

Financing a big investment push in emerging markets and developing countries for sustainable, resilient and inclusive recovery and growth

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List of abbreviations

ADB	Asian Development Bank
AfDB	African Development Bank
AFOLU	Agriculture, forestry and other land use
BEPS	[Inclusive Framework on] Base Erosion and Profit Shifting
CBAM	Carbon Border Adjustment Mechanism
CIF	Climate Investment Funds
DAC	Development Assistance Committee [of the OECD]
DRM	Domestic resource mobilisation
EMDEs	Emerging markets and developing economies
GCF	Green Climate Fund
GDP	Gross domestic product
GEF	Global Environment Facility
GIF	Global Infrastructure Facility
IBRD	International Bank for Reconstruction and Development
IDB	Inter-American Development Bank
IEA	International Energy Agency
IFC	International Finance Corporation
IFI	International financial institutions
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
LIC	Low-income country
LMIC	Lower middle-income country
LNOB	Leave No One Behind
MDB	Multilateral Development Bank
MIGA	Multilateral Investment Guarantee Agency
NDC	Nationally Determined Contribution
OECD	Organisation for Economic Co-operation and Development
ODA	Official development assistance
PIMA	Public Investment Management Assessment
PRGT	Poverty Reduction and Growth Trust
SDGs	Sustainable Development Goals
SDRs	Special Drawing Rights
SIDS	Small island developing states
UMIC	Upper middle-income country
WEO	World Economic Outlook

Overview and summary

A critical time for development and climate

The 2020s will be a crucial decade for development and climate. If we fail on one, we will fail on the other. There is a real opportunity to make a breakthrough on both development goals and climate, building on the progress achieved by emerging markets and developing economies (EMDEs) and new technological options that can deliver improved results. EMDEs 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 human capital development.

Beyond the 2030 Agenda for Sustainable Development targets, investment strategies and financing requirements need to anticipate the ***historic demographic transitions over the coming three decades***. The world population is projected to increase by 1.9 billion between 2020 and 2050, with all of that growth taking place in EMDEs other than China – and in all developing regions but especially Africa and South Asia. More than 80% of young people aged 5–15 during this period will be living in EMDEs other than China. Investing in their human capital will be the most powerful contribution to poverty reduction and to global prosperity and peace.

The urgency and opportunity for climate action is becoming ever clearer. Each successive report from the Intergovernmental Panel on Climate Change (IPCC) is providing compelling evidence that climate change is occurring faster, and the impacts are more dire, than anticipated. Meanwhile, decisive climate action has become increasingly attractive. Thanks to rapid technological advances, low-carbon solutions are now less costly than fossil fuel-based investments across a broad segment of economic activity. Mounting evidence shows that climate action is not a cost in terms of growth, development or jobs but rather an attractive path to more inclusive, resilient and sustainable growth.

Against this backdrop, the world is coalescing behind three interrelated strategic objectives:

1. Setting a path to reach net-zero emissions by 2050 globally, to limit warming to 1.5°C above pre-industrial levels.
2. Taking much more aggressive actions on adaptation and resilience given the already evident impacts and mounting risks from climate change.
3. Protecting and restoring natural capital given the large and accelerating losses and the importance for human and planetary security of reversing these.

EMDEs will have a central role to play in achieving all three of these objectives. Baseline projections of business-as-usual scenarios show that emissions for advanced economies would remain stable at present levels through 2050, whereas emissions for China and EMDEs would roughly double by 2050. A path to achieving net-zero emissions by these economies in the 2050–2070 timeframe is therefore of crucial importance. EMDEs in general, and low-income and small island developing states (SIDS) in particular, will be much more affected than developed countries by climate change, and their capacity to withstand the shocks is much weaker. There is great urgency, therefore, to bolster the resilience of existing and future infrastructure assets and make the necessary investments to adapt to climate change. EMDEs also account for the vast preponderance of natural capital that is crucial for climate and biodiversity. Therefore, they need to be at the forefront of efforts to protect and restore natural capital.

EMDEs must respond to this development and climate agenda starting from difficult circumstances. Even before the COVID-19 pandemic, EMDEs 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 advent of the war in Ukraine, putting further strain on EMDEs. Fiscal space has been greatly reduced across EMDEs 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, EMDEs. These economies are at a juncture where high debt and slow recoveries are tilting the balance towards fiscal prudence and therefore towards economic stagnation. ***There is an alternative path: a carefully programmed and executed big-push investment programme, with associated financing, that could generate higher levels of growth with improved creditworthiness and deliver on both development and climate.***

A major, rapid and sustained expansion of investment for recovery and growth

A **major investment push** is needed to drive a strong and sustainable recovery out of the COVID crisis and transform economic growth so that it can deliver on both development and poverty reduction and the growing threat of climate change and environmental degradation.

The immediate need is to ***assist poor and vulnerable countries to cope with the health and economic costs of the pandemic and the economic fallout from the Ukraine crisis***, which could amount to 2% of their GDP annually over the next two to three years. Beyond that there is a need to resuscitate investment in emerging markets and developing countries, which saw investment decline by 12–15% in 2020–21, following a decade of slowing investment growth. 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. Everywhere there is an opportunity to ***‘build back better’, to replace aging and polluting capital with better capital and to build all new capital so that it is sustainable, inclusive and resilient.***

A recent report to the UK G7 Presidency by Nicholas Stern concluded that “to both raise growth and accelerate the drive to a net-zero emissions and climate-resilient economy, global investment needs to be increased and sustained above pre-pandemic levels by around 2% of GDP p.a.” over this decade and beyond. In EMDEs other than China, the scale of the challenge is even greater given the large deficits in human capital and infrastructure investments and prospective needs to support sustainable development, resilience and structural change. Investments in sustainable infrastructure in the developing world will be particularly important for their growth and development transformation, and for the sustainability of the planet including for climate. The scale and quality of investments will be crucial in managing the key system transformations – in energy, transport, water, digital, urban and food and land use.

This paper assesses the investment requirements for EMDEs other than China in four priority areas that are critical to their development and climate goals:

- Human capital (health and education)
- Sustainable infrastructure and the acceleration of energy transitions
- Adaptation and resilience
- The restoration of natural capital through sustainable agriculture, food and land use practices, and biodiversity.

This assessment draws on the aggregate analysis in these areas undertaken for the G7 report referenced above, work by the International Energy Agency and other assessments of investments needed for the net-zero transition and climate resilience, as well as disaggregated analyses in prior studies, to build country-by-country estimates for investment requirements for 2025 and 2030, using 2019 as the base year. While there is great urgency to ramp up investments given the narrowing window arising from both the climate and demographic transitions, we assume that it will take some time to build the absorptive capacity to scale up high quality investments in these priority areas.

As shown in Table S1 below, aggregate investment and development spending in these four areas would need to increase from 11.3% of GDP in 2019 to 15.1% in 2025 and 18.2% in 2030. This amounts to an incremental \$1.3 trillion by 2025 and \$3.5 trillion by 2030. This scaling up of spending is unprecedented but feasible. If successful, it would provide not just a major boost to the development prospects of EMDEs but to the global economy too, and keep the global warming target within reach.

Table S1. Investment and development spending targets (excluding China)

	Gross spending 2019		Spending target 2025		Spending target 2030	
	US\$bn	% GDP	US\$bn	% GDP	US\$bn	% GDP
Human capital	1,470	7.0%	2,000	8.2%	3,065	9.5%
Sustainable infrastructure	730	3.5%	1,160	4.8%	1,840	5.7%
AFOLU (agriculture, food, land use, nature)	150	0.7%	355	1.4%	650	2.0%
Adaptation and resilience	35	0.2%	180	0.7%	325	1.0%
Total	2,385	11.3%	3,695	15.1%	5,880	18.2%
<i>Notes: The estimates for human capital investment are based on analysis by Kharas and McArthur (2019). The estimates for sustainable infrastructure investment build on analysis by Bhattacharya et al. (2016), incorporating the additional investment required for the energy transition, as discussed above. The 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 (2021b). The estimates for adaptation and resilience investment are based on analysis by Systemiq (2021b).</i>						

Programmes, policies and platforms to deliver investment

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**:

- Institutional capacity to shape and manage the inter-generational investments needed in human capital and sustainable infrastructure
- 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

- Domestic reforms that can ensure the financial viability of long-term investments
- ‘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 EMDEs. 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.

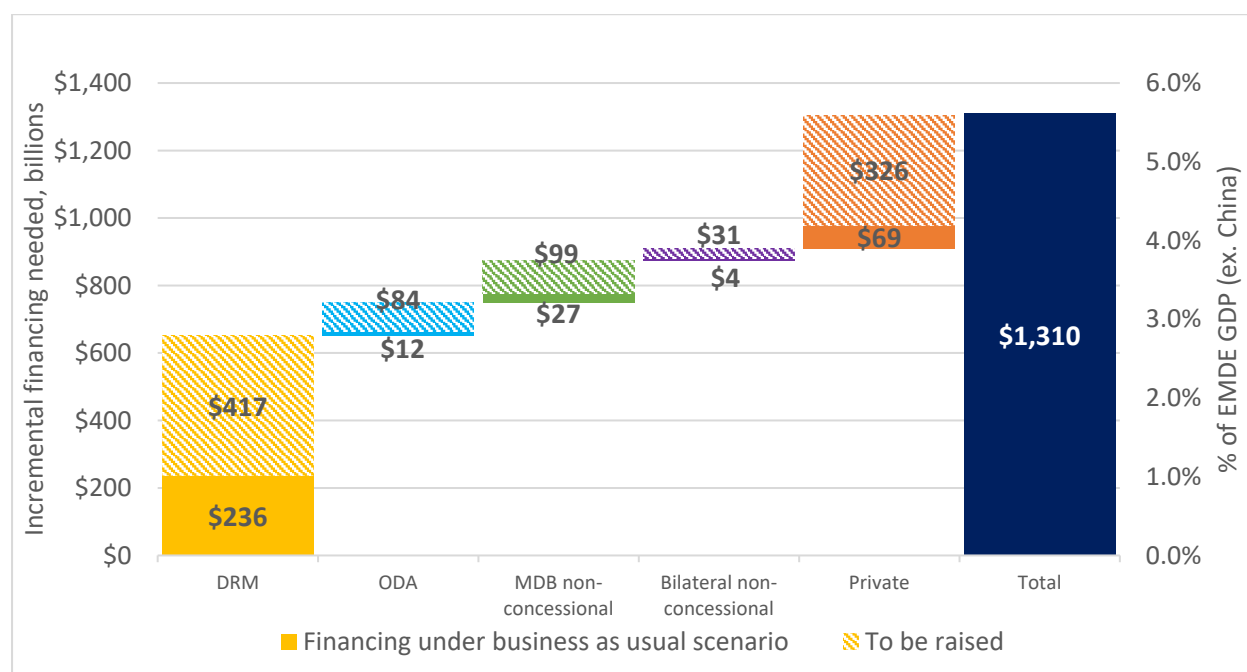
Financing a big investment push strategy

The scale of the investments needed in EMDEs 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 leads to a major **revamp in both domestic and international finance, public and private**.

COVID-19 has complicated an already tenuous debt sustainability situation. Half of all low-income countries were assessed to be at high risk of or in debt distress before the pandemic, and governments have taken on additional debt to respond to both the health and economic impacts of COVID. The G20 Common Framework for Debt Treatment that was launched in November 2020 has yielded limited results and there is broad agreement that the framework needs to be strengthened to include all creditors and expanded to all highly indebted countries. In the small set of countries where solvency is an issue, restoring debt sustainability is a prerequisite to a big push investment strategy.

In the large majority of EMDEs there is a basis for a ‘Grand Match’ financing strategy, where ambitious investment programmes supported by robust policy frameworks can be supported by a balanced mix of domestic and international finance. Such a possible mix to meet the incremental financing needs of \$1.3 trillion by 2025 is presented in Figure S1 below.

Figure S1. Grand Match financing strategy – incremental financing needed between 2019 and 2025 (billions 2019 US\$)



Source: Authors' calculations

About half the financing needed could come from domestic resource mobilisation (DRM). This would require an incremental public resource mobilisation effort of 2.7% of EMDEs' GDP. This is a challenging but feasible and essential foundation given the importance of DRM to creditworthiness and recurrent spending. A concerted effort will be needed to boost and improve the effectiveness of tax mobilisation, especially in EMDEs, supported by strong international tax cooperation on tax rates, tax avoidance and equitable tax sharing. Carbon pricing and elimination of fossil fuel subsidies can also generate substantial additional revenues.

Official development assistance (ODA) and concessional climate finance must be scaled up substantially at this crucial moment. We propose **an incremental increase in ODA and multilateral concessional finance of \$96 billion by 2025, a 50% increase over 2019 gross figures** (see Figure S1). This amounts to 0.15% of donor GDP (excluding China), bringing total ODA to 0.45%. Beyond supporting the immediate needs of the COVID crisis, ODA is needed to help catalyse investments and crowd in funding from other sources. ODA will be key to the 'leave no one behind' agenda of the Sustainable Development Goals, and to supporting health and education investments in low- and lower middle-income countries. ODA is also needed to support global public goods, including the climate, nature and adaptation and resilience investments, specifically in poor and vulnerable countries. It can also help to reduce the cost of the low-carbon transition, including the costs of a just transition. And ODA can help both lower the cost and de-risk sustainable infrastructure projects and the 'build back better' agenda, through upstream project development, equity finance, standards and platform development.

This is also the time to step up financing for multilateral concessional financing windows given their important direct and catalytic impact. Beyond the recently completed replenishment of the International Development Association (IDA), other instruments also need to be bolstered, including the African Development Fund, the Climate Investment Funds' clean energy transition facility, the Global Infrastructure Facility and subsequent replenishments of the Global Climate Fund and the

Global Environment Facility. Bilateral donors and the multilateral development banks (MDBs) must collectively aspire to **deliver the \$100 billion per year climate finance commitment in 2022 in support of a green recovery and raise ambition further**, given the urgent need to scale up investments for both climate change mitigation and adaptation.

