), have benefitted from: identifying a clear and precise problem; securing the commitment of an asset owner/manager to tackle it by allocating internal resources; mobilising seed money; and developing a solution that can be replicated by other investors. This approach can be extended to many of the challenges identified above and will be most effective when combined with increased public–private dialogue and engagement, particularly in the context of country platforms.

8. The central role of the MDBs in the expansion of investment in climate and development action in EMDCs

There is a growing recognition of the need for a change in the mandate, operating models and scale and mix of financial support required from MDBs to enable them to respond to today's pressing global and development challenges, including, very centrally, climate change. US Secretary of the Treasury Janet Yellen set out this new imperative very clearly in her remarks at the Center for Global Development on 6 October 2022 (US Department of the Treasury, 2022). Her call for fundamental change has been echoed by others, including a call for action on MDB reform by a group of independent think tank leaders (CGD, 2022).

8.1. Revamping the role of the MDBs

To catalyse the major scaling-up of investment required to respond to the magnitude and urgency of climate and development challenges in EMDCs, the multilateral development banks need to move proactively, with the strong support of their shareholders. MDBs have already significantly strengthened their climate finance commitments. The latest joint MDB report on climate finance shows that in spite of the pandemic, climate finance from the banks reached a record level in 2021 at $50.7 billion for low- and middle-income countries, while adaptation finance reached a total of $19.2 billion, of which 92% went to low- and middle-income countries (AfDB et al., 2022). MDBs thus achieved the goal set for 2025 in 2021, four years ahead of schedule. Despite this progress, it is clear that much greater support will be needed from the MDBs to accelerate climate action in EMDCs.

Scaling up the MDBs' climate and development action involves both a significant expansion in the scope of their activities and a major increase in the volume of their financing. This is particularly important given their role as a stable source of long-term finance with a low cost of capital and a capacity to mitigate risk. Expanding their remit should include renewing their mission statements to clearly reflect environmental sustainability, given its fundamental impact on development. MDBs' effective engagement with the private sector and public development banks will also be necessary to achieving the required scale of activity and finance to address the climate challenge and achieve the SDGs.

While MDBs play a critical role in providing and catalysing finance, the full strength of the MDB system includes their unique combination of shareholder structure, policy advice, investment and capacity-building. Given these characteristics, **MDBs need to reform their strategies and operational activity to:**

- Step up engagement to support countries in the formulation of effective development and climate strategies and plans, including long-term strategies (LTSs), nationally determined contributions (NDCs), national adaptation plans (NAPs) and sector decarbonisation pathways.
- Shift from a project approach to a country/sector platform approach based on strong dialogue with countries including on policy, finance and capacity-building to drive scale, private finance mobilisation and systemic impact consistent with a just transition.
- Accelerate economic and sectoral policy analysis and advice driving transformative change, including strengthening the investment climate in countries, which is key to expanding private sector involvement and finance.

- Strengthen support for investment planning, project pipeline development and project preparation, including support to define optimal sector investment plans consistent with sector decarbonisation pathways.
- Expand support to countries for development of institutional capacity.

These actions are complementary and can reinforce each other. In combination they can support a major and sustained expansion of investment in EMDCs, which can deliver on development and climate goals by:

- Assisting middle- and low-income countries to develop and implement ambitious action plans with a focus on sustainable infrastructure and decarbonisation, adaptation and resilience, and the protection of nature.
- Developing a structured partnership with the private sector that can unlock private investment and finance at scale. This would encompass both a country-focused approach and country platforms, and de-risking instruments.

Given the scale and complexity of the climate and development challenges, MDBs must work together as a system, building on their respective expertise and comparative advantage. This involves improved coordination at country level and enhanced effectiveness through improved policy and operational articulation in line with the recommendations of the G20 Eminent Persons Group on Global Financial Governance (2018). MDBs can build on the strong record of collaboration on climate action from the past 15 years, achieved by 10 banks.

In addition to catalysing much higher levels of private finance, there must be strong support to expand public investment for adaptation, nature preservation, just transition and infrastructure such as transmission grids. The scale of this investment challenge, and the critical role of MDBs in supporting both the private and public sector, will require the tripling of MDB climate finance to $180 billion within the next five years to support the implementation of programmes in these areas, combined with a significant increase in private finance mobilisation. The recently issued Bridgetown Agenda for the Reform of the Global Financial Architecture calls for MDBs "to lend an additional $1 trillion for climate and development resilience" through MDBs' capital adequacy framework reform.

Climate action can be significantly enhanced by a close partnership between the MDBs and the regional and national public development banks (PDBs). MDBs have already established a strong collaboration with the International Development Finance Club (IDFC), which has 27 members from both developed and developing countries. MDBs have also been active partners in the global network of PDBs – numbering more than 500 – named Finance in Common, which concluded a summit in October 2022 focused on the 'Green and Just Transition for a Sustainable Recovery'.

The strong rationale for a close engagement between the MDB system and the regional and national PDBs reflects a number of core factors in the effective scaling-up of climate and development finance. PDBs, particularly at national level, have a deep understanding of local conditions and an extensive network of collaboration that can provide effective channels for consultation and implementation. PDBs are often large economic players within their countries and play an important role in both the formulation and the implementation of national policies. Beyond their pure investment power, estimated at $2.7 trillion of new financing in 2022, PDBs are significant sources of local currency finance, which is particularly relevant to the financing of climate projects. PDBs can also offer concessional finance, which is important to a range of climate and development projects.

8.2. Shifting the scale of MDBs' climate and development finance

MDBs are also uniquely positioned to support the scaling-up of transformational development finance in EMDCs, based on the following strengths. MDBs:

- Take a country-driven approach and undertake dialogue with client countries.
- Can build financial models based on preferred creditor status, leveraging limited shareholder paid-in capital and strong capital adequacy frameworks.
- Possess a broad range of public and private financing instruments.
- Can provide long loan maturities and low interest rates, backed by effective funding strategies.
- Can make concessional windows available (applies to only some MDBs).
- Can provide blended finance instruments combining MDB and concessional finance to support technical assistance, risk mitigation and market incentives.
- Manage trust funds from donors supporting, for example, policy development, project preparation or capacity-building.

The required increase in MDBs' lending capacity to EMDCs can be achieved through a combination of capital utilisation optimisation measures, higher provision of reserves from net income, changes in business models that permit asset sales and other financial instruments to move assets off balance sheets, and, as needed, capital increases. This will require action by shareholders and MDBs, delivered with purpose and determination. It will also require a concomitant increase in skills, internal resources and concessional finance to provide the basis for the deployment of a significantly expanded level of financing and capacity-building activity. Staffing numbers need to be expanded, to increase the volume of existing activities such as adaptation projects, and staff skills need to be enhanced, to equip employees so they can develop new instruments or support the deployment of new technologies, for example.

The expert panel convened by the G20 for an Independent Review of MDBs Capital Adequacy Frameworks (Expert Panel on MDBs' Capital Adequacy Frameworks, 2022) concluded that that there is evidence that MDBs are more prudent than required to preserve their AAA issuer ratings. This leads to significant unused headroom due to:

- More conservative approaches than used by credit rating agencies.
- The creation of 'extra safe' buffers to deal with the uncertainty, by multiple and partly subjective Credit Rating Agencies (CRA) methodologies.
- A significant underestimation of the value of Preferred Creditor Treatment in risk weights, with risk weightings not generally appearing to reflect actual granular credit risk evidence.
- Capital utilisation innovations being successfully deployed by some MDBs but not others.
- Results of simulations with generic balance sheets that the Panel commissioned, which show lending headroom well within the AAA range.

Table 8.1 below, based on data from individual MDBs, provides information on capitalisation structure, commitments and disbursements, statutory gearing ratios and headroom.

Table 8.1. MDBs' financial parameters (US$ billion)

MDB	Total liquidity	Total equity	Paid-in capital	Reserves	Commit-ments	Total commit-ments	Net loans outstanding	Callable capital	Lending limit[1], loans/ capital	Headroom
ADB	42.159	52.64	7.566	44.740	16.146	183.266	129.778	145.553	1.0	68.412
AfDB	17.038	11.14	7.055	4.087	6.007[2]	128.923	50.407	134.132	1.0	94.866
AIIB	20.188	20.14	19.350	0.032	9.980[2]	10.700	3.600	77.399	1.0	93.943
EBRD	40.364	22.93	7.180	15.634	12.733	56.052	31.818	27.215	1.0	18.328
EIB	85.584	85.12	25.699	57.442	76.538	647.012	515.456	262.431	2.5	353.431
IBRD	82.800	49.81	18.608	31.757	30.523	295.005	218.799	279.197	1.0	110.209
IDB	36.420	34.13	11.853	22.622	45.344	126.453	104.761	164.901	1.0	94.269
NDB	11.400	10.33	10.000	-0.026	10.277[2]	24.435	6.612	40.000	1.0	43.721

Notes: Data based on latest fiscal year (2021 or 2021). 1. The lending limit is defined as the amount that an MDB can lend relative to the amount of capital it has on its balance sheets, including both paid-in and callable capital where relevant.
2. The figures used for AfDB, AIIB and NDB represent approvals by the banks instead of commitments.

Sources: Moody's Investor Service; ADB Information Statement (2021); AfDB Annual Report (2020) and AfDB Financial Report (2020); AIIB Auditor's Reports and Financial Statements (2020) and AIIB Annual Report (2020); EBRD Investment of Choice (2022) and EBRD Financial Report (2020); EIB Financial Report (2020); IBRD Financial Statements (2021); IDB Information Statement (2020); NDB Annual Report (2020) and NDB Investor Presentation (2021).

Building on these findings, the Expert Panel (ibid.) highlighted five main recommendations to enhance capital utilisation:

1. **The active setting of risk tolerance** by shareholders for the MDBs' capital adequacy frameworks, not simply a non-transparent reaction to multiple, shifting and subjective CRA approaches. This involves an examination of the MDBs' actual risk exposure, including the value of preferred creditor status.
2. **Acknowledging the existence of callable capital** in the way MDBs manage their risk. This would recognise that callable capital has value for the markets and for CRAs, while not 'using' this capital would reflect a misunderstanding of its nature.
3. **The expanded use of financial innovations** that increase lending headroom, including measures taken by individual MDBs and DFIs that have not been replicated across institutions.
4. **Engagement with the Credit Rating Agencies** by MDBs and their shareholders to enhance understanding of MDB financial strength, operations, mission and shareholder support.
5. **Strengthening the governance** of MDB capital adequacy, enabling better governance through transparency and more effective benchmarking of MDB capital adequacy frameworks, and creating networks or standalone structures to support dialogue, research and collective action between MDBs, shareholders and other parties such as the CRAs. This would include MDBs making credit information available to other parties through the GEMs (Global Emerging Markets Risk Database Consortium) platform.

Ultimately, it will be up to the shareholders of each institution to consider these recommendations to determine how to harness the full potential of capital while preserving high credit standing. The G20 can also play a key role by ensuring a structured approach and synergies across the MDB system.

Beyond the recommendations of the MDBs Capital Adequacy Frameworks review, **other options that can increase the headroom of MDBs within their current capital while remaining within a prudential risk framework include:**

- **Adjustments in portfolio concentration limits**, which could be particularly relevant in the case of large EMDCs where MDB finance supporting a rapid transition to a low-carbon, climate-resilient economy could be constrained by these limits.
- **Portfolio sales**, which can provide additional MDB commitment capacity by accelerating portfolio turnover.

Furthermore, MDBs are aligning to the Paris Agreement goals and have defined climate finance targets to 2025 within their current capital framework (COP26, 2021). This will support increased climate finance driven not only by internal capacity but also by demand from EMDCs, reflecting the MDBs' evolving climate commitments, strategies and goals.

To reach the relevant scale of investment, and going beyond capital optimisation measures, the MDB system will require capital expansion. **While the level of additional capital will vary across MDBs according to their projected capital utilisation levels, capital expansion options include:**

- **Green capital increases** that consider the high leverage ratio that can be achieved due to the specific capitalisation structure of the MDBs. For example, the World Bank has provided cumulative lending of $750 billion with paid-in capital of $19 billion to its clients since its inception.
- **Temporary subscriptions of callable capital.**
- **SDR reallocations,** which would create increasing lending capacity, depending on the form of contribution, with a hybrid capital contribution having higher leverage than a loan option. The scope of this approach would also depend on the number of MDBs that could benefit from this capitalisation.

While MDBs have demonstrated the capacity to increase climate finance on their own balance sheet since the Paris Agreement, private finance mobilisation remains low. The Overseas Development Institute estimates that "overall, global leverage ratios for MDBs and DFIs as a whole are very low, ranging from 1:0:14 to 1:1.3"(Attridge and Engen, 2019). It further estimates that "$1 of public investment mobilises just $0.37 of private investment in low-income countries, $1.06 in lower middle-income countries and $0.65 in upper middle-income countries." The expanding range of MDBs' blended finance instruments has not led to a significant increase overall in the private finance mobilisation ratio, as the development of these instruments has often been time-consuming and the replication potential limited. Furthermore, MDBs remain predominantly oriented towards the public sector, with a high share of sovereign and sovereign-guaranteed debt in their portfolio. Most MDBs have a high public share in their outstanding portfolio. For the World Bank Group, the public sector share of the combined IBRD, IDA and IFC portfolios was 89% in 2020. This share was 76.5% for the African Development Bank, 90.8% for the Asian Infrastructure Investment Bank and 93% for the Asian Development Bank. Reflecting its private sector-oriented mandate, the public share of the EBRD portfolio was 23.9% in 2020 (S&P, 2021).

In order to significantly increase private finance mobilisation, MDBs need to place a strong priority on expanding their private sector operational activity, to increase the use of proven instruments and to develop further innovative ways to enhance private finance mobilisation related to their own operational activity in direct and indirect ways. Furthermore, MDBs should expand their market development impact, including through local capital market development and policy work to open up new market opportunities for private investment.

The successful implementation of this approach will require:

- The active engagement and leadership of countries
- A proactive push by the MDBs in expanding the number of country sector platforms
- Sufficient concessional finance to support activities in low-income countries (LICs) and Small Island Developing States (SIDS), to boost adaptation finance, develop nature-based solutions and address just transitions.

Only the effective combination of public and private finance can reach the scale of finance required to address the sustainable development challenge in EMDCs, particularly when taking into account the constraints on public finance in the wake of the pandemic. The MDBs have a unique role to play in making this effective combination a reality in EMDCs.

8.3. Key elements of a reform agenda

Below we make seven recommendations for the future of the MDB system in relation to climate and development. They are complementary and together constitute a major recasting and scaling up of the role of the MDBs. Our analysis makes clear that unless this happens, we cannot reach the goals of the Paris Agreement, reinforced by the Glasgow Pact, and, as we have emphasised throughout, the consequences of that failure would be catastrophic. Leadership at the highest level – from the shareholders and the international financial institutions – is crucial to the adoption and implementation of these recommendations, and accordingly the following is directed at those leaders:

1. **The MDBs, working with countries and sectors, and together as an MDB system, should play a purposive and proactive role, to define, identify, enable and foster the programmes and investments** necessary for the implementation of the Paris Agreement. This will involve supporting countries in the development of country platforms, and in processes of development of programmes and projects. This must be systemic for both countries and sectors, with a focus on implementation. It will involve a major step-up in ambition, purpose and collaboration. It will help chart and deliver a new, sustainable, resilient, productive and inclusive approach to growth and development.
2. **The major role of the private sector in the necessary investment and its finance requires a large scale-up in the collaboration between MDBs and the private sector.** This includes the direct involvement of the private sector in helping to create the conditions for investment and innovation, for which their experience and knowledge, including of obstacles to investment and finance, are essential. Crucially, this involves collaboration with the private sector in assessing, managing reducing and sharing risk, which is critical both to bringing down the cost of capital and to mobilising private investment and finance on the necessary scale.
3. **The MDBs must significantly scale up their work with the public sector and authorities to enable the large necessary public investments**, which are core to the overall necessary investment programme. These include, for example, electricity grids, public transport, adaptation/resilience, natural capital, and a just transition. The MDBs have great and valuable experience in these areas, and in tackling the challenges of necessary public finance, but it must be leveraged and scaled up into action, and with urgency.
4. **The MDBs and their stakeholders must recognise, explicitly and as a matter of urgency, that these tasks require a multiplying of their flows of finance by a factor of two to three in the next five years.** In so doing they must make the cost of capital manageable.

This scale-up is not simply desirable but necessary to achieving the objectives of the Paris Agreement and commitments made at COP26.

5. **This scaling up of financial flows from the MDBs can be built in part on utilising the capital already available more effectively**, including by applying the ideas of the recent Independent Review of MDBs Capital Adequacy Frameworks commissioned by the G20 (Expert Panel on MDBs' Capital Adequacy Frameworks, 2022).
6. **While the expansion in flows that could be facilitated by applying the ideas of the review of MDBs' capital adequacy frameworks would be valuable, shareholders must recognise that capital increases for the MDBs over the coming five years will be required to achieve the necessary two-to-threefold increase in flows.** The increases necessary are small in relation to the increase in flows they can enable and place only modest demands on the budgets of shareholders – they are extraordinary 'value for money'. The necessary amounts and timings will vary across institutions in the MDB system. The expanded level of MDB financing and capacity-building activity will require a concomitant increase in skills, internal resources and concessional finance.
7. **Beyond the MDBs, there is great potential to harness the entire public development bank system.** Bilateral DFIs can greatly step up their support for green investments and local development banks are best placed to provide a powerful impetus to local lending, longer horizons, public domestic resources, and local capital markets. A new architecture of cooperation among development banks, as the Finance in Common initiative is trying to create, can be a powerful means to accelerate climate investments.

9. Delivering on and expanding concessional finance

9.1. Criticality of official concessional finance

Concessional finance from bilateral donors is the most critical component of the $100 billion commitment. Developed countries pledged to increase their climate finance commitments in 2021 at the G7 Carbis Bay Summit and again at COP26 in Glasgow. Since then, there have been additional commitments, as indicated in the updated Delivery Plan. Nevertheless, the total magnitude of official concessional finance remains low relative to the priority needs that require concessional finance. This includes adaptation and resilience, nature and biodiversity and support for poor and vulnerable countries. There is also a growing gap in the financing needed to respond to loss and damage.

The Bridgetown Initiative makes a compelling case for a major boost to concessional finance given these priority needs. While concessional finance should be primarily directed to poor countries, there is a need for adequate support for just transitions in middle-income countries associated with accelerated exiting from fossil fuels such as coal. It is also critical to scaling up other pools of climate finance, including the multilateral climate funds and the multilateral development banks, and ultimately leveraging the much larger sums of private finance that will be needed.

To achieve this, all developed countries will need to increase their climate finance commitments, recognising that some are already providing a greater share of climate finance than others. Developed countries have agreed to double adaptation finance by 2025 and take steps to improve access and transparency. There is also an urgent need to increase the level of grant financing from its present low amount ($12 billion in 2018).

We call for seven goals to scale up and enhance the contribution of official concessional finance:

1. **Donors must double bilateral climate finance to $60 billion by 2025 from its 2020 level.** Based on the commitments already made, this is an achievable target, and is essential to the overall package of climate finance.
2. **Donors must rapidly scale up their commitment to adaptation finance in line with the Delivery Plan.** A doubling of adaptation finance must be the immediate target but much larger sums will be needed.
3. **Donors can improve the effectiveness of limited concessional finance by aligning strongly behind country priorities and programmes,** for example through country/sector platforms and partnerships for scaling up finance for priority goals.
4. **Donors must enhance their support to the multilateral concessional climate-related funds,** such as the Green Climate Fund (GCF), Global Environment Facility (GEF), Climate Investment Funds (CIF), Global Infrastructure Facility (GIF) and Adaptation Fund. These funds collectively play an important role in the scaling up of climate investments and mobilising climate finance. They could do more if given the resources.
5. **There is an urgent need to improve the architecture to respond to loss and damage.** The Global Shield announced by the G7 and in partnership with the V20 can help strengthen insurance and prevention activities. But as the Bridgetown Initiative, the V20 and African Ministers have stressed, there needs to be an explicit financing mechanism to deal with the uninsurable impacts of climate change. A clear commitment towards this goal must be an important outcome of COP27.

6. **Donors and other climate finance providers must tackle the impediments to access faced by many developing countries.** As the Delivery Plan sets out, several steps have been taken to improve access, including the Task Force on Access to Climate Finance working with five pilot countries and the Climate Finance Access Network. As the Delivery Plan notes, "these efforts are only the beginning" and a more systematic and sustained effort is called for. A study commissioned by Canada and Germany has identified 'four Cs' for effective access to climate finance: Capacity, Coordination, Coherence and Communication. This should be developed into an agenda for action.
7. **Finally, there is a need to enhance the transparency and predictability of climate finance, including from bilateral providers.** There have been several improvements made in the biennial reporting methodology and in the OECD's tracking of climate finance but gaps still remain.

9.2. Enhancing the use of special drawing rights (SDRs)

A new SDR allocation, equivalent to $650 billion, was issued in August 2021, the fourth general allocation and by far the largest. EMDCs other than China received $250 billion of this, with $53 billion going to lower middle-income countries and $9 billion to low-income. Although SDRs are a reserve asset, not immediately available to governments to finance public expenditure, they do provide opportunities to open up fiscal space. More significantly, as a majority of the SDRs go to high-income countries, these SDRs can be reallocated to support priority needs in EMDCs, including climate action. At the Carbis Bay Summit in June 2021, the G7 asked finance ministers and central bank governors to develop and review proposals for a voluntary $100 billion reallocation of SDRs from countries with excess reserves.

These discussions have led to the establishment and launch of the Resilience and Sustainability Trust (RST) to enable the IMF to support long-term action on the transition. Several countries have or are in the process of applying to the Trust and this rapidly growing use of the tool can bolster the Fund's role in supporting long-term climate action on both adaptation and mitigation. The successful operationalisation of the RST can pave the way for expanding the scale and scope of the RST, given the broad-based and sustained challenge posed by climate. As the Task Force on Climate, Development and the International Monetary Fund has pointed out, the RST has the potential to support three objectives: (i) provide capacity for countries to respond to climate shocks without significant increases in debt burdens; (ii) catalyse low-cost financing and capacity-building for poorer, climate-vulnerable countries to build climate resilience and adaptation strategies; and (iii) enhance the ability of EMDCs to mobilise longer-term financing for just transitions to low-carbon growth paths. To achieve these goals, the scale will have to be much larger, the terms of lending to be for low-cost loans, and the access criteria set to allow broad participation.

SDRs could potentially be used through other vehicles including the MDBs to support climate priorities. SDRs could also be used to leverage the new Liquidity and Sustainability Facility, which aims to bring down the cost of private finance for African sovereigns. And SDRs could be used to leverage private finance through Trusts in the IMF or the MDBs, as proposed by the Bridgetown Initiative.

Given the tremendous potential that SDRs hold to boost climate finance at a critical time, two changes need to be made to tap their full potential, as African Finance Ministers have pointed out (ECA, 2021):

- **First, the SDR system should return to its original design.** General allocations should be made during all five-year basic periods, and the IMF should clarify – and operationalise – the 'Unexpected Major Developments' provision of the Articles of Agreement such that special allocations are made automatically upon the breach of certain macro-critical

thresholds (such as force-majeure shocks, global technical recessions, and a reversal of global capital flows). The climate crisis warrants regular allocations of SDRs to bolster international reserves and support climate action. A renowned expert has made the case for reforming the SDR system and initiating regular annual SDR allocations, estimating that these would be around $170 billion a year based on the expected global need for international liquidity (Truman, 2022).