Multilateral development banks and development finance institutions also have a crucial role in supporting a big push investment strategy. Investment and its finance require the management of risk and confidence in revenue flows. The role of MDBs and DFIs extends beyond their direct financing. In particular, they can help countries to scale-up quality investment programmes and translate them into concrete project pipelines that can attract private investors. In addition to financing priority public investments, they need to greatly bolster the mobilisation of private finance through better platforms, instruments and incentives. If countries succeed in putting in place the scale of investment programmes needed for development and climate transformation, **MDBs may need to triple their level of financing by 2025**. All means must be explored to unlock this scale of financing, including the review of capital adequacy methodologies by the taskforce established by the G20, more effective use of lending capacity and further steps on balance sheet optimisation. Shareholders must also be prepared to support proactive capital increases and alleviate specific lending constraints, for example to large borrowers, to ensure that ambitious development and climate transition programmes are not blocked because of a lack of financing. Shareholders should push the MDBs and DFIs to focus on and scale up the necessary investments and their finance, but as they do so, they should indicate that the future support required by such a strategy will be there at the right time.

There is great potential and need to increase **private sector investment and finance** given the binding constraints on fiscal space and the dynamism that the private sector can bring to the transformation agenda. Our proposal is for a **doubling or more of private lending between 2019 and 2025**. A growing proportion of investments can now be undertaken by the private sector. In the important area of energy transformation, the private sector can now play a dominant role in both supply and demand side investments. However, the mobilisation of private finance today is far too low and will have to increase many times over. In particular, private finance for sustainable infrastructure and climate are being held back ‘upstream’ by weak and unstable policies and regulation, which shrink the space for private finance; by scarcity of well-prepared, bankable projects; and by a lack of financial channels connecting deep sources of funds with investments. There needs to be **action on all three fronts** for private finance to grow.

MDBs and other development partners will also need a major shift to catalyse and mobilise finance at scale. A number of private-sector led initiatives have been launched over the past two years to mobilise finance for sustainable investments in EMDEs, including the Climate Finance Leadership Initiative, the Sustainable Markets Initiative, FAST-Infra, the Global Investors on Sustainable Development Alliance, and most recently the Glasgow Financial Alliance for Net Zero. Stepped-up efforts are also underway from the Global Infrastructure Facility, the MDBs and other development partners to enhance the partnership with the private sector, including through the Country Mobilization Platform announced at the G20 conference in Venice in July 2021. There is now a great opportunity to build a robust partnership, including on structures for risk mitigation, that can unlock private finance at scale and reduce the cost of capital.

Given the scale of the investment challenge and the financing constraints, especially in low-income and vulnerable countries, we must **pursue all promising and innovative options to mobilise low-cost finance**. This should include using the available firepower of the pool of unutilised Special Drawing Rights (SDRs). The proposal to **use SDRs** to augment the Poverty Reduction and Growth Trust in the

IMF and the establishment of a **new Resilience and Sustainability Trust** in the IMF to support climate action can inject the immediate support that is needed. There is also scope to tap into the growing flows of **private philanthropy** to foster partnerships and leverage finance for priority goals such as the Global Energy Alliance for People and Planet (GEAPP). Innovative structures such as the International Financing Facility for Education (IFFEd) can greatly leverage donor finance and paid-in capital through sovereign guarantees. Another way to mobilise debt-free finance is through voluntary carbon markets. Mechanisms need to be put in place to assure the quality and integrity of such finance, but there is scope to mobilise financing in the tens of billions of dollars for priorities such as the accelerated phase-out of coal and restoration of forests and degraded land.

All these ways to boost finance can help deliver finance at the right scale, of the right kind, 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 multilateral development banks and the international financial institutions, 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.

The agenda to deliver on a big investment push strategy will necessarily entail many different strands that must be well-integrated and pursued simultaneously. **But we cannot wait to push ahead with a big investment push to drive recovery and transformation. If we fail, we will not only have a lost decade for development, but people all around the world will be in great danger over the coming decades.**

1. Emerging markets and developing economies (EMDEs) at a crossroads

1.1. Underlying challenges

In the decade before the COVID-19 pandemic, emerging markets and developing economies (excluding China) had run into headwinds in their growth and development prospects and faced a complex set of interwoven challenges. There had been a marked slowdown in growth, productivity was stagnant and many EMDEs were facing challenges of inequality, weak safety nets, and pressures of social cohesion. Progress on the Sustainable Development Goals (SDGs) was slowing, especially in low-income and conflict-affected countries. In addition, the threats of climate change, environmental degradation and biodiversity loss were growing.

In the 1970s and 1980s, a handful of countries in East Asia grew quickly for two decades or more and attained high-income status. In the years since, few countries have achieved the same feat. Since the end of the commodity super-cycle five to six years ago, both middle-income emerging markets and low-income developing countries have been growing more slowly than their potential indicated. Many emerging markets seem to be stuck in the so-called ‘middle-income trap’: countries achieve middle-income or even upper middle-income status but then go no further.

At the heart of the matter is low productivity growth, whether measured as output per worker or total factor productivity. Closely related to this problem is the lack of export diversification, especially in Latin America, the Middle East and North Africa (MENA), Sub-Saharan Africa, and South Asia. Many countries export the same basket of goods they exported decades ago, suggesting a failure to mobilise resources from low- to high-productivity sectors with export potential.

Inclusive growth in EMDEs has also been hampered by the structure of labour markets. Long before the COVID-19 crisis, labour markets in EMDEs suffered the twin problems of low employment rates (especially for women and the young) and high rates of informal employment, partly associated with limited schooling and a poor quality of education. The scarcity of formal jobs has also made government aid programmes more challenging: job subsidy schemes in which the government pays a percentage of the wage, for instance, are not viable if there is no wage specified in a legally binding contract.

Technological change – artificial intelligence (AI) and automation – has added to the stress on labour markets. Many jobs that were the backbone of the middle class in EMDEs (from small retailer and bank teller to cash-register clerk or phone-bank operator) have begun to be automated and could eventually disappear. There is a risk that the newly created middle classes could hollow out.

The central problem is an economic structure incapable of delivering *good jobs at good wages*. In East Asia, labour-intensive manufacturing provided those good jobs. In South Asia, Africa and Latin America, natural resource exports are high-productivity but yield relatively few jobs. Most people work in the service sector, where productivity levels and growth are low and the risk of losing out to automation is high. For EMDEs, a strategy to deliver *good jobs at good wages* must be out front and central to their development strategy.

Persistent inequality and lack of social insurance remain impediments to inclusive growth in many EMDEs. It is generally *not true* that before the COVID-19 crisis inequality had been increasing in EMDEs. Largely as the result of the rise of China and India, cross-country inequality had been falling.

And due to the recent commodity super-cycle, which provided governments with greater resources, within-country inequality had fallen in a number of nations, particularly in Latin America.

At the same time, it *is* true that *levels* of income inequality remained extremely high, especially in Latin America and Sub-Saharan Africa. It is also the case that progress in reducing income inequality had largely stopped since the end of the commodity super-cycle. These two very different challenges mistakenly tend to be lumped together: the inequality-reduction challenge and the social insurance challenge. In fact, they each involve different groups of the population and call for very different policy responses.

EMDEs are facing growing local environmental pressures and their future growth path will be crucial to curtailing greenhouse emissions and slowing down global warming. They face specific and unique challenges owing to their productive structures, political economy and level of development:

- Rapid urbanisation and the lightning-fast growth of cities and suburbs.
- Weak public transport infrastructure, often of a contaminating nature.
- Limited access to clean water and efficient waste disposal.
- Difficult-to-remove subsidies on fossil fuels.
- Deforestation and use of locally-sourced wood or other biomass as fuel.

Yet decarbonisation also opens up huge opportunities for EMDEs:

- Ongoing urbanisation allows countries to build *green cities* from the start, rather than having to tear down and rebuild.
- Late industrialisation allows countries to build *green industries* from the start, rather than having to decommission and rebuild.
- Advances in storage technology will soon enable several EMDEs to become sizeable *exporters of green energy* – especially green hydrogen – generated via solar or wind power.

The policy response to the pandemic has highlighted the crucial role of state capacity in dealing with challenges of all sorts, including natural and human-made disasters. Countries that were able to roll-out vaccines quickly, for instance, were those that had long been building state institutions capable of such a task. Examples include Israel, Chile, the UK, Hungary, Singapore and Canada.

As underscored in Section 3 of this report, responding to many of the other challenges outlined here will require a capable state and nimble, effective and transparent institutions – whether we are talking about delivering export diversification, social insurance or something else.

Responding to these challenges has also been made more difficult because of the growing constraints on fiscal space, resource mobilisation and financing. Before the pandemic, many EMDEs had relatively little space – defined as the ability to spend more and finance the additional spending from own or borrowed resources. The challenges of COVID-19 mean that most EMDEs have used up whatever fiscal space they had.

Therefore, the challenge of mobilising new resources, whether locally (via additional taxation or borrowing) or globally (via private capital inflows or publicly-sourced development finance) is central to post-COVID reconstruction efforts and longer-term development and climate imperatives. This is the central focus of the report and discussed at length in Section 4.

1.2. Impact of the pandemic and a divergent and protracted recovery

The health costs of the COVID-19 pandemic have been immense. Worldwide, over 400 million COVID cases have been recorded and over 5.79 million deaths have been attributed to the disease (as of 11 February 2022) (Johns Hopkins University, 2022).

The response to this health crisis has been hugely inequitable. The 50 least wealthy countries have received only 6.7% of vaccination doses, but have 20.6% of the world's population (as of 14 February 2022) (Bloomberg, 2022).

There have been devastating human costs beyond the immediate health impacts of the pandemic. It is estimated that 119–124 million people were pushed into extreme poverty in 2020, due to the pandemic (World Bank, 2021a). Education has been disrupted for 90% of the world's children and that may roll back years of improvements in human capital (World Bank, 2020a). Many of the 1.6 billion children who were forced out of school at the peak of the lockdowns imposed during the pandemic may never return (WEF, 2020a).

The pandemic and the global response also generated major economic costs. In 2020, GDP fell by 4.7% in advanced economies and by 2.2% for EMDEs (including China) (IMF, 2021a), and investment collapsed by 8.8% and 15.2% in advanced economies and EMDEs, respectively (see Figure 1.1). Global public debt reached 99% of GDP in 2020 and many developing countries are facing severe debt stress (World Bank, 2022b).

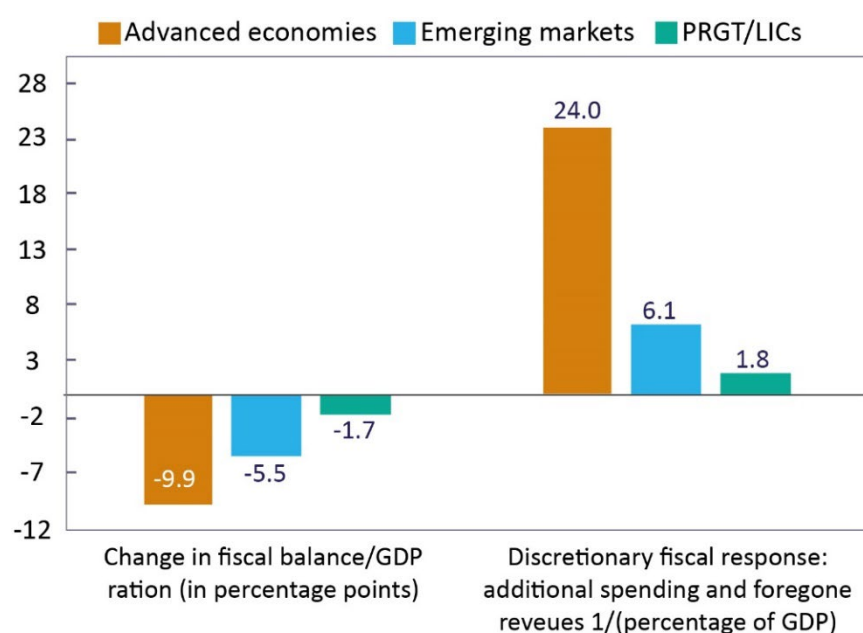
The number of working hours lost in 2020 was four times greater than during the 2008–09 financial crisis (ILO, 2021). The COVID crisis has deepened and rendered more painful the harmful consequences of the informality of labour markets in EMDEs. The crisis brought about massive job destruction, especially in sectors where people worked without contracts (informally) or with fixed-term, short-duration contracts. Workers in these sectors are at the lower end of the income distribution, so the loss of these jobs has magnified income disparities and inequality in urban areas.

EMDEs have been much more constrained in their ability to undertake countercyclical fiscal spending in response to the pandemic. As shown in Figure 1.1 below, whether measured in changes in fiscal balance or discretionary spending, the fiscal response as a share of GDP has been much lower in EMDEs than in advanced economies and even lower in low-income/PRGT¹ countries. This imbalance in fiscal responses has been amplified by the exceptional monetary response of central banks in major advanced economies.

While the initial COVID-induced recessions were less steep in most EMDEs than in the United States or the Eurozone, the recovery is likely to be much slower and the economic scarring much deeper in EMDEs. Growth rebounded in 2021 to 5% for advanced economies and 6.5% for EMDEs (including China), but the IMF's World Economic Outlook (WEO) update of October 2021 showed the divergence between countries deepening, driven by differences in vaccine availability and policy support. The outlook for advanced economies had been substantially upgraded and in fact looked better than it had before the crisis. Meanwhile, in contrast, per-capita incomes in lower middle-income countries (LMICs) and low-income countries (LICs) were expected to be substantially lower on a sustained basis than was projected before the crisis (Figure 1.2).