- **Second, there is a need to reform the rechannelling infrastructure to make it less rigid and costly.** As African Finance Ministers have noted, this should include:

  "[M]odernizing the 'Reserve Asset Characteristic' criteria, which unnecessarily holds back SDR utilization; reform[ing] the SDR interest rate system, by replacing the existing dual interest rate system (which penalizes SDR utilization) with a single interest rate to be paid by members on unutilized SDRs; establish[ing] an SDR intermediation function, which would allow the IMF to operate more naturally and efficiently as the 'SDR Bank' that it is; and promot[ing] transparency in the SDR market, which would help the public, policymakers, and other stakeholders hold countries to their rechannelling pledges and help potential beneficiaries access available funds." (ECA, 2021)

9.3. Carbon markets

Carbon markets have the potential to mobilise financial resources for sustainable, low-carbon, resilient growth. Integrity is essential: financed activities must drive genuine emissions savings aligned with the Paris temperature goals, requiring rising prices that reflect the social cost of carbon, and, in the case of voluntary action, purchasing and retiring carbon credits must not displace efforts to meet targets within organisations' own value chains.

Some carbon trading takes place under mandatory, or **compliance, markets**, with 32 emissions trading systems (ETSs) established by governments operating worldwide and an additional few scheduled for implementation. Total revenue through ETSs reached $56 billion in 2021 (World Bank, 2022b).[14] Revenues can support broader fiscal interventions or reforms that boost sustainable investment, domestically and internationally. Despite many ETS prices hitting record highs in 2021, most are still not in line with levels recommended by the High-Level Commission on Carbon Pricing, and ambitious climate targets and tighter policy rules are needed to drive investment. The sectoral scope of such schemes is also often limited.

International institutions may use compliance markets in specific sectors. The International Maritime Organization has considered combining a cap-and-trade system with placing a limit on greenhouse gases from ships' fuel, which could generate up to $40–60 billion per year in revenue (Dominioni et al., 2022). The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), established by the International Civil Aviation Organization (ICAO), applies to international routes between participating countries, and will make it mandatory for airlines to pay compensation for emissions above a historical baseline from 2027. However, the scheme's design has been criticised as being insufficient to achieve the Paris goals (Schneider and Wissner, 2022). Issues include the focus on CO_2 to the exclusion of other greenhouse gases, a high baseline being set, and a process and criteria that fail to ensure use of high-quality carbon credits.

International carbon market rules under Article 6 of the Paris Agreement also allow countries to attract finance for mitigation projects from other governments seeking to meet their NDCs, as

[14] Over 60% of ETS revenue (41% of all carbon pricing revenues) in 2021 came from the EU ETS; by contrast, China's national ETS, which is still being phased in, freely allocated all allowances and generated no revenue.

well as from non-state actors pursuing voluntary climate objectives.[15] However, carbon market flows are not a replacement for strong international climate finance commitments, although they could play an important supporting role. While still undergoing design, the 'Article 6.4 mechanism' will allow credit issuance by projects that meet a prescribed set of criteria and procedures in line with the Article 6 rulebook and approved by a Supervisory Body designated by the UNFCCC Conference of the Parties.

The segment referred to as the voluntary carbon market (VCM) is driven by non-state actors, who buy carbon credits to compensate for residual emissions and meet net zero and other voluntary climate commitments. Several independent organisations (such as Verra, Gold Standard, Climate Action Reserve and Plan Vivo) have developed their own standards for credit issuance and allow project developers to monetise activities that reduce or remove emissions. The Integrity Council for the Voluntary Carbon Market (IC-VCM) has also consulted on a set of 'core carbon principles' designed to ensure integrity in the supply of carbon credits.

The voluntary market is currently much smaller than total compliance market coverage but it could grow substantially. Trading volumes have been growing rapidly. In 2021, the market size by volume increased by 143% year-on-year to 493 $MtCO_2e$. Concurrently, the price of credits rose from \$2.52/tCO_2e to \$4.00/tCO_2e, bringing the total market value in 2021 to nearly \$2 billion (Ecosystem Marketplace, 2022). Notwithstanding inherent uncertainty over demand, supply and prices, the market could grow to five to 20 times its current size by 2030 – see Table 9.1. Up to 90% of credit supply is likely to come from EMDCs (Taskforce on Scaling Voluntary Carbon Markets, 2021).

Table 9.1. Potential scale of financial flows through the voluntary carbon market in 2030

Component	Lower	Upper
Demand ($GtCO_2e$)	0.5 $GtCO_2e$	< 1.5 $GtCO_2e$
Price	\$20/$GtCO_2e$	< \$30/$GtCO_2e$
Market value	**\$10 billion**	**\$40 billion**

Note: $GtCO_2e$ = gigatonne of carbon dioxide equivalent. Source: Trove Research (2021)

There is broad consensus that activities within a VCM operating with a high level of integrity should be additional (i.e. they would not have been implemented without the incentive created by carbon credit revenues), should be relatively permanent (i.e. they should lead to long-term changes in atmospheric carbon), and should avoid leakage (i.e. emissions should not rise outside the activity boundary). All else being equal, projects that create further social and environmental benefits will be of higher quality than those that do not provide these benefits. Although many existing credits do not meet core standards for integrity, countries undertaking country-led transition planning could help, by providing confidence on baseline emissions, targeted emissions reductions, and identification of projects that specifically help deliver those reductions.

[15] The terms 'voluntary' and 'compliance' refer chiefly to the purpose or use of carbon assets (credits or cap-and-trade allowances) that actors are seeking to fulfil. Under the Paris Agreement how these differ in international markets has become less clear. Though the Kyoto-era Clean Development Mechanism and the Article 6 mechanisms are often referred to as compliance markets (since countries are obliged by international treaties to pursue climate action), under the Paris Agreement countries engage in carbon trading on a voluntary basis. In addition, credits generated by voluntary activities can be used in some compliance schemes, although several jurisdictions have restricted the use of credits in their ETS.

In principle, international carbon markets could provide urgent finance for several key sectors:

- **Nature-based solutions,** including projects involving forests, peatlands and coastal wetlands. Cost-effective measures are currently distributed highly unevenly, with the top 15 countries accounting for 60% of the global potential (Roe et al., 2021).
  - **Forestry** accounted for just under half of all credits in the market in 2021 (Ecosystem Marketplace, 2022). Afforestation and reforestation are important as well as avoided deforestation, although historically credits have been of questionable integrity (e.g. West et al., 2020). 'Jurisdictional' approaches to REDD+[16] crediting, carried out at national or sub-national level, can monetise forestry programmes and provide greater integrity by triggering supportive changes in government policy and fostering multi-actor partnerships (involving Indigenous Peoples and local communities) (UNDP, 2021).
  - **Agricultural practices,** such as a shift to regenerative practices that save carbon and benefit nature and farmers' livelihoods, are effective but are expensive investments and must overcome upfront costs, opportunity costs, and administrative and information barriers (Köberle et al., 2021).
- **Energy systems,** where carbon credit revenues could potentially facilitate early retirement of coal plants.[17] Similarly to what happens in the forestry sector, an approach administered by public authorities at jurisdictional level could provide the necessary transparency, scale, coordination and risk management. Mechanisms to develop such revenue streams could be embedded in country platforms given these bring clarity to emissions baselines, targeted reductions and the specific projects to deliver those reductions. Further work is needed to establish clear contracts and robust criteria that avoid moral hazard and resolve issues for the use of carbon credits. This work would include:
  - Creating credible baselines that avoid perverse incentives for countries setting their NDCs
  - Ensuring coal plants remain offline and that countries do not build new coal capacity, including by taking a programmatic approach
  - Taking responsibility for mitigating social, environmental and economic risks
  - Delivering finance ex-ante while emissions reductions are determined ex-post.
- **Engineered removals** such as Direct Air Carbon Capture and Storage (DACCS) could remove and store 30GtCO_2e cumulatively by 2050, supporting nature-based solutions, which cannot achieve global removal targets alone (Energy Transitions Commission, 2022). However, costs will remain extremely high for some time. Strong policy signals and support for investment are the most appropriate tools to bring technology to commercial scalability. In the longer term, engineered removal credits could be bought by companies to achieve their net zero goals.

Key conditions for integrity and quality must be met across all sectors. Despite a modest premium for credits that demonstrate co-benefits (Ecosystem Marketplace, 2022), prices are

[16] REDD+ refers to reducing emissions from deforestation and forest degradation, conservation of existing forest carbon stocks, sustainable forest management and enhancement of forest carbon stocks.

[17] Renewable energy projects are no longer considered 'additional' investments suitable for carbon credit issuance in most countries – except in least-developed countries with significant risk premia – because they are now usually commercially viable without carbon credit revenues.

currently too low to support much of the global investible potential, and further interventions are needed.

First, a strong governance system is essential for both the supply and demand of credits:

- IC-VCM is designing 'Core Carbon Principles' as a minimum benchmark for quality, which all VCM standards should strive to meet in their procedures and requirements. At present environmental and social safeguards and measures to promote sustainable development benefits vary significantly across existing standards (Wissner and Schneider, 2022).
- Non-state actors' use of carbon finance in their overall climate strategies require scrutiny. Carbon credits must not displace companies' investment in reducing their own emissions. Buyers of credits need to engage and support the Science-Based Targets Initiative and Voluntary Carbon Markets Integrity Initiative (VCMI) to shape common understanding and standards. G20 governments should also seek consensus, however, on how they want these markets to develop, factoring in cost and efficiency as well as delivery against their respective net zero commitments. In particular, regulators should undertake transition planning to set clear targets and emissions reductions plans, and to disclose their use of carbon credits to justify making marketing claims about their emissions.
- Transparency is key: information infrastructure can help to increase transparency – for instance, ratings for credit quality – and should prioritise open-source data and methodologies as much as possible.
- A broad multi-stakeholder network led by existing governance initiatives should continue to promote dynamic improvements through impact and performance assessment, involving affected frontline and Indigenous communities in rulemaking, and aligning with the goals – if not the complete rulebook – of the Paris Agreement (Florini and LaForge, 2022).

Second, host countries need support to bring forward investment opportunities through carbon market mechanisms and to embed finance from carbon markets into their wider strategies:

- Article 6 of the Paris Agreement allows EMDE governments to regulate carbon finance to align with their development priorities. They may authorise certain credits that could attract a higher price but require a 'corresponding adjustment', meaning the host country will no longer count emissions savings towards its NDC (but will still receive co-benefits from credited activites). Policymakers need to determine their preferred approach; some governments have halted exports of credits while they develop carbon market frameworks and navigate uncertainty over how best to treat national carbon assets.
- Project-level activities struggle to overcome investment barriers, such as ambiguous or inconsistent policies and laws or fragmented supply chains. Yet despite buyers forming clubs like the LEAF coalition to demand jurisdictional REDD+ credits issued through tailored standards, few deals have moved forward. Barriers include disagreements over how sovereignty and benefits should be distributed between national governments, subnational governments, and other stakeholders.
- Building registries to track credits overlaps with NDC implementation, accounting and reporting. MDBs, donors and other DFIs should seek greater synergy between capacity-building for carbon markets and wider development and climate finance (COP26

Catalyst, 2022). They should design or expand relevant mechanisms, such as the World Bank's Transformative Carbon Asset Facility.

Box 9.1. Development of a regional registry for issuance of carbon credits through the Congo Basin Climate Commission

Harmonising and integrating regional markets can scale up the potential success of carbon markets for African countries. To enable African states to translate political will into deployment of carbon markets that expand revenue streams and support sustainable development plans and international climate commitments, the UN Economic Commission for Africa (ECA) is assisting countries to build high-integrity carbon markets. There is an intention to address gaps on the supply side and integrate market supply with demand. Over recent years, credits from nature-based solutions (mainly forest conservation, avoided deforestation and REDD+) have taken the lion's share of demand, followed by credits from chemicals and industries including oil and gas, and power generation including renewable energy. African countries have vast potential and comparative advantages in the supply of nature-based solutions and renewable energy credits at relatively low marginal costs, which assistance can help bring to scale.

Reducing market fragmentation. The ECA has assisted the 16 member countries of the Congo Basin Climate Commission to establish a harmonised greenhouse gas offsetting protocol, which will contribute to reducing market fragmentation in the sub-region formed by those countries. Built from the best internationally available standards, the harmonised greenhouse gas protocol will guide programme and project development and monitoring, reporting and verification to generate high-quality emissions reduction credits in energy (including renewable energy and energy efficiency), soil enrichment, forest conservation and avoided deforestation, and agriculture (including rice cultivation). The protocol also provides solutions for key challenges affecting market integrity such as information disclosure, transparency, land ownership, creditworthiness and certification.

Linking African and other regional and global markets. By creating a regional registry the Commission will facilitate an exchange between countries with limited capacity and investors seeking to purchase high quality carbon credits. The registry provides a 'one stop shop' entry point for discussion of potential investments, and is also the overall arbiter of the quality of credits, thus avoiding a 'race to the bottom'.

Attracting investment into priority sectors. 'Project templates' have been developed based on data available in the countries and previously identified priorities. Currently there are four templates, for forestry conservation; agroforestry-related projects; sustainable rice production using enhanced irrigation techniques to reduce methane emissions; and renewable energy projects to benefit local communities.

Revenue generation. A preliminary assessment of the voluntary carbon market based on satellite data indicated that 30% of the world's carbon sequestration needs by 2050 could be met by nature-based removal in African countries (Dalberg et al., 2021). The estimates further show that carbon credits can generate in Africa about $1 billion when priced at $10/t$CO_2$e and about $82 billion at $120/t$CO_2$e. These resources can be reinvested in several development priorities. The same assessment shows that for some countries of the Congo Basin, the revenue generation can represent a significant proportion of GDP.

Table 9.2. Potential revenue from carbon credit sales for countries in the Congo Basin

Country	Resources generated as % of GDP	
	at $50/tCO$_2$e	at $120/tCO$_2$e
Gabon	3.09	12.99
Republic of Congo	6.37	36.7
Democratic Republic of Congo	4.23	24.29

9.4 Leveraging private philanthropy

There is scope to tap into the growing flows of private philanthropy going to developing countries. In 2018, cross-border private philanthropy from all sources was about $70 billion, $48 billion of which came from the United States. Large foundations have a history of supporting health and education public goods, and this has now extended to climate finance. The establishment of the $100 million Bezos Fund and the commitment by the Rockefeller Foundation to mobilise $750 million for low-carbon energy in developing countries are two noteworthy examples. The foundations have also worked together on climate and development in a much more concerted manner. They are well positioned to be a powerful voice for change and collective action and to leverage their finance to expand the volume of climate finance and meet shortfalls in priority needs such as for just transitions and energy access in poor countries.

An important partnership launched at COP26 is the Global Energy Alliance for People and Planet (GEAPP), which brings together philanthropic institutions, development finance institutions and country partners to accelerate investment in green energy transitions and renewable power solutions in developing and emerging economies worldwide. Over the next decade, the Alliance aims to unlock $100 billion in public and private capital to enhance energy access (reaching one billion people with reliable, renewable energy); tackle climate change (avoiding and averting four billion tons of carbon emissions); and create jobs (creating, enabling or improving 150 million jobs). The Alliance aims to provide more than $10 billion to focus on fossil fuel transitioning, grid-based renewables, and distributed renewables.

9.5. Innovative financing mechanisms

There are innovative financing mechanisms modelled on the International Financing Facility for Education (IFFEd) in partnership with four MDBs and development partners that could mobilise significant sums of additional finance for climate. This model uses the strength of the MDBs as delivery mechanisms with solid financial standing backed by guarantees from donors. The IFF provides a highly efficient way to use sovereign commitments to support MDBs with possibly greater leverage than existing options (e.g. MDBs' regular capital increases or single loan guarantees). Every 15 cents of cash as paid-in capital to an IFF financing vehicle, alongside a sovereign guarantee, could produce $4 dollars in loans for financing development in the form of non-concessional loans provided by MDBs to middle-income countries – an overall leverage rate of 27 times.

Because it requires only a coalition of 'willing' donors, an IFF-like mechanism can be an efficient and cost-effective route to scale up MDB climate finance in the short-term. The IFF proposal has benefitted from several years of investment in its development around legal, financial, and accounting frameworks to support MDB capital adequacy. With commitments from donors and MDBs it could be launched and scaled up very quickly as an urgent response to the pronounced and worsening crises that developing countries now face, including on climate. The

use of guarantees can also be used to alleviate constraints to lending to major borrowers due to portfolio concentration or single-borrower limits.

9.6. South–South cooperation

Data on climate finance flows between developing countries is fragmentary and incomplete. Finance commitments from International Development Finance Club members based in non-OECD countries to projects in other non-OECD countries amounted to $1.7 billion and $2.2 billion in 2019 and 2020 respectively, a decline from the $4.1 billion committed in 2018 (UNFCCC Biennial Assessment, 2022). South–South cooperation on infrastructure has been growing rapidly, including through the China-led Belt and Road Initiative (BRI). Although most of the financing has been for traditional infrastructure, there has been a push for the 'greening' of the BRI (Ma Jun and Simon Zadek, 2019). Multilateral development banks based in the South such as the Asian Infrastructure Investment, New Development and the Latin American Development Bank have a principal focus on sustainable infrastructure and are becoming important sources of finance for climate investments in developing countries. As major emerging markets move to the vanguard of the low-carbon transition and climate resilience, there is great scope for expanding and transforming South–South cooperation on climate action, and with it, for scaling up climate finance flows between countries in the South.

10. Aligning financial flows: delivering on Article 2.1c

The Paris Agreement's Article 2.1c is the orienting goal for all the initiatives we have described in previous sections: "making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development". Applying to all forms of finance and all instruments, the clause has not been operationalised to the same degree as others in the treaty: the UNFCCC process does not provide a space to fully articulate definitions or develop requirements for reporting on the consistency of financial flows (as with Article 9 on climate finance from developed to developing countries). Despite strong momentum, finance flows remain heavily misaligned.[18]

Discussions under the UNFCCC agenda have increasingly been complemented by wider institutional structures and efforts towards a sustainable finance architecture, with many interlocking parts across a complex ecosystem including the private sector and civil society. In April 2022 the UNFCCC counted 115 "sustainability or climate-related financial initiatives that claim to be either directly or indirectly associated with contributing to the goals of the Paris Agreement" (UNFCCC Secretariat, 2022). Most of these initiatives and associated net zero commitments are voluntary. As noted by the report prepared by the UNSG's High-Level Expert Group (HLEG), there is risk that such pledges "are not aligned with the science, do not contain enough detail to be credible, and use the terms 'net zero' or 'net zero aligned' inconsistently", and regulation is needed to "transform the groundswell of voluntary commitments into ground rules for the economy as a whole" and "limit potential for greenwashing" (HLEG, 2022). In addition, further consideration of climate-resilient development pathways is needed to complement those focused on mitigation, since currently there is limited evidence of financial actors aligning investment mandates with resilience goals, outside of climate risk disclosure (UNFCCC Standing Committee on Finance, 2022b).

This section presents options for improving methodologies and standards to bring clarity and transparency around delivering Article 2.1c, and to improve interoperability across different approaches and with other tools (such as transition finance and taxonomies). It explores the role of relevant actors such as central banks and supervisors and private and public asset owners, in advanced economies as well as EMDCs.

10.1. The need for common language and sustainability standards

Public policy and public-interest institutions have mobilised to seek a common language and standards for sustainability and to bring coherence to the pursuit of system-wide alignment. Progress on these fronts must be prioritised to prevent greenwashing and ensure that ambition is matched by action.

The five principles proposed by the UN HLEG offer a useful roadmap to ensuring consistency and credibility in setting standards and net zero commitments. Efforts towards harmonising standards[19] must balance the imperative to avoid fragmentation and the need for proportional

[18] For instance, while climate finance flows were estimated at $803 billion per year on average over 2019/20, fossil fuel investments were estimated at $892 billion and fossil fuel subsidies at $450 billion over the same period (UNFCCC Standing Committee on Finance, 2022a).

[19] Efforts underway include the Financial Stability Board's roadmap for addressing climate-related financial risks, the G20 Sustainable Finance Roadmap on "understanding the technical aspects and interlinkages of existing and emerging alignment approaches" (G20 SFWG, 2022), the work of international organisations on minimum interoperability principles for sustainability classifications, such as taxonomies, and the International Sustainability Standards Board's preparations for a comprehensive global baseline of sustainability-related disclosure standards to provide investors with information about companies' sustainability-related risks and opportunities.

and sequenced implementation, to reflect the variety of economic structures and sectoral profiles and avoid undue capital flight from companies and countries without the data and capacity to comply in the near-term. A new Task Force on Net Zero Regulation to convene regulators, as proposed by the UN HLEG, would be a useful addition to the landscape, helping convene regulators across regulatory jurisdictions and helping avoid a regulatory race to the bottom while respecting cross-country regulatory differences. Furthermore, new or synthesised frameworks and methodologies will need to be complemented with credible independent verification of whether firms, investments and countries meet core standards.

10.2. Towards net zero central banking

Central banks and financial regulators are also moving to the forefront with oversight of the financial sector and use of their tools to manage incentives and disincentives for sustainable investment. The Central Banks and Supervisors Network for Greening the Financial System (NGFS), now with over 120 members representing the majority of global emissions, has provided helpful analytical and technical support to underpin central banks' decision-making. **The agenda now needs to shift faster from analysis and technical work to decision-making consistent with net zero central banking across monetary policy, supervision and portfolio management functions.**

Action has been hampered to date by persistent perceptions of conflict between the need for central banks to act on climate and core mandates of price stability. This has also often led to central banks viewing climate through a risk lens, focusing on safeguarding the financial system from climate-related transition and physical risks rather than the wider objective of mobilising the financial institutions that they supervise to actively support and finance the net zero transition. To overcome this, governments should update central banks' mandates and remits to bring them in line with their own net zero commitments. In the UK, the Treasury's update of the 2021 remit letter to enable the Bank of England to explore the net zero alignment implications for its operations is instructive.

In monetary policy, directed action is needed to address persistent carbon biases in quantitative easing portfolios. This should involve a rethink of whether 'market neutrality' principles guiding such purchases are fit for purpose in the context of the climate crisis, as well as further work to incorporate climate variables in macro modelling to reflect impacts on inflation.

In terms of supervision, while it is encouraging that climate stress tests for the banking sector are now becoming mainstream across advanced economies, these have largely remained information exercises. **Central banks need to take further steps so they are not just measuring risks through stress tests but are also managing them**, in a way that delivers good outcomes from a macroprudential perspective, given it is not clear that climate risks can be managed by each firm alone.[20] These steps could include adjusting capital requirements to reflect climate-related risks through a green supporting factor that alleviates prudential requirements for green exposures, or a brown penalising factor applied to prudential requirements for exposures to climate-related risky assets (Dafermos and Nikolaidi, 2022). Such incentives could generate a virtuous cycle whereby the relative cost of capital for climate-harming activities rises while the profitability of sustainable investments increases, making them accessible to a larger pool of investors.

[20] For example, the European Central Bank's first major stress test showed that banks face a potential €70 billion hit from climate-related risks but the ECB took no action to address this.

There is significant potential to green portfolio management but in the present framework opportunities to do so are limited.[21] To go further, a big scale-up in the supply of liquid green assets is needed, given the size and liquidity focus of central banks' portfolio management (see also Section 7 above).