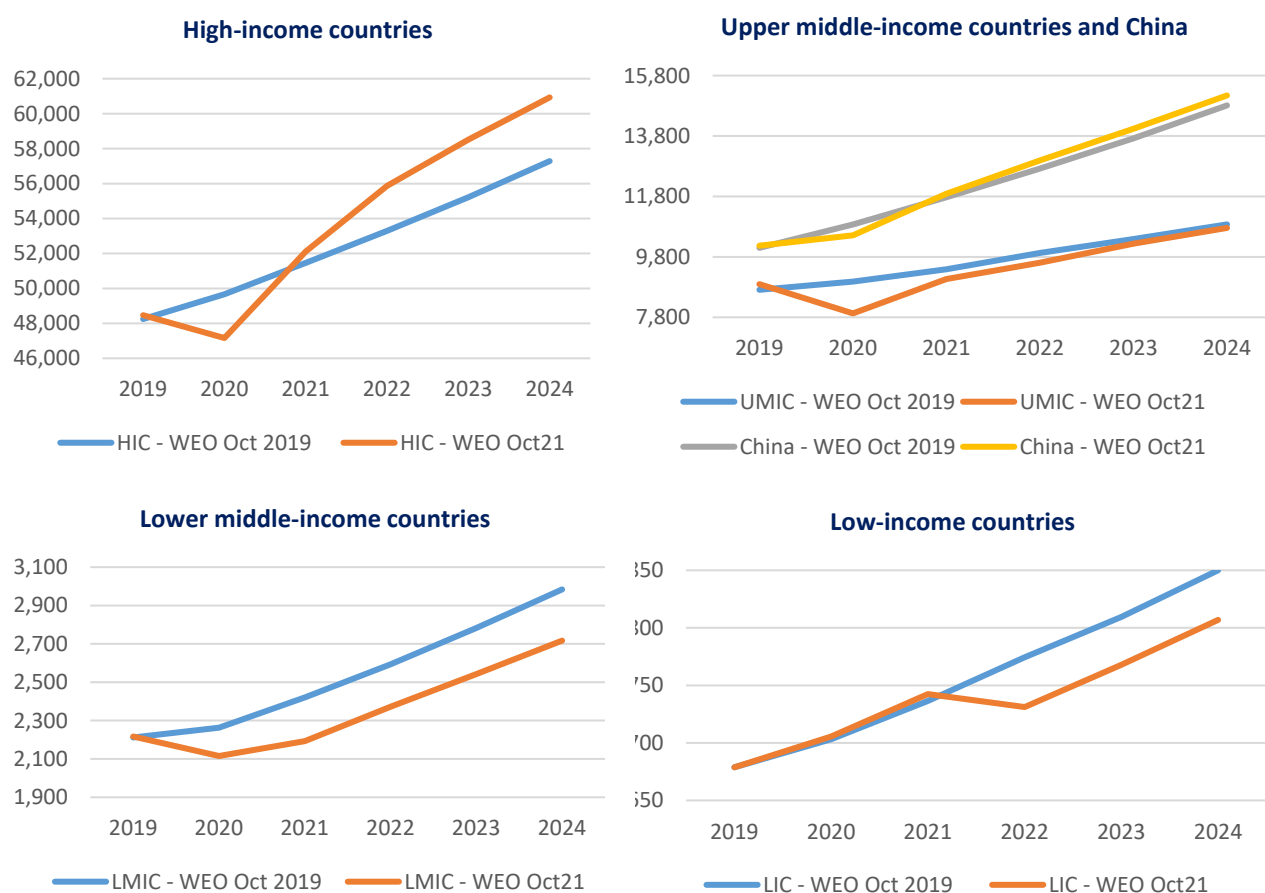
¹ Countries eligible for support from the IMF through the Poverty Reduction and Growth Trust.

Figure 1.1. Fiscal response to COVID-19 in 2020



Source: IMF Fiscal Monitor and World Economic Outlook databases; and IMF staff calculations.

Figure 1.2. A divergent and protracted recovery from COVID-19 – GDP per capita (US\$, current)

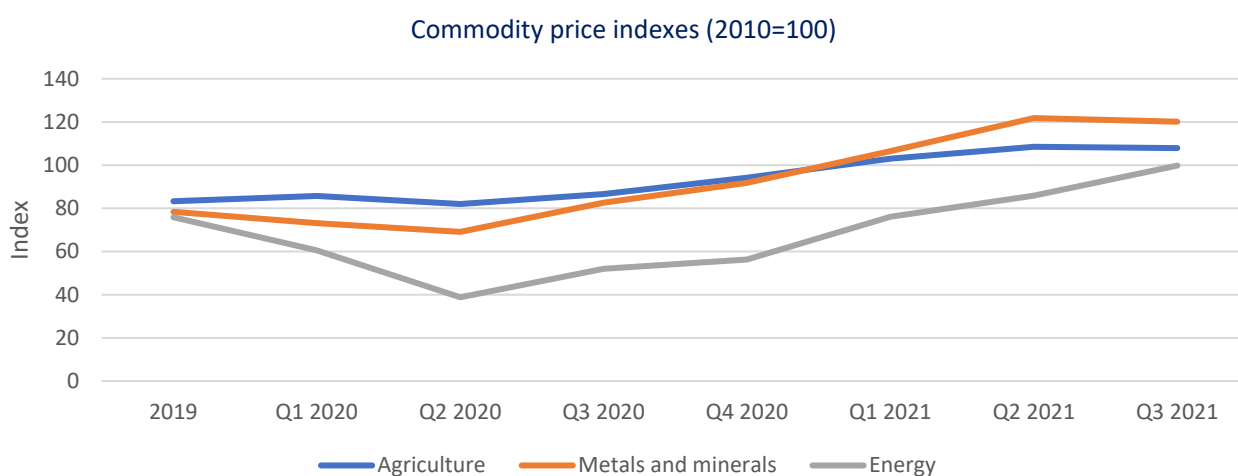


Note: WEO = World Economic Outlook [of the IMF]. Source: IMF (2019, 2021b)

However, the WEO updates of January and April 2022 (IMF, 2022a, b) portrayed a bleaker picture across all income groups. With the pandemic continuing to maintain its grip amid the spread of a new variant and uncertainties ahead, forecasts for global growth in 2022 have been revised downward 1.3 percentage points from previous expectations (ibid.). World Bank projections now indicate that output and investment will return to pre-pandemic trends in advanced economies in 2023, whereas for EMDEs growth trajectories are not strong enough to return investment or output to pre-pandemic trends over the same time horizon (World Bank, 2022a).

One outcome of the initial recovery in advanced economies and China was a recovery in commodity prices. As shown in Figure 1.3, commodity prices, except for oil, returned to where they were at the peak of the commodity super-cycle. If sustained, this would have a strong ameliorative impact on developing regions, especially in Latin America, Africa and the Middle East.

Figure 1.3. Recovery in commodity prices



Source: World Bank (2021b)

2. From rescue to recovery to sustained transformation: a big investment push strategy for EMDEs

2.1. Rescue: the immediate response to the COVID-19 pandemic

EMDEs are still far from overcoming the pandemic. Although there are large variations in the incidence of the virus and in the rollout of vaccines, most EMDEs are still contending with the health challenges arising from the pandemic and its economic and social costs. The main immediate challenge is access to vaccines and treatment. The binding constraint is the scale of global production (concentrated in advanced economies and a few emerging markets) and the sharing of vaccines, which remains highly inequitable. As vaccines become available, financing will be needed to cover their costs, especially in low-income countries. The estimates of the amount of financing that will be needed to ensure universal access to vaccines are in the range of US\$50–75 billion. Depending on the duration of efficacy of the vaccines, and the emergence of new strains, additional and recurrent financing may be needed. A financing strategy to stop the pandemic by the end of 2022 by vaccinating up to 70% of developing countries' populations has been set out by The Rockefeller Foundation (2021), recognising that ending the pandemic for all is crucial for a global recovery.

In addition, the cost of better pandemic preparedness is estimated at \$75 billion over the next five years (or \$15 billion annually). This would require doubling current preparedness funding levels to boost infectious disease surveillance, the resilience of national health systems, and global capacity to supply and deliver vaccines (G20 High Level Independent Panel, 2021).

EMDEs and especially LICs need to boost public spending to deal with the human and social costs of the pandemic. Many countries have been forced to cut back sharply on public services and social spending as a result of shrinking fiscal space. IMF staff estimate that LICs/PRGT countries need a boost in public spending of around 2% of GDP to reach pre-pandemic income levels, amounting to around \$250 billion between 2021 and 2025 (IMF, 2021c). A smaller, but still significant, boost of 1% of GDP is needed in other EMDEs to respond to the after-effects of the pandemic until recovery has set in. If the recovery is delayed, additional costs will be incurred to protect people and jobs.

2.2. Recovery: towards a robust and sustainable economic recovery

While the decline in GDP growth in advanced economies in 2020 was greater than in EMDEs, the collapse in investment has been much greater in EMDEs and much steeper than it had been in the aftermath of the global financial crisis of 2009 (Figures 2.1 and 2.2). In particular, LICs that had been barely impacted in 2009 are experiencing the largest investment declines. Investment recovered quickly in EMDEs after the global financial crisis; this time there is a major risk of a protracted investment slowdown in both low- and middle-income countries following a decade of declining investment growth (Figure 2.1).

Figure 2.1. Deceleration of investment growth after 2009

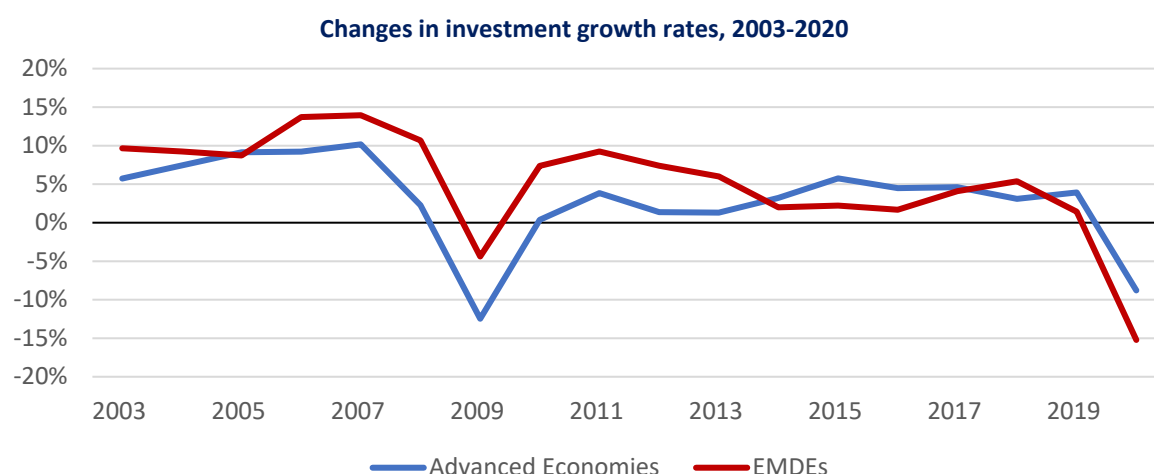
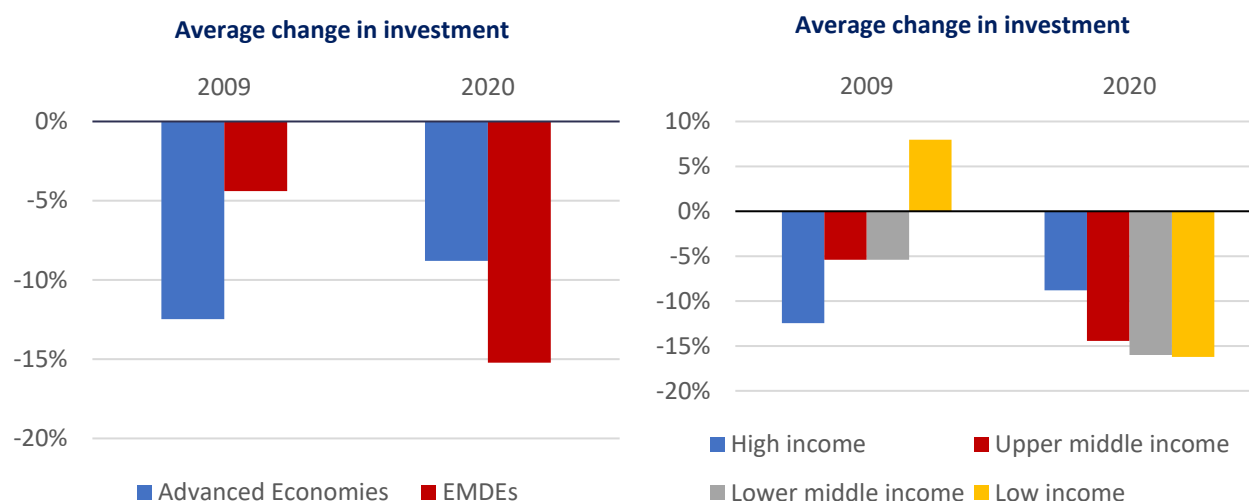


Figure 2.2. Changes in investment rates, 2009 vs. 2020



Against this backdrop and the challenges outlined above, the strategy for recovery of investment in EMDEs must accomplish three objectives:

- Restore investment to its pre-pandemic *levels*. Given the declines since the pandemic, this would mean raising investment by 2–3% of GDP in 2021–22.
- Raise investment *growth rates* to the levels of the 2000–2010 period, and enhance the productivity of investment, to enable EMDEs to return to a trajectory of income convergence with advanced economies (or middle-income countries for the LICs). This would mean increasing investment by 2–3% of GDP from pre-pandemic levels.
- Ensure that the scale and quality of the investment recovery puts economies on a path to meet the development and climate transitions necessary over the coming three decades. These investment requirements for transformative growth are discussed below.

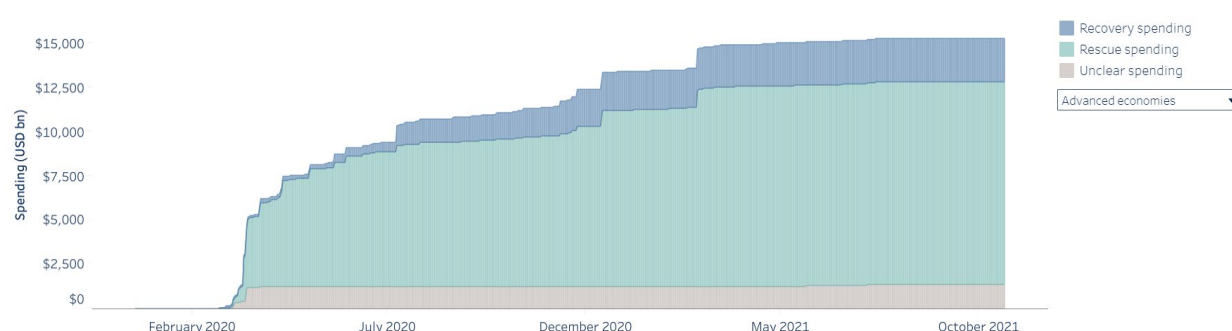
EMDEs are at an early stage in the implementation of their recovery programmes. According to the data of the Oxford Global Recovery Observatory tracker, by mid-2021, countries had committed \$19.74 trillion in additional spending in response to COVID-19, of which only \$3.38 trillion was for recovery spending, and of which only \$0.5 trillion is likely to reduce greenhouse gas emissions

(O’Callaghan et al., 2021). There are large disparities between advanced economies and EMDEs in terms of overall, recovery and green spending (CoFM, 2021). Advanced economies announced stimulus expenditure measures amounting on average to 25.9% of GDP, more than 20 times higher on a per-capita basis than EMDEs, who have announced spending worth only 11.1% of GDP. The EMDE average is heavily skewed upwards by China, which has implemented the largest stimulus among EMDEs. In some of the least developed countries, stimulus spending has been negligible (O’Callaghan et al., 2021).

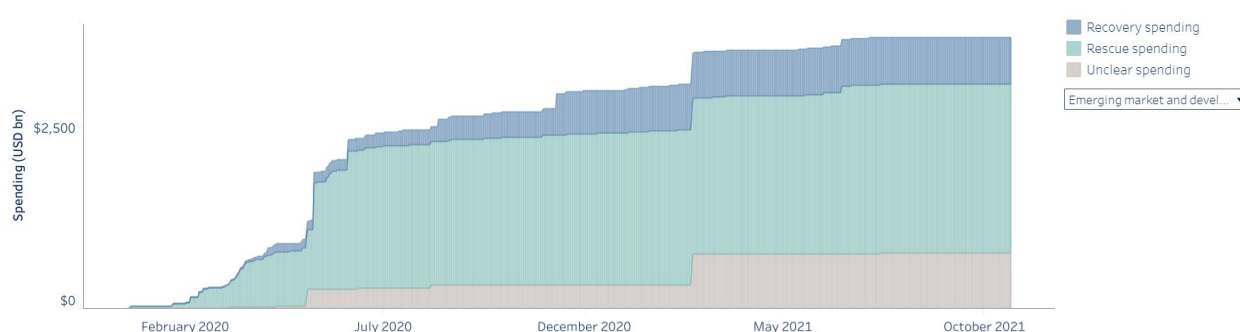
As discussed in a separate report (Stern, 2021), the task for the G7 and other advanced economies is to boost spending on high quality investments to drive a strong recovery and accelerate the transition to a low-carbon, climate-resilient economy. The vast majority of green spending so far comes from a small number of high-income countries, particularly in the EU. In these countries, green spending is also spread across a wider range of policy areas than in EMDEs, where most green spending is narrowly focused on clean energy and natural infrastructure projects (O’Callaghan et al., 2021). Nature and biodiversity, however, are particularly neglected in stimulus packages across all countries, with only 1% of all recovery spending dedicated to these areas (Vivid Economics, 2021).

Figure 2.3. Rescue and recovery spending in advanced economies and EMDEs, Feb 2020–Oct 2021

Advanced economies



EMDEs



Source: O’Callaghan et al. (2021)

2.3. Sustained transformation: an investment push to deliver on development and climate

The 2020s will be a crucial decade for development and climate. As a recent paper argues compellingly, “Managing climate change and overcoming poverty are the defining challenges of this century. They are deeply interwoven: if we fail one, we fail on the other” (Lankes et al, 2022). There is a real opportunity to make a breakthrough on both development goals and climate, building on the progress achieved by EMDEs and new technological options that can deliver better results. EMDEs 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 human capital development.

Raj Shah has called for a new global charter to respond to the multiple crises we are facing, including the pandemic and climate change, based on stepped-up up commitments from developed countries, developing countries, international financial institutions and their shareholders, and private-sector and philanthropic leaders (Shah, 2021).

The imperative to address the interrelated challenges of poverty, inequality, COVID-19, and climate change simultaneously and systematically is also the starting point for the World Bank’s Green, Resilient, and Inclusive Development (GRID) approach, which pursues poverty reduction and shared prosperity through a sustainability lens. The GRID approach recognises that urgent investments at scale are required in human, physical, natural and social capital, to address structural weaknesses and promote economic growth (World Bank, 2021f).

Development and demographic transitions

The starting point for assessing development needs are the SDGs. Several assessments have been made of the development spending and investment requirements for achieving the SDGs in EMDEs. The findings of two studies that have undertaken the most comprehensive assessments, that by Gaspar et al. (2019) and Kharas and McArthur (2019), suggest that the biggest investment needs are for human capital and sustainable infrastructure.² The absolute needs will be dominated by middle-income countries but the requirements as a share of GDP will be more challenging in low-income countries.

Gaspar et al. (2019) estimate that an additional \$0.5 trillion of spending per year is required by 2030 for LICs to achieve the SDGs and \$2.1 trillion per year for EMEs to do so. For emerging market economies, the average additional spending required represents about 4 percentage points of GDP. The challenge is much greater for low-income developing countries, with the average additional spending representing 15 percentage points of GDP. Kharas and McArthur (2019) assess total SDG spending needs for EMDEs to be \$7.2 trillion in 2025 and the aggregate SDG needs gap – after projected increases in domestic revenues are taken into account – to be \$922 billion in 2025 or 3.5% of the EMDE GDP (\$223 billion for UMICs, \$549 billion in LMICs and \$150 billion in LICs).

It is firmly established that sustainable infrastructure is crucial for growth and development (e.g. Bhattacharya et al., 2016). Despite its crucial importance, the world is not delivering on the scale and quality of infrastructure that will be needed to meet its growth and development goals. There is a longstanding and broad recognition that there are pervasive and persistent sustainable

² Kharas and McArthur (2019) show that social and related spending is the third most important component, but this is excluded from our analysis.

infrastructure gaps across countries, both advanced economies and EMDEs (US Council of Economic Advisors, 2016). Large infrastructure gaps exist in EMDEs due to a range of factors, including incomplete network coverage, rising needs to support development and higher growth, and ongoing structural change, especially urbanisation.

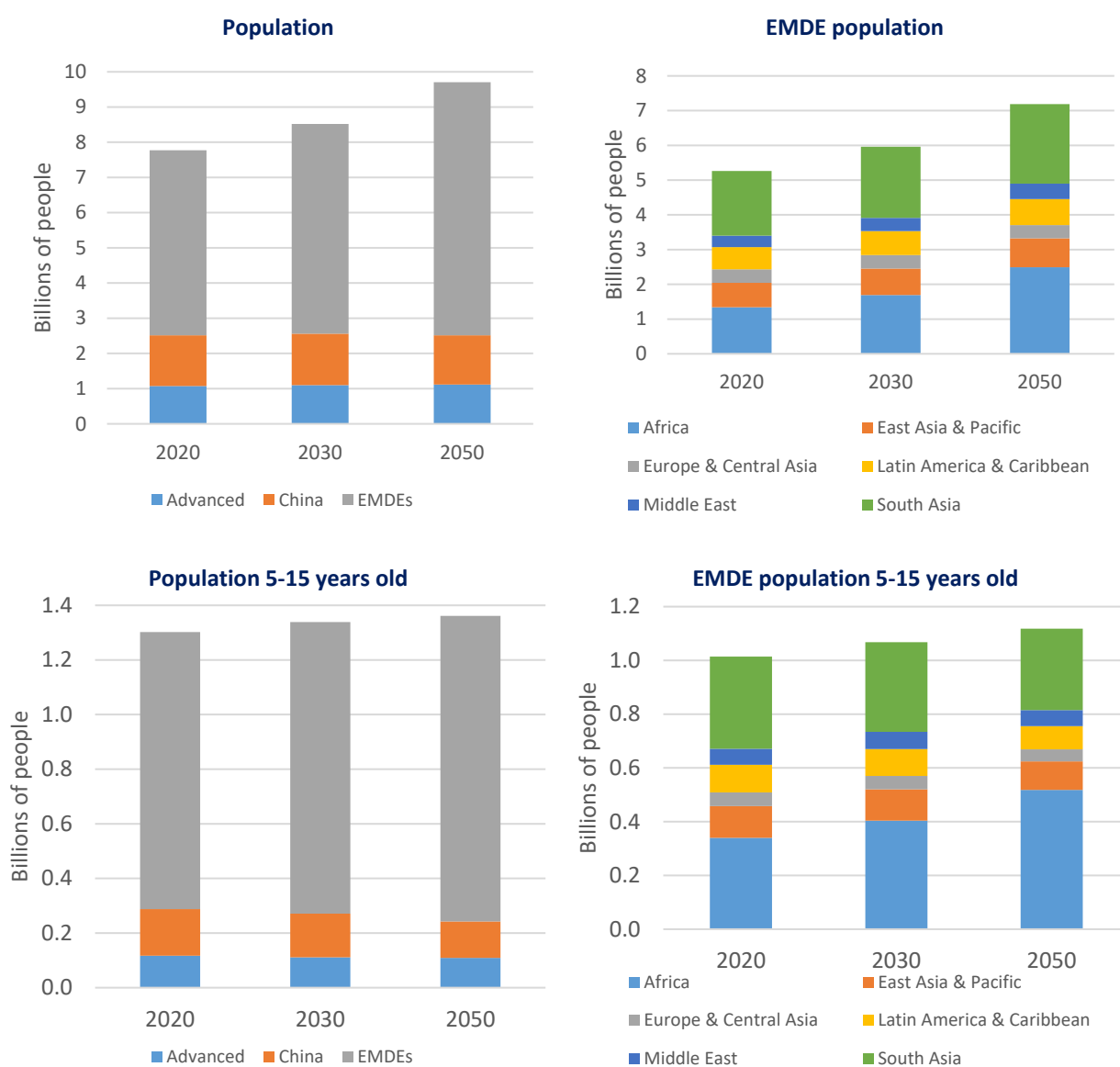
All countries, but particularly EMDEs, have been unable to overcome a range of impediments that prevent them from transforming large sustainable infrastructure needs and opportunities into realised demand. Countries are often unable to translate their needs and opportunities into a concrete pipeline of projects, and a significant proportion of new investment is not as sustainable as it should be. This is due to the inherent complexities of infrastructure investment (long-term nature, interconnectedness, social impacts, complex decision-making process and policy-induced risks and positive and negative externalities), and policy and institutional impediments. In addition, despite the large pools of available savings, mobilising long-term finance at reasonable cost to match the risks of the infrastructure project cycles and ensuring that finance is well-aligned with sustainability criteria remains a widespread challenge (Bhattacharya et al., 2019).

Beyond the SDG targets for 2030, investment strategies and financing requirements need to anticipate the historic demographic transitions over the coming three decades. The world population is projected to increase by 1.9 billion between 2020 and 2050, with all of that growth taking place in EMDEs other than China – and in all developing regions but especially Africa and South Asia. That means that the population of EMDEs will increase by 35% over the next three decades; more than 80% of young people aged 5–15 during this period will be living in EMDEs other than China. EMDEs and especially LMICs and low-income countries are starting with very low levels of expenditure on the key SDGs and with great imbalance in incomes and wealth. Per-capita incomes of LICs are one-seventieth those of advanced economies. Total per-capita wealth of EMDEs is one-fifteenth of advanced economies' and per-capita produced capital one-twentieth that of advanced economies (World Bank, 2018).

Between 1995 and 2018, all income groups saw increasing total wealth and per-capita wealth. However, 26 countries experienced a decline or stagnation in per-capita wealth as population growth outpaced net growth in asset value, especially in Sub-Saharan Africa, in countries such as the Democratic Republic of Congo, Niger and Zimbabwe (World Bank, 2021c). For low-income countries wealth per capita grew by less than the global average over this period (22% compared with 44%), meaning that low-income countries are falling further behind the rest of the world (ibid.). The anticipated demographic transition and efforts at convergence will drive the need for an exceptional investment push in all forms of capital – human, social, physical and natural.