10.3. Addressing systemic bottlenecks

Despite progress being made to align the financial sector with the net zero transition, achieved through harmonisation of standards and central bank action, the system remains hampered by systemic bottlenecks that create disincentives for a big step up in sustainable finance. Primary among them is the persistence of market failures and climate-related externalities, reflecting slow progress on government policies such as carbon pricing. Additionally, information asymmetries at the geographical and sector/technology level persist, leading to unjustifiably high risk premia for sustainable investments. These can be alleviated through efforts to enhance the in-house capacity of international investors to evaluate such risk exposures.

Risk biases are further exacerbated by unintended consequences from financial sector regulation introduced in response to the 2009–10 financial crisis. Compliance with the Basel III framework and in the EU the Solvency II directive mean that long-term lending for infrastructure projects in developing countries must be backed by large charges against the capital of a financial institution. This has acted as a negative shock for project financing by banks and insurance companies (Beck and Rojas-Suarez, 2019). Further calibrations are needed to these frameworks to remove disincentives.

10.4. Asset management alignment strategies

In aligning portfolios with net zero, asset owners should carefully balance their options across strategies ranging from divestments to active ownership and shareholder engagement, and direct investments in sustainable assets. Actions driven by the need to manage climate-related risks (such as divesting from fossil fuel assets) may not be as appropriate for investors driven by the motivation to support the transition, as these assets may end up in the hands of investors that are under less pressure to invest sustainably and are less long-term minded. The evolving agenda on transition plans will be critical in enabling investors to focus on responsible retirement rather than divestment, including encompassing just transition considerations.

10.5. Strengthening financial architecture in EMDCs

The final element of the alignment agenda involves addressing financial flows within EMDCs themselves. One priority is to deepen domestic financial markets and banking systems to drive mobilisation of domestic resources. The MDBs will be particularly critical in this agenda, through providing technical assistance and advising on blended finance aspects to share risk and build capacity, as outlined in Section 8.

Another key component and trigger for aligning finance with climate action in EMDCs is to ensure that all public sector policies, regulatory frameworks and plans are consistent with climate objectives as well as other sustainable development objectives. This starts with diagnostic tools (risk modelling and management), and also includes national climate finance strategies, national taxonomies, green and labelled bond standards, and reporting guidelines for issuers and investors. These policy and regulatory efforts could benefit from technical assistance and knowledge-sharing provided by multilateral institutions, through

[21] Central bank reserves total $16.2 trillion, with the vast majority of FX reserves allocated to government bonds (OMFIF, 2022). The composition of pension and own portfolios is more diverse (Hyrske and Kyriakopoulou, 2022).

international networks, and offered by advanced economies in climate and development partnerships.

The financial sector cannot achieve alignment alone – a supporting policy framework is also needed. The financial sector can be a driver for change in the real economy, but complex methodologies will have a limited effect if not accompanied by substantive policy incentives to change business models and practices. Clarity on climate alignment for individual institutions will also remain elusive so long as discussions under the UNFCCC allow ambiguity around Article 2.1c and how to track progress.

11. The way forward

Before the right decisions can be made to enable action and finance on the scale required, all those involved must be clear on the urgency. They must also understand the significant opportunities for a new and attractive form of growth and development that could be delivered by the investments and innovations described in this report. This is as much an agenda for climate action as it for sustainable development; and for raising ambition as it is for strengthening implementation. Strong action and commitment are necessary from each and every country. And there must be positive and purposive collaboration through international interactions and institutions. These include the G20/G7 as major emitters and shareholders in the international finance institutions – particularly the multilateral development banks – and of course the UN, particularly through the UNFCCC but also its other institutions.

In summary:

- **Countries should set strong targets for emissions reductions, aligned to the Paris Agreement and UNFCCC, and adopt credible, efficient and equitable policies for achieving them.** This clear sense of purpose will enable the investments, particularly from the private sector but also, and importantly, the public sector, necessary to achieve the targets and to generate the new story of growth and development for the 21st century.
- **Countries should work together and learn from one another:** by sharing experiences of policies and associated institutions, for example (such as on carbon markets and pricing). Such collaboration can also foster coherence on standards and procurement to help generate larger and vibrant markets that can embody economies of scale in discovery and production and drive down costs. And such coherence of targets and actions can help generate confidence, crucial for investment, in markets across the world. Collaboration through the World Trade Organization will also be of real importance.
- **The private sector, its investment, innovation and finance, will be at the core of the necessary action.** The private sector should not simply wait for countries and international organisations to create the 'necessary conditions for investment'. Those conditions are crucial – and the private sector should be very active in helping create them. Governments should work with the private sector, through country, sector, regional and international platforms for investment and innovation, including through international collaborations and institutions.
- **The MDBs have a central role to play,** given the importance of the conditions for investment and innovation, the scale of the necessary investment, the complementarity of public and private sectors, the importance of risk management reduction and sharing, and the cost of capital. A quick breakthrough on the scale and purpose of the MDBs is now necessary and must be driven by the MDBs' shareholders and leaders working together around a shared purpose in relation to a new approach to sustainable, resilient and inclusive development.
- **Substantial concessional, or non-debt service, finance will be necessary for key areas of action,** including elements of adaptation, resilience, loss and damage, just transition and natural capital restoration/conservation. Important contributors can be official development assistance, special drawing rights, philanthropy, voluntary carbon markets and more. Rich countries must live up to their commitments by delivering on the $100 billion and raising ambition further. It will also be important to be creative and innovative. Concessional and low-cost finance will be essential.

This is a set of tasks with a clear and crucial purpose: to reduce and manage the immense risks of climate change and deliver a new form of growth and development that is fit for the 21st century and can drive forward on all the dimensions of the Sustainable Development Goals. It is both feasible and attractive. But it requires a clear and analytically founded sense of purpose and action, and immediate delivery on that action, at scale, particularly on finance.

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Appendix 1. The landscape of climate finance

1. The current landscape of climate finance

Table A1.1 presents an overview of the latest available figures on climate finance flows from the UNFCCC and the Climate Policy Initiative (CPI). The UNFCCC Standing Committee on Finance (2020; 2022a) estimates that global climate finance flows reached $775 billion on average in 2017/18, and $803 billion in 2019/20. According to CPI (2020; 2022), climate finance flows amounted to $574 billion in 2017/18, and $653 billion in 2019/20. Differences in accounting definitions and methodologies explain in part the variation in estimates. Global climate finance almost doubled according to CPI (2022), with a cumulative $4.8 trillion in climate finance committed between 2011 and 2020. However, the current levels still fall short of the amount of finance necessary to avoid the worst impacts of climate change and to build adaptation and resilience.

Table A1.1. Latest assessments of global climate finance flows by UNFCCC and CPI

Sources	2017/2018 (US$ bn)	2019/2020 (US$ bn)
UNFCCC (2020)	775	n/a
CPI (2020)	574	n/a
UNFCCC (2022a)[22]	n/a	803
CPI (2022)	n/a	653

Public finance contributed a slightly larger share than private finance in 2019/20 ($334 billion or 51%), with development finance institutions (DFIs) providing the majority of public finance (71%) (Table A1.2). Private sector investment is increasing but not at the scale and speed necessary to meet climate objectives. In 2019/20, the growth rate of private climate finance was much slower (4.8%) than that of the public sector (9.6%). Combined, corporations and commercial financial institutions provided almost 80% of private finance. Household and individual spending is the third largest share of annual private climate finance, driven largely by spending on electric vehicles.

Most climate finance was raised as debt (63% or $409 billion), of which only 16% ($61 billion) was low-cost or concessional. Equity investments and grants represented 32% and 5% of total finance flows respectively.

Ninety per cent ($586 billion) of climate finance focused on mitigation activities, while only 8% supported adaptation. Cross-cutting activities represented only 3% of total finance flows. However, the UNFCCC Standing Committee on Finance (2022a) estimates that adaptation finance increased by 65% from 2017/18, reaching $49 billion in 2019/20, mainly driven by financing from bilateral and multilateral development finance institutions.

More than half of total climate finance targeted energy systems, with renewable energy investments remaining close to the record high in 2017 despite the COVID-19 pandemic. Finance for transport represented the second largest share (26%), followed by finance for buildings and infrastructure (8%). Finance for key sectors, particularly for adaptation, is still too low; for example, only 2% ($16 trillion) of financing targeted land use in 2019/20.

Seventy-six per cent (or $494 billion) of climate finance was raised domestically, primarily concentrated in East Asia and the Pacific (dominated by China), Western Europe and North

[22] The COVID-19 pandemic may have affected the trends in climate finance flows highlighted in the fifth biennial assessment, which covers the period 2019-2020.

America. The regions of North America, Other Oceania and Western Europe were mainly funded by private finance. Public finance accounted for the largest source of funding in Sub-Saharan Africa (86%) and South Asia (63%).

Table A1.2. Disaggregated analysis of global climate flows in CPI (2022) for 2019/2020 (annual average)

		US$ bn	%
Sources split			
Public		334	51
of which	*Development finance institutions*	*237*	*36*
	Multilateral climate funds	*4*	*1*
	State-owned enterprises	*13*	*2*
	State-owned finance institutions	*45*	*7*
	Governments	*32*	*5*
	Other	*3*	*0*
Private		318	49
of which	*Unknown*	*7*	*1*
	Commercial finance institutions	*122*	*19*
	Funds	*5*	*1*
	Households and individuals	*55*	*8*
	Institutional investors	*4*	*1*
	Corporations	*125*	*19*
Instrument split			
Grants		30	5
Debt		409	63
of which	*Low-cost project debt*	*61*	*9*
	Project-level market rate debt	*236*	*36*
	debt	*112*	*17*
Equity		207	32
of which	*Project-level equity*	*51*	*8*
	Equity	*156*	*24*
Unknown		8	1
Thematic split			
Mitigation		586	90
Adaptation		49	8
Dual uses		17	3
Sectoral split			
Energy systems		336	51
Transport		169	26
Land use		16	2
Water and waste		24	4
Industry		7	1
Buildings and infrastructure		52	8
Other and cross-sectoral		48	7
Destination split			
Domestic		494	76
International		158	24

Source: CPI (2022)

Table A1.3. Destination region of climate finance by public/private and domestic/ international in 2019/2020 (biennial average)

	US$ bn		%		US$ bn		%	
	Public	Private	Public	Private	Dom.	Intern.	Dom.	Intern.
Central Asia & Eastern Europe	18	12	60	40	16	15	53	50
East Asia & Pacific	176	105	62	37	259	23	92	8
Latin America & the Caribbean	18	17	51	49	16	19	46	54
Middle East and North Africa	9	7	56	44	7	9	44	56
Other Oceania	1	8	11	89	6	3	67	33
South Asia	20	11	63	34	12	20	38	63
Sub-Saharan Africa	19	3	86	14	3	19	14	86
US & Canada	4	77	5	94	75	7	91	9
Western Europe	55	74	42	57	99	31	76	24
Transregional	12	3	80	20	2	13	13	87

Source: CPI (2022)

2. Climate finance provided and mobilised by developed countries for climate action in developing countries

2.1. Where are we on the path to the $100 billion?

Developed countries provided and mobilised $83.3 billion for climate action in developing countries in 2020, $16.7 billion short of the $100 billion per year by 2020 goal (OECD, 2022b). As reported in OECD (2022b) and the biennial assessments, public climate finance has accounted for the largest share of total climate finance provided by developed countries between 2013 and 2020. It represented between 73% and 84% of the total from all channels over the period 2013-20 in the OECD assessment, and between 70 and 79% between 2013 and 2018 in the biennial assessments (BAs). Public climate finance flows to developing countries increased by between 6% and 17%, depending on the source, in 2019/20 compared with 2018/17 (UNFCCC Standing Committee on Finance, 2022a).