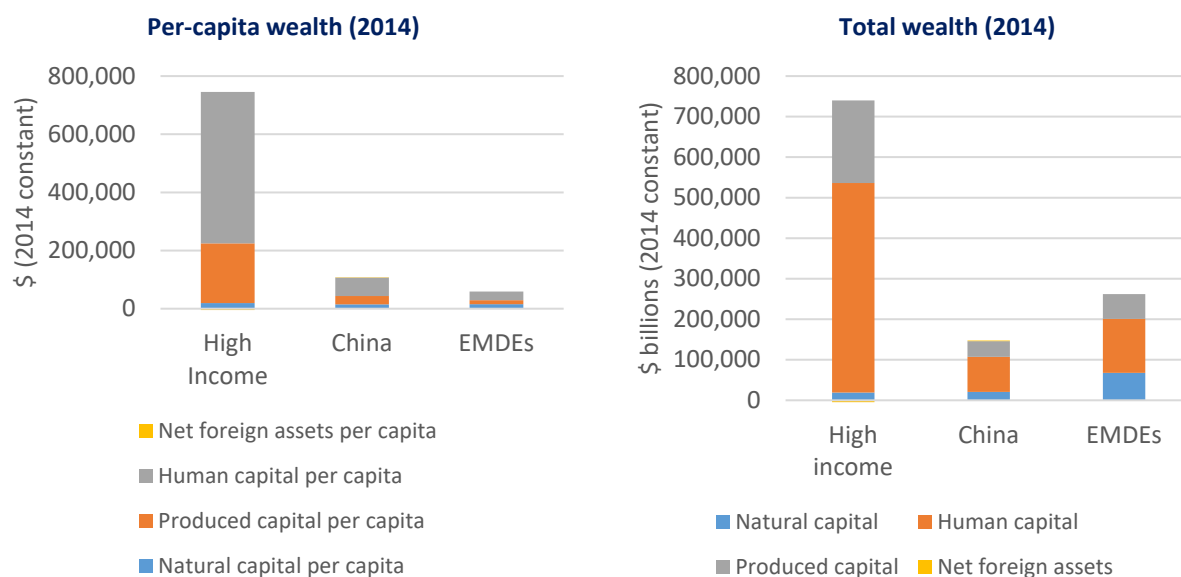
In particular, human capital is starting from a low baseline in many EMDEs, and the growing youth population means there will be large health and education needs as a result. Human capital investments are, therefore, essential to an inclusive growth agenda. Moreover, such human capital investments are complementary to the investments in sustainable infrastructure necessary to meet development goals. Returns to human capital are higher than infrastructure projects, but take 15-plus years to emerge, well beyond the political time horizon of many government officials (Buffie et al., 2020). This leads to an underinvestment in human capital, which hampers long-term GDP growth. An IMF study finds that the long-term gains from infrastructure are reduced with lower human capital investments (Buffie et al., 2020). The study concludes that the optimum share of human capital in any investment package is around 50%.

Figure 2.4. Demographic transition



Source: Our World in Data (2021b)

Figure 2.5. Imbalance in wealth



Source: World Bank (2018)

Responding to climate change and restoring nature

The urgency and opportunity for climate action is becoming ever clearer. The IPCC's *Special Report on Global Warming of 1.5°C*, published in 2018, played a key role in shifting public opinion and understanding by highlighting the already evident impacts of climate change, the grave risks of global warming beyond 1.5°C, and the very limited time window to arrest irreversible climate change. Greater and faster climate change affects the environment more, in a highly non-linear way. For example, warming of 2°C instead of 1.5°C would essentially wipe out all coral reefs on this planet, instead of 70–90% of them, and expose 37% rather than 14% of the population to extreme heat at least once every five years. Temperature rise of more than 2°C significantly increases the probability of even larger, nearly unpredictable and likely irreversible, environmental changes. We have seen this vividly this past year from heat waves and wildfires in the US and Australia, flooding in Europe, China, India and elsewhere, and more frequent and highly destructive storms from the Philippines to the Caribbean. The IPCC's 2021 report documents the rapid acceleration of climate change, dramatically narrowing the window for limiting global warming from 2°C to 1.5°C and underscoring the imperative to reach net-zero emissions by 2050. Despite recent new commitments from countries to cut greenhouse gas emissions, current emissions reduction pledges are not sufficient to limit warming to 1.5°C (Black et al., 2021).

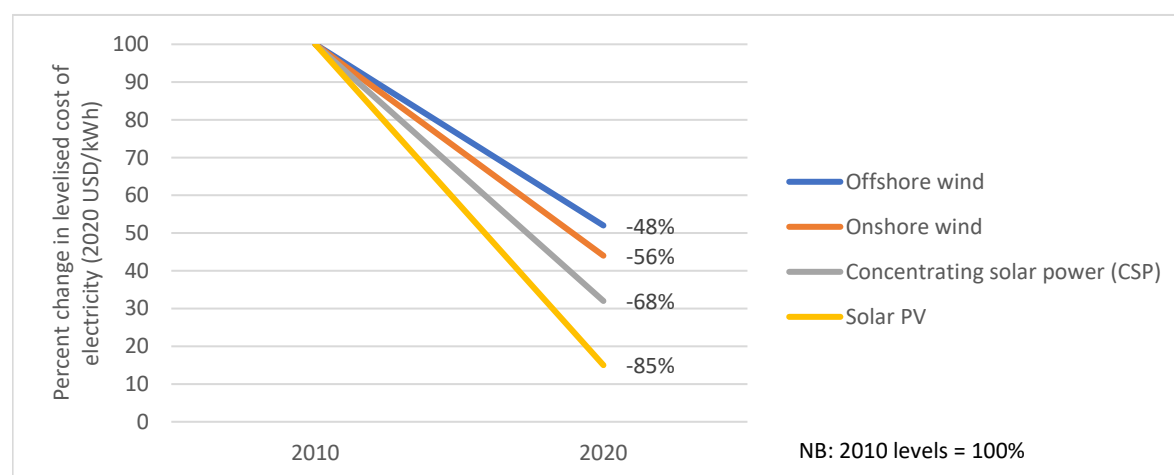
While the science of climate change is clear and compelling, there has also been a shift in the understanding of the economics of climate change. The costs and risks of climate change have been systematically underestimated. If unchecked, climate change can lead to hundreds of millions of displaced people, mostly in developing countries. Carbon-intensive growth also puts at risk jobs that will become stranded in the future, when polluting sectors will have to be rapidly retired to avoid catastrophic climate change. The more decarbonisation is delayed, the more disorderly future shocks to polluting sectors will be. Large numbers of jobs will become stranded, incomes will be lost, and wealth destroyed. Crucially, those who are set to suffer the most from climate change have contributed – and continue to contribute – least to it.

Meanwhile, decisive climate action has become increasingly attractive. Thanks to rapid technological advances, low-carbon solutions are now less costly than fossil fuel-based investments across a broad segment of economic activity (see Box 2.1). The evidence mounts that climate action is not a cost in terms of growth, development and jobs but rather an attractive path to more inclusive, resilient and sustainable growth (Stern, 2021). It can help the world economy recover from the effects of the COVID-19 pandemic by providing an immediate impetus to economic demand, creating millions of jobs, training, and investment opportunities. Over the medium term, it can spur innovation and discovery and create new sources of economic growth. It would also lift many millions out of poverty and reduce inequalities, while delivering multiple environmental co-benefits, notably clean air and water, and preserved natural wealth (Stern, 2015; Meckling and Allan, 2020). Over the longer term decisive action is the only path to a sustainable future by stabilising climate and making our economies more resilient. Indeed, as the New Climate Economy has underscored, it can “unlock the inclusive growth story of the 21st century”.

Box 2.1. Technology advancement in low-carbon solutions

The pace of technology advancement and cost reductions has been much faster than expected, despite fairly modest policy support (see Figure 2.6). Renewables with storage are now competitive (without subsidy or carbon price) in many parts of the world and capital costs for renewables continue to fall much faster than those for conventional technologies. We have seen strong increasing returns to scale in both technologies and discoveries, much of it unanticipated. See, for example, the work of the Energy Transitions Commission on the potential of different technologies (e.g. ETC, 2018).

Figure 2.6. Renewable power technologies: cost decrease since 2010



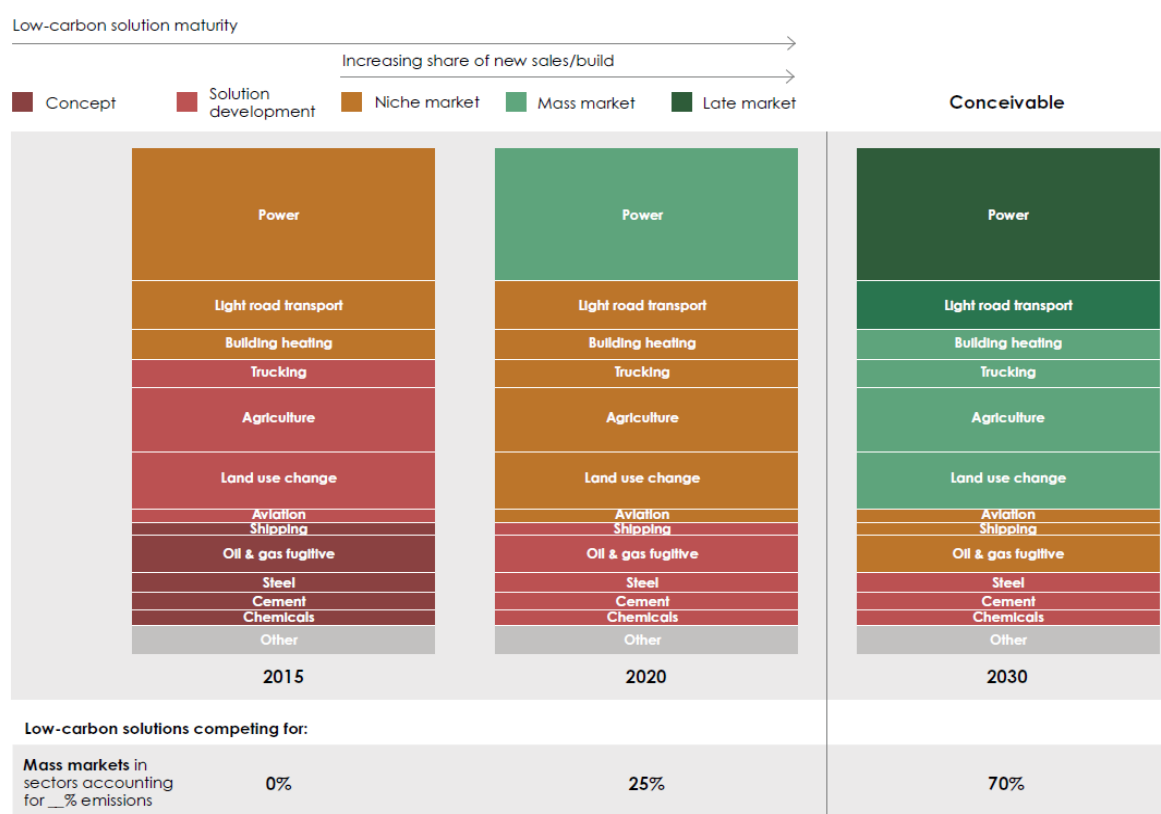
Source: IRENA (2021a)

The shared direction of travel since the Paris Agreement has given impetus for companies to invest and innovate, and for the markets for zero-carbon solutions to start scaling up – from electric vehicles to alternative proteins to sustainable aviation fuels.

Systemiq finds that these trends have created the conditions for sectors to move towards tipping points where low-carbon solutions can out-compete legacy, high-carbon businesses (Systemiq, 2020). Consequently, by 2030, low-carbon solutions could be competitive in sectors accounting for nearly three-quarters of emissions; this is up from one-quarter today (electricity) and from no sectors five years ago (see Figure 2.7).

There is significant potential for the co-creation of breakthrough technologies through bilateral and multilateral initiatives, including in clean energy and storage, cooling, sustainable transport, energy efficiency, city design and sustainable agriculture.

Figure 2.7. Low-carbon solutions by sector: progress since the Paris Agreement and looking forward to 2030



Note: sectors sized according to 2019 emissions impact

Source: Systemiq (2020)

Against this backdrop, the world is coalescing behind three interrelated strategic objectives:

1. Setting a path to reach net-zero emissions by 2050 for the world as a whole, to limit global warming to 1.5°C above pre-industrial levels.
2. Taking much more aggressive actions on adaptation and resilience given the already evident impacts and mounting risks from climate change.
3. Protecting and restoring natural capital given the large and accelerating losses and the importance for human and planetary security of reversing these.

EMDEs will have a central role to play in achieving all three objectives. While the drive to net-zero emissions has correctly focused on advanced economies, given their high aggregate and per-capita

emissions, future emissions will be driven by China and other large EMDEs. Currently, advanced economies, China and other EMDEs each account for roughly one-third of global emissions. Baseline projections of business-as-usual scenarios show that emissions for advanced economies would remain stable at present levels through 2050, whereas emissions for China and EMDEs would roughly double by 2050. The G7, including the EU, has committed to reaching net-zero emissions by 2050 and has set targets to cut emissions by 40–60% by 2030 towards that goal. Even if advanced economies reach net-zero by 2050, or negative net emissions as they must be pressed to do, China and EMDEs would reach emissions of 125% of the present global total based on current trajectories. A path to achieving net-zero emissions by these economies in the 2050–2070 timeframe is therefore of crucial importance.

Developing countries point to their huge development needs and generally far lower per-capita emissions in making the case for extending the timeframe to reach net-zero emissions. On the other hand, since most of the produced capital including infrastructure has yet to be built, EMDEs have the opportunity to avoid the mistakes of the past and benefit from not just the technological possibilities that are now available but also from further advances and cost reductions that are in prospect with the transition to a low-carbon economy. The question that then presents itself is: what investment will EMDEs require to embark on a sharply accelerated low-carbon transition?

EMDEs are also crucial to the adaptation and resilience agenda. EMDEs in general, and low-income and small island developing states (SIDS) in particular, will be much more affected than developed countries by climate change, and their capacity to withstand the shocks is much weaker. There is great urgency, therefore, to bolster the resilience of existing and future infrastructure assets and make the necessary investments to adapt to climate change.

EMDEs also account for the vast preponderance of natural capital that is crucial for climate and biodiversity: they contain 70% of the world's forest cover and 80% of the biodiversity pool. Therefore, they need to be at the forefront of efforts to protect and restore natural capital.

EMDEs are unlikely to commit to a global agenda if the commitment comes at a cost to their development prospects. A complement to building sustainable infrastructure is building the human capital to use it. Governments in EMDEs are already under-investing in human capital; they will not shift resources towards other investments to move to a low-carbon economy without also providing for health and education.

Energy transition

The energy sector is at the heart of the transition to a net-zero economy. The roadmap for the global energy sector to reach net-zero by 2050, published by the International Energy Agency in 2021 (IEA, 2021a), calls for a total transformation of the energy systems that underpin our economies.

The necessary transformation is underpinned by three pillars:

1. All new electricity demand must be met by renewables.

As discussed above, from a development perspective, stepped-up investment in sustainable energy infrastructure is crucial to respond to growing energy demand from the developing world. Climate considerations further accelerate the need for the frontloading and scaling-up of investment in renewable energy generation and storage.

Many clean energy technologies are now cost-competitive with their fossil-fuel based counterparts. Solar, wind and batteries have declined in cost by 50–65% since 2015 alone (BNEF, 2020), and as of

2021, solar/wind were the cheapest form of new-build generation in countries representing over 77% of GDP (Systemiq, 2021a). Given that most capital stock in EMDEs is still to be added, the investment required to shift electricity generation from fossil-fuel-based to renewable is not incrementally large. However, additional investment in the grid system will be required to integrate more renewables (IEA, 2021a; IRENA, 2021b). Distributed renewable power generation can mitigate some of this cost because complete grids are not needed everywhere.

Although the incremental cost of meeting new electricity demand with renewable energy technologies versus fossil fuel energy is not large, the balance between CAPEX and OPEX is different. Renewable energy technologies require significant upfront capital investment but deliver savings in terms of operating costs, whereas the fuel costs associated with fossil fuel energy generate ongoing operating costs (Zhou et al., 2021). Much of the investment required for the energy transition is expected to come from the private sector, but the high cost of private capital can be a barrier to investment in capital-intensive renewable energy generation projects in EMDEs.

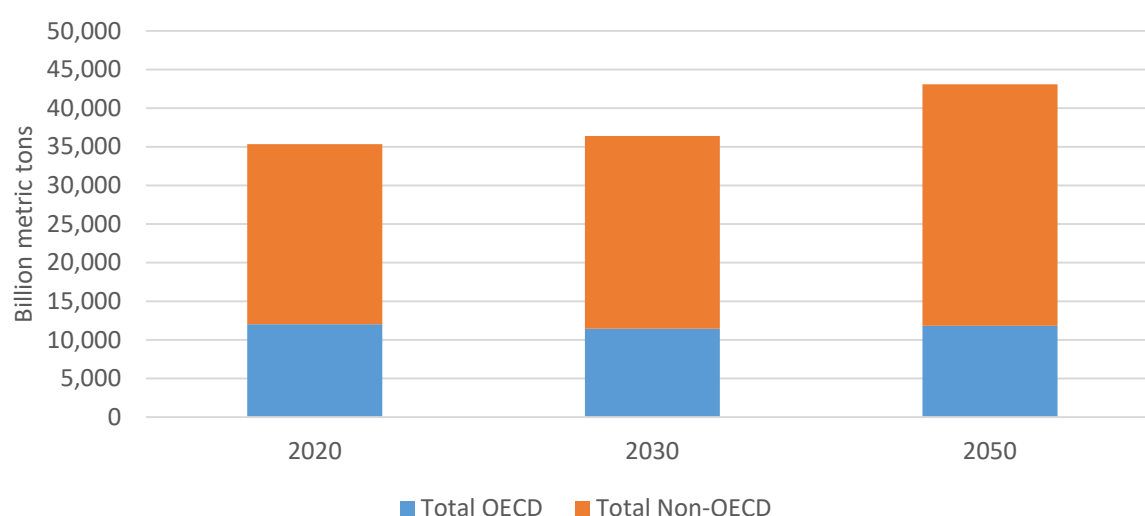
In 2022, the imperative of the energy transition is situated against a backdrop of war in Ukraine and economic sanctions against Russia, which are causing oil and gas prices to soar. Concerns about energy security and energy affordability are front of mind for policymakers across the world. This context has enhanced concerns about countries' readiness for the transition to clean energy and has led to the re-emergence of calls for the use of natural gas as a bridge fuel. Although natural gas is less polluting than coal in terms of combustion emissions, the fugitive emissions released during its extraction and transportation have a powerful global warming potential (ETC, 2021a) and the available greenhouse gas emissions budget of the planet remains unchanged. Therefore it remains the case that meeting development and climate objectives together requires a big push in investment in renewables plus energy storage. The belief that a slow and gradual transition from dirty fossil fuels to clean renewable power will be safer and more affordable is persistent but incorrect (Pope, 2021). The best response to uncertainty about the supply of fossil fuels is a big-push investment in the cheapest, most secure and least volatile energy sources. Solar PV or wind is now the cheapest form of new power generation in countries representing 77% of global GDP (Systemiq, 2021a). Fossil fuel prices are notoriously volatile, whereas renewable power displays far greater price stability. Wind and solar power generation capacity can also be constructed much faster than fossil fuel capacity, to meet shortfalls in generation.

The opportunities for investment in low-carbon and resilient electricity generation and storage and electricity networks in EMDEs have been estimated at \$0.49 trillion per year over the period 2020–2030 (2% of EMDEs' projected GDP in 2025) (Systemiq, 2021b).

2. Existing fossil fuel-based electricity generation must be replaced by renewable power.

To make the leap away from greenhouse gas-emitting fossil fuels, the phase-out of existing fossil fuelled power generation capacity will need to be accelerated. The magnitude of the incremental cost of achieving this phase-out will depend on its pace. Replacement of existing fossil fuel power generation will require large amounts of new renewable electricity capacity in some countries. However, there will also be some savings. Ending investment in fossil fuel production saves \$300–500 billion per year globally (IEA, 2021c).

Figure 2.8. Energy-related carbon dioxide emissions



Source: U.S. Energy Information Administration (2019)

Phasing out coal

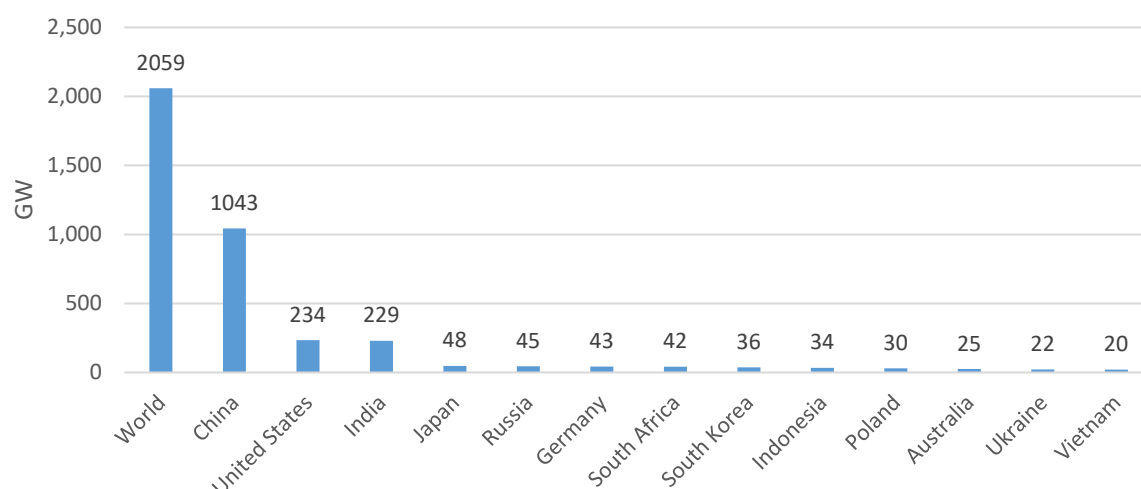
Phasing out coal-based power is the low-hanging fruit of the energy transition, but where coal plants are not nearing the end of their technical lifetime, this requires significant additional investment, both in new renewables to replace the existing capacity and in the decommissioning of coal plants. Solar and wind capacity will need to increase from 1,400 GW today to 17,000 GW by 2040, globally, with two-thirds of this new solar and wind development in EMDEs (IEA, 2021a).

The investment required to phase out coal is concentrated in just a few countries that have been building new coal plants recently to fuel their growth, namely China, India and much of South-East Asia (Systemiq, 2021b). More than 75% of the coal capacity in China and India was built within the past 15 years, meaning it will still be within its technical lifetime by 2050 (ETC, 2021b). The value of potentially stranded coal-fired power plants that must be retired or repurposed by 2040 is estimated to be US\$1 trillion,³ with 89% of the global capital at risk of being stranded in coal-fired power plants being in the developing world (World Bank, 2021g).

For coal-consuming countries the magnitude of additional investment needed for the push to a net-zero economy could be significantly greater than for other EMDEs. For China, it will take a huge amount of investment to accelerate the phase-out of coal because of the large number of existing coal plants it has (Figure 2.9).

³ World Bank estimates. Costs would include the remaining financial value of the asset (although the economic value would be lower), the costs of decommissioning coal-fired power plants and the costs of social and job dislocation. This will be country specific and need further analysis and specification; estimates vary widely.

Figure 2.9. Operating coal plants (January 2021)



Source: Global Energy Monitor (2021)

3. Energy demand must be transformed.

Fossil fuel energy must be replaced by zero carbon energy in all end-uses. This switch will be driven by the electrification of energy end-uses where possible, including in transport, buildings, homes and industry: the ‘electrify everything’ agenda. In cases where electrification is not feasible, green hydrogen will play a critical role. The electrification of end-uses and the production of green hydrogen both rely heavily on the availability of zero-carbon electricity and so the transformation of energy demand also has implications for the power sector. For example, it has been suggested that electrifying the world’s car fleets could double electricity consumption (Reuters, 2020). Energy efficiency measures have a crucial role to play by minimising energy demand growth, but significant investment in additional renewable electricity generation capacity will be required to meet the increased demand for electricity.

The net additional investment needed to transform energy demand in the push to net-zero by 2050 will be concentrated in key sectors: energy efficiency in buildings and industry, and transport.

Energy efficiency in buildings and industry

Net-additional investment in the buildings sector associated with the drive to net-zero will be largely accounted for by upgrading the energy efficiency of buildings. In advanced economies, this entails large-scale retrofitting of the existing building stock. In EMDEs, building replacement rate is higher and the rate of retrofits slightly lower, given the more primitive existing stock (IEA, 2021a). For EMDEs, the investment opportunity in building energy efficiency has been estimated at \$0.09 trillion per year over the period 2020–2030 (0.37% of EMDEs’ projected GDP in 2025) (Systemiq, 2021b). Net additional investment will also be required to improve the energy efficiency of industrial processes and could amount to \$0.17 trillion per year over 2020–2030 (0.69% of EMDEs’ projected GDP in 2025) (ibid.). A large share of this investment will be in highly industrialised emerging markets (ibid.).

Transport

Decarbonisation of the transport sector will require both a modal shift to more energy-efficient forms of transport (for example, from road to rail) and the electrification of most land transport (IEA,

2021a). Significant investment is needed to achieve these objectives, particularly in the developing world where the investment gaps in transport infrastructure are largest. However, the more significant incremental investment need in the transport sector in EMDEs will be driven by the increase in demand resulting from development. In EMDEs, low-carbon and resilient investment opportunities in electric vehicle charging infrastructure, sustainable aviation fuel CAPEX, aviation R&D, and green shipping fuel and R&D have been estimated at \$0.01 trillion per year over the period 2020–2030 (0.04% of EMDEs' projected GDP in 2025) (Systemiq, 2021b).

To accelerate the transition to net-zero, decisions about transport infrastructure investment need to be made early on, so that electric vehicle charging networks can be established and mass-transit systems can be integrated into city planning and expansion. This implies significant frontloading of investment.

Hydrogen

Green hydrogen production and end-use scales up dramatically in a net-zero by 2050 scenario. According to the IEA, hydrogen-based fuels would account for 13% of global final energy demand in 2050 (IEA, 2021a). This will require significant investment in production capacity. The global distribution of hydrogen production is speculative at this point, but potential is high in locations where renewable energy generation is cheap. In particular, South Africa, Namibia and Morocco could receive 10% and the Middle East 5% of global green hydrogen investment, if enabling conditions are in place (Systemiq, 2021b). The investment opportunity in hydrogen production and storage in EMDEs has been estimated at \$0.01 trillion per year over 2020–2030 (0.04% of EMDEs' projected GDP in 2025) (ibid.).

Taken together, these three pillars imply that a big-push investment – frontloaded and scaled-up – in sustainable energy infrastructure is a priority to deliver on development and climate goals.

Just transition

The energy transformation must not only ensure a just transition out of fossil fuels but also must 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, 2021h). 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. In advanced economies, a reprioritisation of resources could suffice. EMDEs, however, will need to spend more. In education, the challenge is to expand coverage of schooling and learning to include all children and young people. There is considerable potential to improve educational outcomes by cutting waste and corruption and improving community involvement and accountability. Additional resources are needed for in-service training, large-scale student assessments, internet access, and use of digital technologies (International Commission on Financing Global Education Opportunity, 2016). In health, the baseline of health system capacity and health performance is low and must be raised, especially in places subject to conflict and other health vulnerabilities (Stenberg et al., 2017).

In addition to the impacts of the shift away from fossil fuels, the impacts of policies such as carbon pricing and elimination of fossil fuel subsidies, especially on poor and vulnerable people and

communities, must be dealt with proactively. Improving energy access and affordability can make a strong contribution to inclusive growth.

With the right policies to support workers and facilitate structural change, investing in the just transition can achieve significant long-term economic and social returns. Research by the International Labour Organization (ILO) shows that a net gain of 24 million jobs could be achieved by 2030 (ILO, 2018) in the transition to a greener, circular economy.

The big-push investment required to expand and transform energy must also drive job-rich and inclusive growth.

Additional investments for climate resilience

Given the growing impacts of climate change and environmental degradation, substantial additional investments will be needed for adaptation and resilience and for protecting and restoring nature.