The BAs and OECD analysis show that MDBs have accounted for the majority of public climate finance provided via multilateral channel, reaching $33.2 billion in 2020 (OECD, 2022b). It is important to note that this only reflects a share of total MDB finance, as the BAs and OECD assessments only take into account the share of MDB finance that is attributable to developed countries. In their joint report, MDBs report that $51 billion was committed for climate action in low- and middle-income economies in 2021, including 65% ($33 billion) for mitigation activities and 35% for adaptation (AfDB et al., 2022) (Table A1.6). Overall, MDB financing in 2021 exceeded their 2025 climate finance goals, which targeted a collective total of $50 billion per year by 2025 for low- and middle-income economies, and at least $65 billion of global climate finance (Table A1.7).

The mobilisation of private finance by developed countries has been relatively modest and has mainly taken place in middle-income countries with relatively low risk profiles. After increasing between 2016 and 2017, it stagnated until 2019 and dropped to $13.1 billion in 2020. However, private climate finance has grown by 30% since 2016 according to the OECD (2022b), and by 63% between 2016 and 2018 according to the BAs. Adaptation has represented a small share (5%) of total private climate finance mobilised between 2016 and 2020. Table A1.4 presents a summary of the relevant assessments.

The 2021-25 scenarios presented in OECD (2021) indicate that the $100 billion goal could be achieved by 2023, with a range of $101 billion to $106 billion. The pledges and commitments on which the OECD analysis was based do not allow for a breakdown of the forward-looking scenarios by climate theme, sector, financial instruments or geographical location. However, with regard to the climate theme, a number of bilateral donors have indicated an intention to ramp up finance for adaptation. Further, the figures are based on a substantial ramp-up of

MDB financing. Given that those rely on raising additional funds from the capital market, one could expect an increasingly important role for debt finance in future international public climate finance.[23]

Table A1.4. Assessments on finance provided and mobilised by developed countries for climate action in developing countries ($ billion)

	2013	2014	2015	2016	2017	2018	2019	2020
Public finance from developed countries provided via bilateral, regional and other channels								
BA, 2022[24]	23.1	23.9	29.9	33.6	28.1	31.8	31.9	31.4
BRs, 2, 3 and 4[25]	23.1	23.9	29.9	33.6	33.8	33.8	n/a	
OECD, 2022b	22.5	23.1	25.9	28	27	32	28.7	31.4
Officially supported export credits from developed countries								
BA, 2022	Not reported separately							
OECD, 2022b	1.6	1.6	2.5	1.5	3	2.7	2.6	1.9
Public climate finance attributed to developed countries provided via multilateral channels								
BA, 2016, 2018, 2022[26]								
Multilateral climate funds (including UNFCCC funds)	1.9	2.5	1.4	2.4	2.2	3.1	2.9	3.5
MDB climate finance	14.9	16.6	17.4	19.7	24.1	25.8	30.5	33.2
BRs, 2, 3 and 4[27]	14.3	16.4	12.8	13.1	17	19.7	n/a	
OECD, 2022b	15.5	20.4	16.2	18.9	27.1	30.5	34.7	36.9
Total public climate finance provided by developed countries								
BA (Aggregated based on data reported in the BA as above)	39.9	43	48.7	55.7	54.4	60.7	65.3	68.1
BRs, 2, 3 and 4[28]	40.5	43.2	49.3	49.3	52.2	52.2	n/a	
OECD, 2022b	39.5	45.1	44.6	48.5	57.1	64.8	66	70.2

[23] We are grateful to Raphaël Jachnik for highlighting these points.

[24] Sources: Table 2.7, p.89 of 2022 BA Technical report for the whole period 2013-2020.

[25] Sources: Fig. 21, p.66 of compilation and synthesis report of BR2s for 2013 and 2014; Fig. 29, p.57 of compilation and synthesis report of BR3s for 2015 and 2016; para. 221, p.71 of compilation and synthesis report of BR4s for 2017 and 2018, of Parties included in Annex I to the Convention. October 2016, November 2018 and May 2022.

[26] Source: Fig. 1, p. 5 of 2016 BA's Summary and Recommendations for 2013-2014; Fig. 1, p. 6 in 2018 BA's Summary and Recommendations for 2015-2016; Fig. 2, p. 8 in 2020 BA's Summary for 2017-2018.

[27] Source: Table 11, p.65 of compilation and synthesis report of BR2s for 2013 and 2014; Fig. 28 and Table 6, p.56 of compilation and synthesis report of BR3s for 2015 and 2016; Table 4, p.71 of compilation and synthesis report of BR4s for 2017 and 2018, of Parties included in Annex I to the Convention. October 2016, November 2018 and May 2022. Annex II Parties reported contributions through multilateral channels, including climate specific and core/general support to MDBs.

[28] Source: Fig. 27, p.68 in compilation and synthesis of 4th biennial reports of Parties included in Annex I to the Convention for 2015, 2016, 2017, 2018 (May 2022); Fig. 19, p.63 in compilation and synthesis report of 2nd biennial reports of Paris included in Annex I to the Convention for 2013 and 2014.

Private climate finance mobilised by developed countries								
BA, 2020	12.8	16.7	13.2 [29]	15.7	19.8 [30]	25.6 [31]	21.7	22.7
BRs, 2, 3 and 4[32]	n/a							
OECD, 2022b	12.8	16.7	n/a	10.1	14.5	14.7	14.4	13.1
Total climate finance mobilized by developed countries								
BA (Aggregated based on data reported in the BA as above)	52.7	59.7	61.9	71.4	74.2	86.3	87	90.8
OECD, 2022b	52.4	61.8	n/a	58.5	71.6	79.9	80.4	83.3

Table A1.5. Indicative composition of future ranges of climate finance provided and mobilised by developed countries based on two forward-looking scenarios,[33] OECD (2021)

Component	2021	2022	2023	2024	2025
Scenario 1: Planned delivery of public finance					
Public finance	70.5	77.7	85.3	91.1	94.5
Export credits			2.6		
Private finance mobilised	15.2	16.7	18.4	19.6	20.4
Total	**88**	**97**	**106**	**113**	**117**
Scenario 2: Lower-than targeted levels of climate finance					
Public finance	66.5	74.6	82.5	89.3	94
Export credits			2.6		
Private finance mobilised	14	15	16	16.5	16.6
Total	**83**	**92**	**101**	**108**	**113**

Source: OECD (2021)

[29] Includes mobilised private climate finance by the MDBs and by bilateral, regional institutions (of $10.9 billion and $2.3 billion respectively) as per Fig. 1, p.6 in 2018 BA's Summary and Recommendations for 2015-2016.

[30] Includes mobilised private climate finance by the MDBs, bilateral, regional institutions and other private finance projects (of $10.8, $3.7, and $5.3 billion respectively) as per Fig. 2, p.8 in 2020 BA's Summary for 2017-2018; Fig. 2, p.9 of 2022's BA Summary for 2019-2020.

[31] Includes mobilised private climate finance by the MDBs, bilateral, regional institutions and other private finance projects (of $10.8, $3.8, and $11 billion respectively) as per Fig. 2, p. 8 in 2020 BA's Summary for 2017-2018.

[32] The compilation and synthesis of the biennial reports of Parties included in Annex I to the Convention do not provide an aggregate of the private finance mobilized.

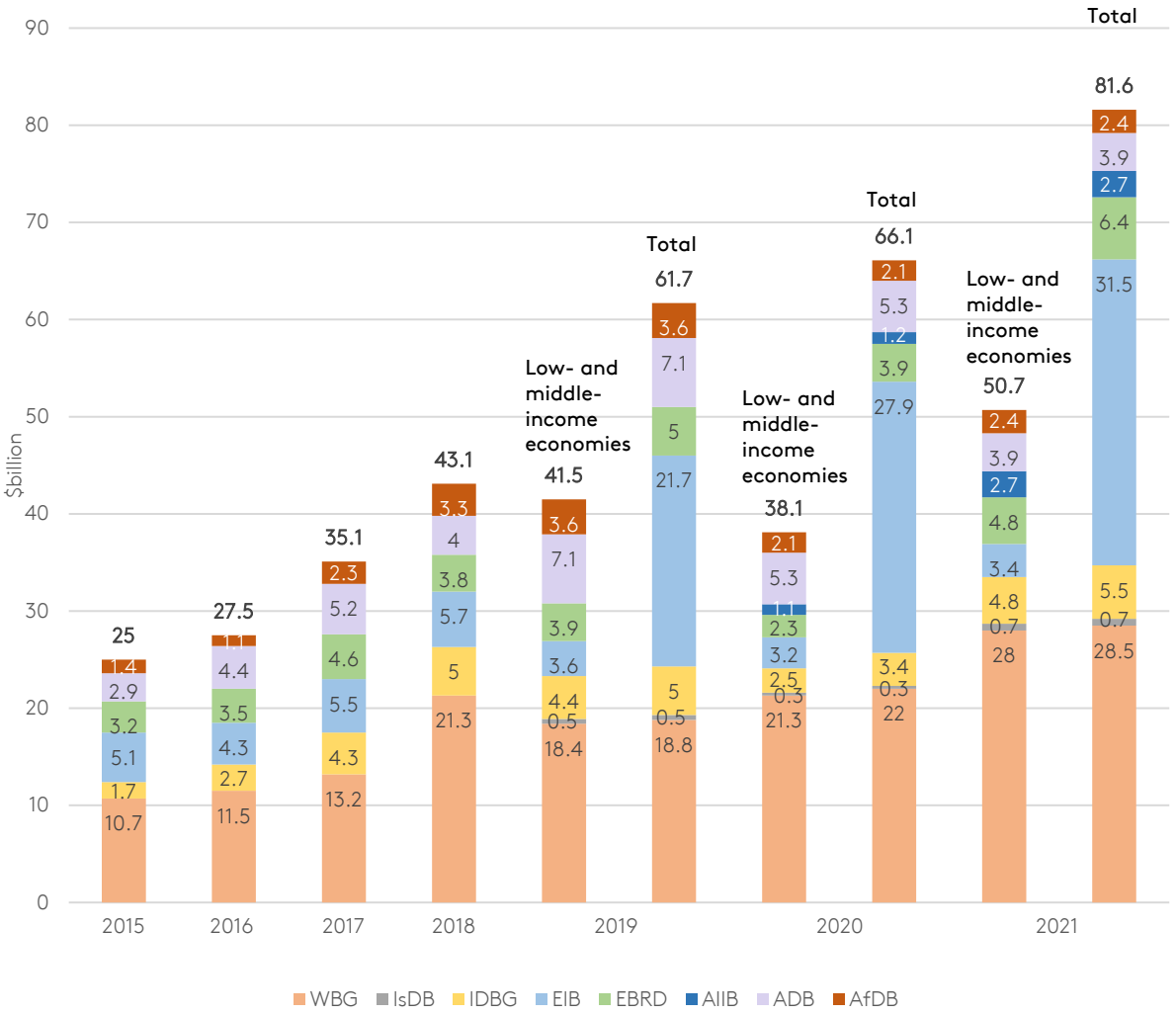
[33] Scenario 1 assumes that public finance is scaled up in line with the information provided by countries and MDBs, subject to OECD analysis and assumptions. Scenario 2 aims to illustrate the joint impact of several factors that may result in lower-than-targeted levels of climate finance, including i) potential near-term macroeconomic risks currently facing many developing countries; ii) potential capacity constraints on scaling up project pipelines, exacerbated by the pandemic; and iii) intended shifts in the composition of providers' portfolios.

Table A1.6. MDB climate finance by scope in low- and middle-income economies, 2021 (US$ million)

MDB	Adaptation finance	Mitigation finance	MDB climate finance
AfDB	1,549	880	2,429
ADB	1,326	3,438	4,764
AIIB	651	2,096	2,746
EBRD	336	4,441	4,777
EIB	381	2,990	3,371
IDBG	1688	3,131	4,819
IsDB	252	432	684
WBG	11,448	16,541	27,989
Total	**17,611**	**33,055**	**50,666**

Source: AfDB et al. (2022)

Figure A2.1. MDBs' climate commitments from 2015 to 2021 (US$ billion)



Note: 2015-18: Climate finance in emerging and developing economies; 2019-21: Climate finance in all economies where the MDBs operate.
Source: Authors, compiled from Prasad et al. (2022); Joint Report on Multilateral Development Banks (2022)

2.2. Understanding the current nature of the climate finance mobilised and delivered by developed countries for developing countries

Between 2016 and 2020, most of the climate finance mobilised by developed countries focused on mitigation activities in developing countries (67%) and largely on high-emitting countries, while finance for cross-cutting activities was low (9%). Yet adaptation finance grew in both relative and absolute terms in 2020 compared with 2019 through bilateral channels and MDBs, as the result of a few large infrastructure projects (OECD, 2022a). Nearly half the climate finance provided and mobilised between 2016 and 2020 for Small Island Developing States (SIDS) and Least Developed Countries (LDCs) focused on adaptation (OECD, 2022a).

More than half of total climate finance was concentrated in four economic sectors – energy (32%); transport (14%); agriculture, forestry and fishing (9%); and water supply and sanitation (8%). While mitigation finance targets mainly the energy and transport sectors, adaptation finance was spread more evenly across larger number of sectors, focusing on water supply and sanitation, and activities in the agriculture, forestry, and fishing sector (OECD, 2022a).

Loans accounted for the largest share of public climate finance provided, amounting to 72%[34] of the total ($42.4 billion) between 2016 and 2020. Grants provided 26% of public climate finance, while public equity investments continued to be very limited (2%). The instrument split varied significantly between provider types, with multilateral climate funds and bilateral aid agencies committing more funds as grants compared with MDBs and bilateral development finance institutions (OECD, 2022a). Grants represented a larger share of finance for adaptation and cross-cutting activities than mitigation, as well as a much higher share of climate finance for SIDS, LDCs and fragile states compared with developing countries overall (ibid.).

Climate finance flows are unevenly distributed, targeting mainly Asia (42%) and middle-income countries (43% for LMICs and 27% for UMICs). The relative share of mitigation finance and adaptation finance varies widely between region and income groups (Table A1.7). In contrast with the trends in other regions, climate finance in Oceania is largely focused on adaptation (57%) and targets a larger number of cross-cutting activities (19%). The relative share of adaptation finance in Africa is higher than in most regions (apart from Oceania), amounting to 34% in 2016–20. Mitigation and adaptation finance are more evenly distributed in low-income countries than in other income groups, with 50%, 40%, and 10% of climate finance provided for adaptation, mitigation and cross-cutting activities respectively.

Asia and Africa received the largest amounts of public climate finance. On a per capita basis, the regions of Oceania and Eastern and Southern Europe received the largest amounts of total climate finance, followed by Latin America and the Caribbean, Africa and Asia.

Tables A2.7 and A2.8 summarise the disaggregated analysis of climate finance flows for the period 2016–20 in the OECD (2022a; 2022b).

[34] This includes both concessional and non-concessional loans.

Table A1.7. Disaggregated analysis of climate finance flows mobilised and delivered by developed countries for developing countries in 2016-2020

	US$ bn	%
Instrument split of public climate finance flows		
Grants	14.9	26
Loans	42.4	72
Equity	1.2	2
Thematic split of climate finance provided and mobilised		
Mitigation	50.2	67
Adaptation	17.8	24
Dual uses	6.7	9
Sectoral split of climate finance provided and mobilised		
Energy	n/a	32
Transport	n/a	14
Agriculture, forestry, fishing	n/a	9
Water supply and sanitation	n/a	8
Banking services	n/a	5
Industry, mining, construction	n/a	4
All other sectors	n/a	28
Distribution of climate finance across regions		
Americas	12.5	17
Africa	19.5	26
Europe	3.4	5
Asia	31.2	42
Oceania	0.5	1
Unspecified	7.2	9
Distribution of climate finance across income groups[35]		
LICs	6	8
LMICs	32	43
UMICs	20	27
HICs	2	3
Unallocable	14	19

Source: OECD (2022b)

[35] Low-income countries (LICs), lower-middle income countries (LMICs), upper-middle income countries (UMICs), high-income countries (HICs).

Table A1.8. Climate theme split of climate finance provided and mobilised by developed countries for developing countries in 2016-2020 by region and income group (%)

	Mitigation	Adaptation	Cross-cutting
Distribution of climate finance across regions			
Americas	73	18	9
Africa	58	34	8
Europe	79	13	8
Asia	73	22	5
Oceania	24	57	19
Unspecified	53	18	29
Distribution of climate finance across income groups			
LICs	40	50	10
LMICs	68	28	4
UMICs	78	15	7
HICs	86	12	2

Source: OECD (2022a)

Looking ahead, most developed countries have committed to working with developing countries to increase MDBs' ambition on climate finance, and to work with MDBs and climate funds to enhance access, in particular for SIDS and LDCs (COP27, 2022). They have also come together to improve the effectiveness and ambition of climate funds, including by collectively committing $5.33 billion to support the eighth replenishment of the Global Environment Facility in April 2022. On adaptation finance, developed countries are taking important steps to improve accountability and transparency as well as overall ambition – for example, the 2022 Delivery Plan reports that 12 countries have set adaptation finance commitments for 2025, several of which involve doubling or more.

Appendix 2. Estimating the investment needs for sustainable development and tackling climate change

As set out in Figure 3.1 above, we have set out the main categories of climate-related investments in four clusters:

1. The energy transformation
2. Loss and damage
3. Adaptation and resilience
4. Natural capital

Our assessment of the magnitude of these investments is based on available studies and on country-level assessments, building on Bhattacharya et al. (2022). There are three main types of information on investment needs: (i) assessments of sustainable infrastructure requirements; (ii) assessments of overall financing for the Sustainable Development Goals (SDGs); and (iii) assessments of the specific components of climate investment.

With regard to sustainable infrastructure assessments, there has been increased recognition of the crucial role of financing of sustainable infrastructure for development since the Addis Ababa Conference in 2015, which culminated in the adoption of a global framework for financing sustainable development (the Addis Ababa Action Agenda). Several studies have estimated the financing needs in sustainable infrastructure to support development objectives, including Bhattacharya et al. (2016), OECD (2017) and Rozenberg and Fay (2019).

Two studies – Gaspar et al. (2019) and Kharas and McArthur (2019) – have estimated the investments required to meet the SDGs. These include infrastructure assessments, although not with the same level of detail or the same coverage, and also encompass other categories including health, education and social protection. The common trend across estimates is that investments in developing countries will need to be substantially scaled up in order to alleviate poverty in all its dimensions, achieve convergence with advanced economies, and meet the needs of a growing population.

More recently, there have been many studies carried out particularly with regard to the energy transformation and the implications of the 1.5°C and 2°C temperature scenarios. These include ETC (2022), IEA (2021a), IEA (2021b), IRENA (2021), McKinsey (2022), OECD (2017), SYSTEMIQ (2021). These studies take a more bottom-up approach in estimating energy needs in terms of the main components, including renewable energy generation and infrastructure, the transformation of energy demand in key end-use sectors (transport, industry, buildings), and low-carbon fuels (such as green hydrogen). Differences in coverage largely explain the wide variation between estimates.

Unlike the energy transformation assessments, both data and assessments on adaptation and resilience are very fragmentary and have very little country-level information. To date, UNEP (2016) is the most comprehensive assessment of the costs of adaptation and resilience in developing countries because it reviews a wide range of national and sector-specific studies. The World Bank's Country Climate and Development Reports (CCDRs) are beginning to provide more granular information on adaptation and resilience financing needs, and they tend to confirm that the financing requirements are substantial and underfunded.

There is significant uncertainty on the costs of loss and damage given that the future impacts of climate change are difficult to predict. Existing studies, including Chapagain et al. (2020)

and Markandya and González-Eguino (2019), indicate that financing loss and damage in developing countries could be in the order of $200 to $400 billion per year.

Recent assessments of the financing needs in natural capital – by Deutz et al. (2020), ETC (2022), McKinsey (2022), SYSTEMIQ (2021), UNEP (2021) and Vivid Economics (2021) – outline three main categories of investment in natural capital: sustainable agriculture, the protection and restoration of ecosystems (forests through avoided deforestation and afforestation; coastal/marine ecosystems such as peatlands, mangroves, seagrasses and saltmarshes); and the conservation of biodiversity. These sectors face systematic underinvestment, despite their critical role for mitigation, adaptation and development.

A multitude of recent studies have added to the knowledge base on what the climate agenda means for investment needs, but so far these studies cannot be compared like-for-like. For a comprehensive and robust understanding of investment requirements over the next three decades, analyses will need to be undertaken at the individual country level. For the assessments of investment needs reported in Figure 3.1, we have used the country-level data from Bhattacharya et al. (2022) and incorporated climate-related aspects as well as top-down studies of needs assessments for EMDCs for the major categories of climate investments.

Table A2.1. Summary of assessments of annual investment needs for sustainable development

Source	Scenario	Countries	Baseline (US$ tn)	Time period	Energy (US$ tn)	Transport (US$ tn)	Water & sanitation (US$ tn)	Telecoms (US$ tn)	Total (US$ tn)
Bhattacharya et al. (2022)	Delivering on development and climate goals	EMDEs other than China	0.73 (spending in 2019)	2025 & 2030	Not specified	Not specified	Not specified	Not specified	2025: 1.16 2030: 1.84
Bhattacharya et al. (2016)	Business as usual	Global	3.4 (spending in 2014)	2015 - 2030	1.4 – 1.6	1.8 – 2.1	0.8 – 1	1 – 1.1	5 – 5.7
Gaspar et al. (2019)	LMICs make substantial progress towards the SDGs	EMDEs	0.523 (spending in 2016)	2030	Not specified	Not specified	Not specified	Category not included	1.29
Kharas & McArthur (2019)	LMICs achieve infrastructure-related SDGs	Low- and middle-income countries	2.27 (spending in 2015)	2025	1.13	0.915	0.265	Category not included	2.31
OECD (2017)	IEA (2017) 2°C 66% scenario	Global	6.3 (spending per year - no further climate action)	2016 – 2030	2.7	2.7	0.9	0.6	6.9
Rozenberg and Fay (2019)	LMICs achieve infrastructure-related SDGs and 2°C	Low- and middle-income countries	Not specified	2015 – 2030	0.78	0.42	0.2	Category not included	1.55 (includes 0.1 in flood protection and 0.05 in irrigation)

Note: The total investment requirements in Bhattacharya et al. (2022), Gaspar et al. (2019) and Kharas & McArthur (2019) only include infrastructure-related investment and exclude categories of human capital investment included in the studies.