Adaptation and resilience

Due to the geographical location of EMDEs, many are set to experience the most extreme climate impacts soonest. They include countries with the greatest exposure to rising sea levels and flooding (including small island nations and countries like Bangladesh), those experiencing increasingly intense heat (a phenomenon exacerbated by the loss of local vegetation) and countries facing desertification (including those in the Sahel region of Africa). These countries are at the frontline of climate change despite having contributed the least to the problem. They need support to both adapt to the new climate normal and to mitigate the worst impacts (Kharas and Dooley, 2021).

Without appropriate adaptation action, climate change could push more than 100 million people below the poverty line by 2030 (Global Commission on Adaptation, 2019). Around 2 billion people live in dry lands vulnerable to desertification, a process that could displace 50 million people by 2030. Supporting populations to manage climate impacts can also avoid health costs. For example, after the 2003 heat wave killed 15,000 people in France, the government implemented preventive measures and warning messages. As a result, despite exceeding the temperatures experienced in 2003, the death toll from the 2019 heat wave was 10 times smaller (Ford, 2019).

There are significant challenges in estimating adaptation and resilience costs (Systemiq, 2021b), but UNEP (2020) provides a recent and comprehensive assessment of costs in developing economies. This includes the cost of planning, preparing for, facilitating and implementing adaptation measures, including transaction costs. Adaptation and resilience investment needs are a negligible share of GDP in advanced economies, around 0.5% GDP in emerging markets, but as large as 6–7% GDP in low-income countries (Systemiq, 2021b).

Restoring and protecting nature

Many developing countries are home to important natural resources and natural carbon sinks and will need help to continue to maintain these global public goods (Kharas and Dooley, 2021). Some G20 countries have pledged to preserve 30% of the earth's land and water resources by 2030 (G20 Environment Ministers, 2021); this will require a step-up in investments to protect and restore forests, peatlands, mangroves, seagrasses and saltmarshes. Halting deforestation and restoring 450 million hectares of natural land and forests would reduce annual net greenhouse gases by over 5 gigatonnes (Gt) by 2030. Further, forests are home to most of Earth's terrestrial biodiversity. They account for 80% of all known amphibian species, 75% of all birds and 70% of all mammals (IUCN, 2008). Protecting and restoring coastal and marine ecosystems could reduce annual net greenhouse gases by 0.9Gt by 2030 and by 1.4Gt by 2050 (High Level Panel for a Sustainable Ocean Economy, 2019).

Stable natural ecosystems also underpin productivity across sectors. The three largest sectors – agriculture, food and beverages, and construction – that are classified as ‘highly dependent’ on nature⁴ generate an estimated \$8 trillion in gross value added per year (World Economic Forum, 2020b). Protecting and restoring nature can also avoid health costs through improved air quality and reduced exposure to disease; for example, 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).

Emerging and developing economies (excluding 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 EMDEs’ projected GDP in 2025) (Systemiq, 2021b). Investment opportunities in this sector are highly country-specific. East Asia, Latin America and Africa have the most critical sites for sustainable land use and nature preservation. Sixty per cent of the investment in terrestrial ecosystems is in Brazil and Indonesia alone, based on the carbon mitigation potential of reduced deforestation, sustainable forest management and peatland conservation in these countries (ibid.). Indonesia accounts for 50% of the investment to protect and restore coastal wetlands (mangroves, seagrasses, saltmarshes) based on carbon mitigation potential (ibid.). The types of investment necessary include: land acquisition or leases; infrastructure and equipment, including vehicles, communication equipment, digital technology; investment in natural capital such as trees, seeds and foundation stocks of wildlife; staff salaries and training, including park rangers and ecotourism staff; and capacity-building and training for local communities. It is essential that these investments are made in the context of maturing markets for nature-based solutions, to avoid assets becoming stranded (Stern, 2021).

Assessing investment requirements

Various analyses have produced estimates for the magnitude of the investment needed to meet development and climate goals. Differing approaches have been taken to arrive at such estimates. Estimates of the investment required to close persistent gaps in spending on sustainable infrastructure, in both developed and developing economies, fall close to 2% of GDP (Bhattacharya, 2016; Stern, 2021). The IMF has reviewed estimates of the investment required to be consistent with climate targets (see Table 2.1 below), finding estimates of public investment needs in the range 2–3% GDP for the decade 2021–2030 (IMF, 2021d). Other assessments have focussed on the investment needed to accelerate the energy transition, particularly for individual countries. Here the implication is that investment will need to be scaled-up and frontloaded.

Recent estimates of the investment needed to achieve net zero by 2050 have been produced by McKinsey & Company (2022) and Vivid Economics (2021). While McKinsey’s headline figure of \$9.2 trillion per year from 2021–2050 under a net-zero by 2050 scenario appears large, the incremental investment need relative to the baseline ‘current policies’ scenario is a small fraction of the total at \$0.8 trillion per year. This analysis also considers spending on a broader range of assets than previous analyses, for example by including the cost of passenger cars and heat pumps, as well as capital expenditures in agriculture and forestry. Vivid Economics (2021) estimates that \$2.6 trillion per year from 2021–2025 and \$4.5 trillion per year from 2026–2050 will be needed to put the world on a path to net zero. These estimates can be considered against baseline investment of \$0.9 trillion per year from 2016–2021. Vivid Economics’ (2021) analysis suggests that the private sector could provide 70% of the investment globally.

⁴ Based on a methodology explained in World Economic Forum (2020b).

Table 2.1. Additional cumulative investment needs for the decade 2021 to 2030

Source	Sectors	Period considered	Public investment needed (% GDP)	Total investment needed (% GDP)	Climate target
OECD (2017)	All	2016–2030	1.9	6.3	2.0°C
McCollum et al. (2018)	Energy	2016–2050	2.1	7.1	1.5°C
Range of models			0.4 – 4.4	1.3 – 14.6	
IEA (2021a)	Energy+	2021–2030	2.7	9.9	Net-zero emissions by 2050
EIB (2021) – EU only	All	2021–2030	2.1	4.7	55% reduction by 2030
<p><i>Notes: The investment need is the difference between the investment required for the climate change scenario less investment in the baseline. The share of public investments in total investments is based on the historical average split. The estimate of average GDP for the denominator is taken from the G-Cubed baseline scenario (IMF, 2020b). Percentages of GDP for IEA (2021a) are calculated with each year's GDP separately. For the other sources average estimated GDP for 2021 to 2030 is used. (McCollum et al. 2018) compares six Integrated Assessment Models for which the average and, below, the range are reported. EIB (2021) refers to investment needs in the EU; all other publications refer to global investment needs.</i></p>					

Source: IMF (2021d)

In this paper, we assess the investment requirements for EMDEs other than China in four priority areas that are critical to their development and climate goals:

- Human capital (health and education)
- Sustainable infrastructure and the acceleration of energy transitions
- Adaptation and resilience
- The restoration of natural capital through sustainable agriculture, food and land use practices, and biodiversity.

This assessment draws on the aggregate analysis in these areas undertaken for a report for the G7 (Stern, 2021), work by the IEA (2021a) and other assessments of investments needed for the net-zero transition and climate resilience, as well as disaggregated analyses in prior studies, to build country-by-country estimates for investment requirements for 2025 and 2030, using 2019 as the base year.

In particular, the estimates for human capital investment are based on analysis by Kharas and McArthur (2019); the estimates for sustainable infrastructure investment build on analysis by Bhattacharya et al. (2016), incorporating the additional investment required for the energy transition, as discussed above; the 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 (2021b); and the estimates for adaptation and resilience investment are based on analysis by Systemiq (2021b). While there is great urgency to ramp up investments given the narrowing window arising from both climate and demographic transitions, we assume that it will take some time to build the absorptive capacity to scale up high quality investments in these priority areas.

These estimates are aggregated and summarised in Table 2.2, which shows a trajectory for increases through 2030, along with mid-point targets in 2025, again based on individual country assessments. The table shows that across the key sectors identified here, incremental spending of about 3.8 percentage points of GDP is needed by 2025. Between 2025 and 2030, spending continues to grow, increasing by a further 3.1 percentage points of GDP by 2030.

Table 2.2. Investment and development spending targets (excluding China)

	Gross spending 2019		Spending target 2025		Spending target 2030	
	US\$bn	% GDP	US\$bn	% GDP	US\$bn	% GDP
Human capital	1,470	7.0%	2,000	8.2%	3,065	9.5%
Sustainable infrastructure	730	3.5%	1,160	4.8%	1,840	5.7%
AFOLU (agriculture, food, land use, nature)	150	0.7%	355	1.4%	650	2.0%
Adaptation and resilience	35	0.2%	180	0.7%	325	1.0%
Total	2,385	11.3%	3,695	15.1%	5,880	18.2%
<i>Notes: The estimates for human capital investment are based on analysis by Kharas and McArthur (2019). The estimates for sustainable infrastructure investment build on analysis by Bhattacharya et al. (2016), incorporating the additional investment required for the energy transition, as discussed above. The 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 (2021b). The estimates for adaptation and resilience investment are based on analysis by Systemiq (2021b).</i>						

Across all EMDEs, a transformational spending approach would require raising spending levels in these four areas in 2025 by a total of 50% or \$1.3 trillion, equivalent to 3.8% of EMDEs' (excluding China) GDP in 2025. The largest increase in absolute terms would be for human capital, followed closely by sustainable infrastructure investments. AFOLU, adaptation and resilience also require significant incremental resources, especially as the historical base for spending in this category is so low.

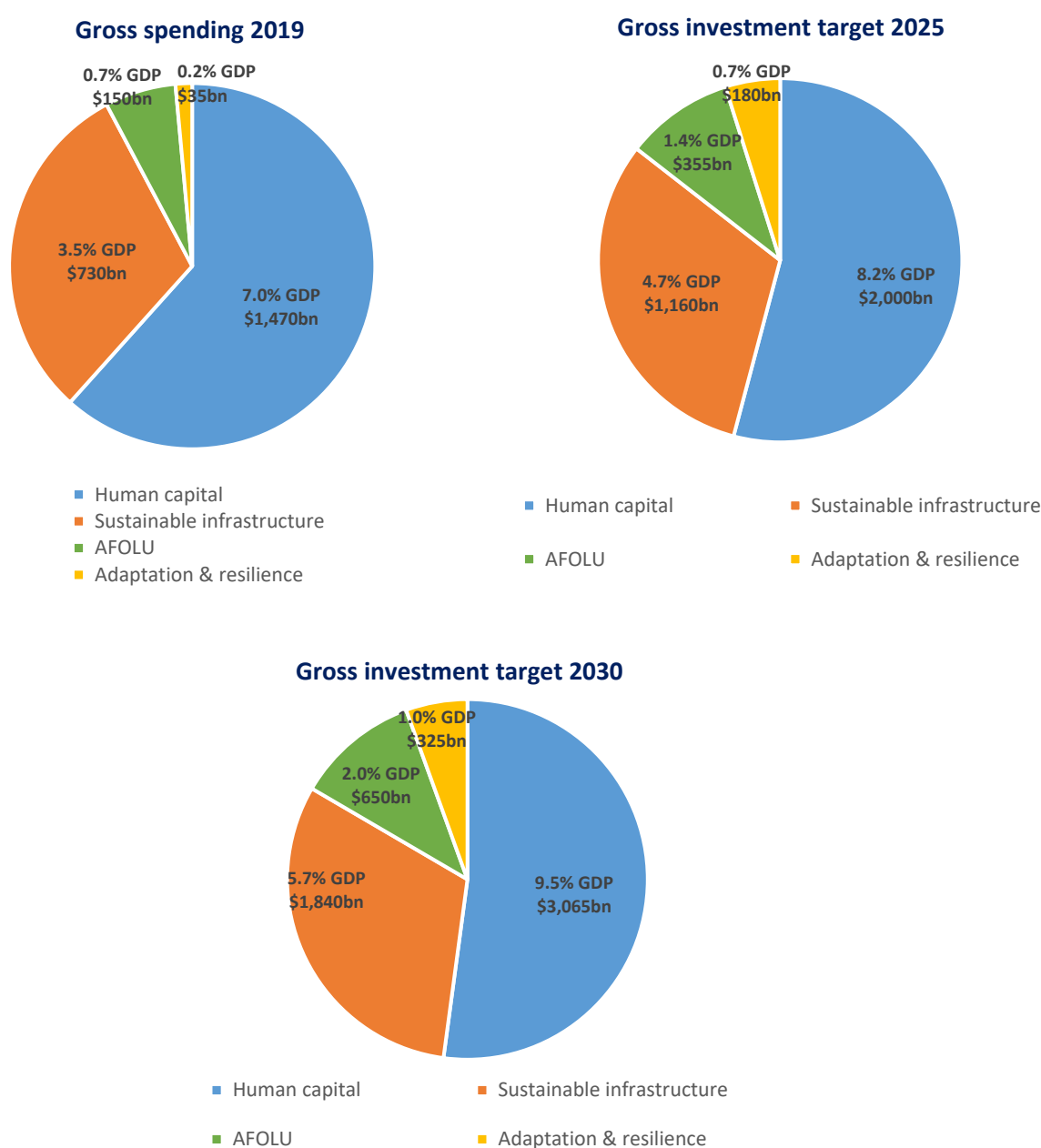
Thanks to improvements in technology, the transition to a green economy “provides the greatest economic, business and commercial opportunities of our time” (Stern, 2021). However, average investment rates as a percentage of GDP since 2000 in Eastern Europe (23%), Latin America (20%) and Sub-Saharan Africa (21%) are simply too low to permit an economic transformation on the scale required. Public and private spending on human capital formation and preservation of natural capital in all regions is sub-optimal.