Table A2.2. Summary of global assessments of annual investment needs to address climate change

Study	Scenario	Baseline (US$ tn)	Time period	Annual investment (US$ tn)	Annual investment by sector (US$ tn)	Public/ private
Deutz et al. (2020)	Biodiversity conservation	Spending in 2019: 0.12-0.14	2030	0.7 – 1	**AFOLU:** 0.4 – 0.6 **Biodiversity**: 0.28 – 0.4	Public & private
Energy Transitions Commission (2022)	Low-carbon energy transition	Current annual investment: 2	2020-2050	4	**Hydrogen**: 0.08 **Power**: 2.85 **Transport**: 0.19 **Buildings**: 0.63 **Industry**: 0.11	Public & private
IEA (2021a)	NZE: Net zero emissions by 2050	Annual investment 2016-2020: 2.3	2021-2050	4.8 [5 for 2030]	**Fuel production**: 0.37 **Power generation**: 1.31 **Infrastructure**: 0.98 **Transport**: 0.94 **Buildings**: 0.76 **Industry**: 0.42	Public & private
IRENA (2021)	Energy transition: 1.5°C pathway	Investment in 2019: 2.1 Current plans for 2021–2050: 3.3	2021-2050	4.4	**Fuel production**: 0.17 **Power generation**: 1.45 **Energy infrastructure**: 0.85 **Transport**: 0.29 **Buildings**: 1.15 **Industry**: 0.44	Public & private
McKinsey (2022)	NGFS Net Zero by 2050 scenario	Spending in 2020: 5.7 Current Policies scenario for 2021-2050: 8.3	2021-2050	9.2	**Hydrogen, bio-fuels, and heat**: 0.28 **Fossil fuels**: 0.67 **Power**: 1.94 **Mobility**: 3.5 **Buildings**: 1.7 **Industry**: 0.21 **AFOLU**: 0.94	Public & private
OECD (2017)	2°C 66% scenario	Business as usual scenario for 2016 – 2030: 2.1	2016-2030	2.7	**Energy supply**: 1.6 **Energy demand**: 1.1	Public & private
SYSTEMIQ (2021)	Low-carbon investment opportunities	Current annual investment: 2.9	2021-2030	3.1 – 4	**Energy:** 2.8 – 3.3 **Adaptation and resilience:** 0.1 – 0.3 (for developing countries only, based on UNEP (2016)) **AFOLU**: 0.2 – 0.4	Public & private
UNEP (2021)	Nature-based solutions to meet the climate, biodiversity and land degradation targets	Current investment in 2019: 0.13	2021-2050	0.4	**AFOLU**: 0.4	Public & private
Vivid Economics (2021)	IEA NZE scenario	Annual investment 2016-2021: 0.9	2021-2050	4.2 [2.6 for 2021-2026; 4.5 for 2026-2050]	**Low emission fuels**: 0.2 **Electricity**: 1.8 **Transport:** 1.1 **Buildings:** 0.6 **Industry:** 0.4 **AFOLU:** 0.2	Public & private

Table A2.3. Assessments of investment needs to meet the climate challenge in EMDCs

Study	Region	Sectors	Time period	Annual investment, 2030 (US$ tn)	Annual investment, 2050 (US$ tn)	Climate scenario
ETC (2022)	Middle- and low- income countries (other than China)	Energy	2026 - 2030	0.82	Not included	Net zero by 2050
IEA (2021b)	EMDEs (other than China)	Energy	2020 – 2030	1.073 (2021 – 2025) 1.732 (2026 – 2030)	Not included	Net zero by 2050
Bhattacharya et al. (2022)	EMDEs (other than China)	AFOLU, A&R	2025 & 2030	0.54 (in 2025) 0.98 (in 2030)	Not included	n/a
Chapagain et al. (2020)	Developing countries	A&R	2030 & 2050	0.05 – 0.18	0.09 – 0.45	3 scenarios: 2°C, 2.4°C, 4.3°C
Markandya and González-Eguino (2019)	MENA, SSA, SASIA, EASIA, LACA[36]	A&R	2030 & 2050	• 0.03 (low damages, high discount rates) • 0.37 (high damages, low discount rates)	• 0.07 (low damages, high discount rates) • 0.98 (high damages, low discount rates)	Low damages: 2.5°C by 2100 High damages: 3.4°C by 2100
		Loss and damages		• 0.28 (low damages, high discount rates) • 1.02 (high damages, low discount rates)	• 1.02 (low damages, high discount rates) • 1.53 (high damages, low discount rates)	
UNEP (2016)	Developing countries	A&R	2030 & 2050	0.14 – 0.3	0.28 – 0.5	n/a
Baarsch et al. (2015)	Developing countries	A&R	2030 & 2050	0.2 – 0.25	0.52 – 0.87	4 scenarios: 2°C, 2.7°C, 3.1°C, 3.6°C
		Loss and damages		0.4 – 0.43	1.07 – 1.85	

[36] Middle East and North Africa, Sub-Saharan Africa, South Asia, East Asia (excluding China, Japan and Korea), Latin and Central America and the Caribbean.

Appendix 3. Private sector-aligned initiatives

Table A3.1. Private sector-aligned initiatives

Name	Founders	Date	Topic	Objectives	Impact
Science Based Targets Initiative (SBTi)	CDP, UNGC, WRI, WWF	2015	Drive ambitious climate action in the private sector by enabling companies to set out GHG reduction targets aligned with a 1.5°C future.	Define and promote best practice in emissions reductions and net zero targets in line with climate science. Provide target setting methods and guidance to companies to set science-based targets in line with the latest climate science. Include a team of experts to provide companies with independent assessment and validation of targets. Serve as the lead partner of the Business Ambition for 1.5°C campaign.	Covers 1,970 companies in 60 countries and nearly 50 sectors, of which: • 970 with science-based targets. • 936 with commitments to 1.5°C.
Glasgow Financial Alliance for Net-Zero (GFANZ)	Led by Mark Carney and Michael R. Bloomberg (Co-Chairs), and Mary Schapiro (Vice Chair)	2021	Bring together the financial sector to accelerate the transition to a net-zero economy.	Firms' net zero commitments must use science-based guidelines to reach net zero emissions by 2050, cover all emission scopes, include 2030 interim target settings and commit to transparent reporting and accounting in line with criteria administered by sectoral alliances. Covers 7 key areas: sectoral pathways; real economy transition plans; financial institution transition plans; portfolio alignment measurement; managed phaseout; mobilising private capital; public policy.	Unites leading sub-sectoral net zero initiatives: the Net-Zero Banking Alliance (NZBA), the Net Zero Asset Managers initiative (NZAM), the Net-Zero Asset Owner Alliance (NZAOA), the Paris Aligned Investment Initiative (PAII) and the Net-Zero Insurance Alliance (NZIA). Members include nearly 550 financial firms responsible for assets of roughly $150 trillion.

Name	Founders	Date	Topic	Objectives	Impact
Finance to Accelerate the Sustainable Transition-Infrastructure (FAST Infra)	Started under the auspices of the One Planet Lab as collaboration between HSBC, the OECD, IFC, GIF and CPI. Evolved as a broad-based private-public partnership involving banks, asset managers, governments, MDBs, NDBs, academics and NGOs.	2020	Develop sustainable infrastructure into a deep liquid asset class. Scale-up investment in sustainable infrastructure in EMDCs.	Develop a consistent, globally applicable labelling system for sustainable infrastructure assets. Develop 4 market mechanisms to mobilise private investment at sale for the financing of labelled projects: technology-enabled platform; global revenue guarantee; open-sourced managed co-lending portfolio programme; sustainable financing facility for national development banks.	Over 50 global entities, representing governments at all levels, the financial sector, investors, DFIs, insurers, rating agencies and NGOs are now actively participating in developing the FAST-Infra initiative.
Voluntary Carbon Markets Integrity Initiative (VCMI)	Co-funded by the Children's Investment Fund Foundation (CIFF) and the UK Government Department for Business, Energy, and Industrial Strategy (BEIS).	2021	Multi-stakeholder platform to drive credible, net zero aligned participation in voluntary carbon markets (VCMs). Aim to ensure carbon offsets are underpinned by real actions to reduce GHG emissions and help developing countries access climate finance generated by the market.	Immediate priorities are to: • Develop high integrity guidance for buyers of carbon credits, including on climate claims by businesses. • Support access to high integrity voluntary carbon markets and monitor broader supply-side integrity efforts.	Launched a global consultation process in 2021 with businesses, governments, climate change experts, NGOs, Indigenous Peoples, and civil society around the world, to share their views and ideas in response to the proposed vision for VCMs, the principles that support that vision, and options for legitimate and credible claims regarding the use of carbon credits. Feedback, along with other stakeholder engagement, informed the Roadmap for Future Work, VCMI's path forward to 2022 and development of the Claims Guidance and Access Strategies.

Name	Founders	Date	Topic	Objectives	Impact
Race to zero	UN-backed global campaign led by the High-Level Climate Champions for Climate Action - Nigel Topping (UK) and Gonzalo Muñoz (Chile).	2020	Rally non-state actors (including companies, cities, regions, financial and educational institutions) to take rigorous and immediate action to halve global emissions by 2030 and deliver a healthy, fairer zero carbon recovery.	All members commit to reducing emissions across all scopes swiftly and fairly in line with the Paris Agreement, with transparent action plans and robust near-term targets. The commitments brought forward need to meet a minimum set of criteria.	Covers 4,475 businesses, 799 cities, 250 financial institutions, 35 regions, 731 educational institutions, over 3,000 hospitals from 45 healthcare institutions.
Climate Action 100+	Coordinated by five partner organisations: Asia Investor Group on Climate Change (AIGCC); Ceres; Investor Group on Climate Change (IGCC); Institutional Investors Group on Climate Change (IIGCC) and Principles for Responsible Investment (PRI).	2017	Engage with the world's largest corporate GHG emitters to curb emissions, strengthen climate-related financial disclosures and improve governance on climate change.	In signing up to Climate Action 100+, investors commit to engaging with at least one of 167 focus companies that are strategically important to the net zero emissions transition and to seek commitments on the initiative's key asks: • Implement a strong governance framework on climate change; • Take action to reduce greenhouse gas emissions across the value chain and; • Provide enhanced corporate disclosure.	615 investors engaging the world's largest GHG emitting companies. $60 trillion in assets managed by investors participating in the initiative. 167 companies being engaged through the initiative across the planet. 80%+ global industrial emissions estimated to be covered by focus companies.
Climate Finance Leadership Initiative (CFLI)	Michael R. Bloomberg formed the CFLI at the request of the United Nations Secretary-General António Guterres.	2019	Convene leading companies to mobilise and scale private capital for climate solutions.	Supporting policymaking to mobilise private climate finance. Mobilising investments for sustainable infrastructure in emerging markets.	Members include Allianz Global Investors, AXA, Bloomberg, Enel, Goldman Sachs, Japan's Government Pension Investment Fund (GPIF), HSBC, and Macquarie.

Name	Founders	Date	Topic	Objectives	Impact
Global Investors for Sustainable Development (GISD)	GISD's work is supported by UN system partners (DESA, UNCTAD, Global Compact, PRI, UNEP FI, UNDP, UNCDF and the Regional Commissions) and others like the World Bank Group.	2019	Deliver concrete solutions to scale-up long-term finance and investment in sustainable development.	Mobilise finance and investment. Scale-up investment solutions in developing countries. Enhancing the impact of private investment on sustainable development.	Rally 30 leaders of major financial institutions worth $16 trillion.
Global Infrastructure Facility (GIF)	A G20 initiative, GIF is a global collaboration platform that integrates efforts to boost private investment in sustainable, quality infrastructure projects in developing countries and emerging markets.	2014	Deliver bankable pipelines of Infrastructure Projects for private sector mobilisation	Enable collective action among a wide range of partners – including donors, development finance institutions, country governments, with inputs of private sector investors and financiers – to leverage resources and expertise and find solutions to build bankable pipelines of infrastructure projects that attract private financing.	The GIF has supported 146 infrastructure programmes and projects across 66 countries. 86% of its portfolio is climate-smart. To date, 19 GIF-supported projects have reached commercial/financial closing and have mobilised $9 billion in private investment.

Name	Founders	Date	Topic	Objectives	Impact
Sustainable Markets Initiative	His Royal Highness the Prince of Wales, in collaboration with the World Economic Forum.	2020	Aims to lead and accelerate the world's transition to a sustainable future by engaging and challenging public, private and philanthropic sectors to bring economic value in harmony with social and environmental sustainability.	Several programmes aimed at creating global engagement, inspiring change and accelerating investments towards sustainable markets: • Country engagement; • RE:TV, a content platform showcasing inspiring business innovations and ideas for a sustainable future; • Flagship initiatives, including: the Terra Carta - a charter that provides a roadmap to 2030 for businesses to move towards an ambitious and sustainable future; the Terra Carta Design Lab; and the Natural Capital Investment Alliance (NCIA).	450+ CEOs have pledged support for the Terra Carta in the first year. 45 global organisations have been awarded with the Terra Carta Seal. 18 CEO-led task forces have been established.