The IMF estimates that Africa alone will need an additional \$285 billion of financing for the period 2021–2025 for an adequate COVID-19 response and roughly twice that amount to return to a path of catching up with wealthy countries (Georgieva, 2021). Our figures suggest that Africa will require an additional \$325 billion per year by 2025 to achieve transformational spending on human capital, nature and sustainable infrastructure. Before the pandemic Africa spent about \$260 billion a year on human capital, nature and infrastructure, around 11% of its GDP, so a large increase, in the order of 10% of GDP in 2025, is required. Large shortfalls are also visible in financing for other regions. In aggregate, the transfers of public and private international development finance that can be reasonably linked to investments and spending directly associated with achievement of the SDGs was around \$610 billion per year in the three years before the pandemic (Kharas, 2020) and this should approximately double by 2025.

When considering large spending increases, as proposed here, it is important to address concerns about absorptive capacity. Can EMDEs actually implement additional spending programmes, at

scale, with reasonable returns? The available evidence seems to say “Yes”. The IMF has calibrated macro models (development, investment and growth models) for 65 developing countries to show the effects of a big-push investment strategy (Gurara et al., 2019). In these cases, returns to public investment are sufficiently high to justify considerable additional investments. As another corroboration, the IMF’s Public Investment Management Assessment scores African countries almost as highly as Asian countries (4.4 vs. 4.5),⁵ even though the former have far lower investment levels than the latter (IMF, 2018). The reason for low investment rates in Africa would appear to be a lack of access to finance and therefore a limited project pipeline, rather than lack of investment efficiency or low returns.

Figure 2.10. Gross investment targets, 2019–2030 (total EMDEs excluding China)



Source: Authors’ calculations

⁵ Using a scoring system ranging from 0 to 10, with 10 indicating full alignment with good public investment management (PIM) practices.

3. Policies and institutions to accelerate and enhance the quality of investments

3.1. Inherent complexities

The world needs to ramp up both the quantity and quality of investments in four domains: human capital, sustainable infrastructure, natural capital and adaptation and resilience. The investments needed are transformational in nature; they will create more sustainable, inclusive and resilient energy, transport, water, food and land-use systems along with greater and more equitable global prosperity. They are intended to drive long-term returns and deliver on social, environmental and economic needs. The world needs these investments to be scaled up quickly and to be of high quality.

The challenge is that making these types of investments happen is inherently complex. First, countries need to have the capacity to make these types of investment choices; they need to be able to say this is the kind of investment we want. Many governments fail at this first hurdle. Second, countries need to have the capacity to translate their investment decisions into concrete programmes and pipelines of projects. This includes having the right policy and institutional frameworks, which create the right enabling environment with a strong emphasis on sustainability.

This capacity is lacking, even in advanced economies. Governments have great difficulty making clear and credible decisions around investments for many reasons, including that politics is governed by short-term pressures and these investments involve decisions for future generations. These are also inherently complex decisions. There are many difficult judgement calls to be made, including around gains and risks: for example, ensuring large construction firms do not game the system, issues around pricing, and around the setting of tolls on the revenue side. Getting these decisions right needs extremely sophisticated institutional capabilities. And developing these is challenging even in the best of circumstances; for example, the US infrastructure gap has persisted for decades and the political system has been unable to tackle it, to the point where infrastructure is now in a critical state of decay (ASCE, 2021).

In this section we explore key elements of the policy and institutional frameworks needed for the right enabling environments. We also explore how the world might be able to accelerate progress given the imperfect but increasingly urgent situation it faces.

3.2. A suite of policies to support the investment strategy

Implementing a sustainable, resilient and inclusive investment strategy will require a suite of clear and credible policies to tackle a range of market failures and drive sustainability. These policies need to be set in the current macro-fiscal context. In many EMDEs, this will involve investment-led recovery packages that are set in a very difficult macro-fiscal context where fiscal expansion is necessary but severely constrained. Many EMDEs will also face debt difficulties and heightened vulnerabilities, to the impacts of natural disasters, for example. Countries will need to find ways to create fiscal space and unlock finance for the best growth and job-enhancing investments available to them, while at the same time responsibly managing debt and deficits over the medium term (CoFM, 2020; Stern, 2021).

How can that fiscal space be created and how does one ensure that fiscal accounts are managed responsibly? Fiscal reforms are needed to increase the effectiveness and efficiency of tax systems – getting carbon prices right as part of these reforms will be crucial – and better international tax

system design is needed too. An estimated \$200 billion a year is lost in lower middle-income countries to tax avoidance (profit shifting) by multinational companies, more than they receive in official development assistance (ODA) (World Bank, 2021d). Also crucial is tackling illicit financial flows, which disproportionately impact the poorest, and reforms to public procurement to make public spending more efficient and greener. Although there are global efforts to address these issues, some realism is needed about their likely impact: the current proposals being considered under the G20/OECD tax base erosion and profit shifting (BEPS) initiative and various measures to reduce illicit flows are unlikely to result in flows that would affect the macroeconomic trajectories of developing countries.

Carbon pricing

A suite of structural policies will be needed with carbon pricing at the centre. Action on carbon pricing has continued despite the disruption from COVID-19. In terms of recovery, carbon pricing can support clean industries and low-carbon investment, which generate more jobs than alternative fossil fuel stimulus measures (CoFM, 2020; World Bank, 2021e). Carbon prices can also raise substantial revenue for governments in a more efficient way than highly distortionary taxes. Where EMDEs do not yet have the capacity to implement explicit carbon pricing, alternatives exist, such as adjusting existing fuel duties to reflect the carbon content of the fuel (IMF, 2014), or placing customs duties on selected high-carbon imports. The most effective form of carbon pricing will vary from country to country.

Growing ambition on carbon pricing around the world is also being accompanied by growing interest in design features such as minimum price floors and Carbon Border Adjustment Mechanisms (CBAMs). A practical approach proposed by the Managing Director of the IMF would be for large emitters such as the G7 and G20 to agree an international carbon price floor. However, to the extent that countries do not move in lock-step, it may be necessary, for both economic reasons and political acceptance, to consider CBAMs that ‘level out’ the impact of carbon pricing for energy-intensive goods that are exposed to trade; this should apply to only a very small set of products with high carbon content.

Fossil fuel subsidies are also a persistent form of negative carbon pricing, and more concerted reform efforts could free up substantial resources for governments. Unfortunately, the downward trend on fossil fuel subsidies appears to have recently reversed. According to the OECD (2021a), many countries are funnelling the bulk of stimulus funding to support fossil-fuel and related industries, often with no climate change or pollution reduction requirements attached.

Regulations and standards for EMDEs

As a complement to carbon pricing, regulations such as standards can tackle an additional range of market failures to the greenhouse gas externality, and provide confidence and clear signals. If designed well, they can help to make carbon pricing schemes more effective and efficient. For example, in transport they can tackle network externalities around electric vehicle (EV) charging infrastructure and be used to accelerate the phase-out of internal combustion engine vehicles (Stern, 2021). Other important areas where regulations and standards can be useful include for valuing natural capital, city design, and green budgeting.

Just transition

Just transition and inclusion must sit at the centre of all policy frameworks. In EMDEs such as China and Indonesia, with established high-carbon and energy-intensive industry and energy systems, the transition to a low-carbon economy is likely to result in job losses concentrated in particular regions

and sectors. Governments will need to implement policies to ensure the transition for impacted workers and communities is just or they will face severe public backlash. Inclusion policy is about boosting economic potential and societal resilience; conversely, exclusion is economically highly inefficient and politically unstable. Decision-makers will have to pay close attention to ensure climate and sustainable growth policies, including as part of COVID recovery, and the institutions that underpin them, integrate and advance inclusion.

Debt management

Much of the spending for sustainable infrastructure will be financed by debt. This is appropriate – the investments will have benefits for future generations – and necessary for keeping the cost of providing infrastructure services at a reasonable level. However, many developing countries are already highly indebted and face significant credit risk premia in capital markets. Reforms to debt management will be needed to finance higher investment levels. On the international side, these include the development of comprehensive and transparent public debt registries, stronger processes for resolving debt servicing difficulties and providing equitable treatment across creditors in the event of debt restructuring, and new approaches to creditworthiness analysis that include the liquidity gains that can accrue from an improved longer-term development outlook. On the domestic side, tighter and transparent links between debt and specific investment projects are needed, along with strong macro-fiscal, long-term frameworks based on public net worth accounts.

3.3. Importance of long-term institutional development

In realising an investment programme on the ground, all policy needs to be embedded in a country's existing framework of politics and law; these three dimensions are intertwined and central to realising an investment programme. The stronger a country's politics and law, the more effective it will be in realising policies and investment programmes. As mentioned, many governments fail on the politics and continue to do so for a number of reasons, including intergenerational considerations, the prevalence of externalities and political cycles that can divert resources away from public investments (Gupta et al., 2015). This increases the need for stronger institutional arrangements that can help governments take a longer-term view.

The strength and quality of institutions will determine the effectiveness of policy for unlocking investment demand in good-quality sustainable infrastructure investments: investments that are often characterised by higher uncertainty than non-sustainable alternatives, high spillovers and complementarities, are often long term, and to which the private sector can make a contribution but only with a public-private interface due to the large social returns that will accrue. Strong institutions can deal with these types of investment characteristics. They can deal with externalities and complementarities (e.g. creating the skills and housing for workers needed to complement investment), reduce government risk, which is a huge deterrent to the private sector, and tackle short-termism, e.g. high discount rates. Stronger institutional frameworks also increase constraints on executive power and this has been shown to underpin private investment (Besley and Mueller, 2018).

Key elements of what countries need to do, in terms of institutional frameworks for good-quality sustainable investment in infrastructure, have been set out by the OECD, the IMF and others. The OECD, based on a series of principles from the Japanese G20 in 2019,⁶ described some of the key elements, or best practice principles, for delivering good-quality infrastructure (OECD, 2020). The IMF has set out key elements around the governance of infrastructure (Schwartz et al., 2020).

⁶ See: https://www.mofa.go.jp/policy/economy/g20_summit/osaka19/pdf/documents/en/g20dwg_qi_key_elements_final_en.pdf

Strengthening existing institutions may involve building new institutions or revamping existing ones. There may be space for bespoke institutions; the OECD and IMF advice will need to be placed within each country's specific context, to create bespoke institutional solutions. An example is the UK's National Infrastructure Commission (NIC, 2021).

3.4. Accelerating action in the near term

Many of the types of institutional structures described above will take time to design and implement, and indeed there has been little progress in many EMDEs in this regard over the past 30 years. What can be done to accelerate investment in countries with longstanding weaknesses in institutional frameworks and state capacities?

A first step is to carefully consider both the institutional frameworks currently in place and the nature of state capacities that exist today: in other words, assess the investment climate. The IMF has developed the Public Investment Management Assessment (PIMA) framework, which helps countries assess their infrastructure governance institutions in a comprehensive fashion and to design a tailored and prioritised action plan (Schwartz et al., 2020). Assessing the investment climate in EMDEs will also involve going right down to sector specifics; experience has shown that it is important to become highly specific at the sector level and to determine feasible priority actions for accelerating the delivery of investments (including bringing in the private sector). Recent International Finance Corporation (IFC) Country Private Sector Diagnostics focus on key sectors where private sector investment can drive growth. These diagnostics can highlight the main elements of a 'sector enabling framework' that delves into the specifics of the institutional issues that are critical to boosting the private sector and making investment happen on the ground.

Country platforms for dealing with an imperfect world

It remains to be seen if, building on existing knowledge of the investment climate gained through country diagnostics and evaluation exercises like PIMA, investment platforms that allow sound investment decisions to be made through better coordination of all the key stakeholders as well as better short-term governance arrangements can be rapidly put in place. There is a question around whether such sector- and goal-driven platforms, focused, for example, on cities, transport and energy, can help to find institutional solutions that recognise the heterogeneity of projects but are replicable and scalable across sectors, countries or regions.

The creation of country investment platforms was one of the core recommendations of the G20 Eminent Persons Group on Global Financial Governance (2018): "Proposal 2: Build effective country platforms to mobilise all development partners to unlock investments, and maximise their contributions as a group, including by convergence around core standards." Country platforms can work with project and sectoral realities, but also find solutions informed by global experience, including through the work of international financial institutions (IFIs). Following the G20 report, the World Bank has worked with more than a dozen countries to support country platform pilots, to date with mixed results.

To be effective, country platforms must be owned and developed by governments to ensure trust and legitimacy, encourage competition, and retain a government's flexibility to engage with the most suitable partners. Close involvement of government ensures that platforms reflect heterogeneity in state capacities (Besley 2009, 2011a, 2011b, 2021).

A key issue to consider is to what extent state capacities can be substituted for by other external agencies; the history book is not so kind on this, whether it be in the realm of peace-keeping or collective provision, i.e. states rarely seem to learn for themselves from having support for activities

that are normally done by the state. For this reason, it is essential that new country platforms consider three elements: (i) making sure not to advocate for things that would ‘only work in Denmark’; (ii) recognising that even though the current situation is one of urgency, a step-by-step approach that also allows for learning is needed; and (iii) having a plan that creates something that is politically sustainable over the medium term, not just sustainable in the short-term implementation phase.

Strong involvement from the international development community, including from IFIs, will be crucial, to help countries build country platforms that are climate-friendly (i.e. aligned with the Paris Agreement targets) and support the SDGs. This will require a significant shift in the way the development community operates. Two years ago, a group of development finance institutions (in the context of the DFI Forum on Fragility) established country platform pilots with these objectives. A recent review was favourable overall in its conclusions, especially about the capacity of the platforms to build alignment in priority areas. It recognised the potential for practical collaboration among DFIs in helping countries tackle both cross-cutting and sector challenges.

So far countries’ experience of implementing country platforms has shown that this approach is more effective when specific objectives, aligned with government priorities and with strong interest from all relevant stakeholders, are in place. The urgent need for EMDEs to mobilise assistance and resources to tackle climate change and turn it into an opportunity for a new and better form of growth offers a focus around which country platforms can be developed.

Momentum has been building on this agenda. At COP26 in 2021, Mark Carney, the UN Special Envoy on Climate Action and Financing, called for an enhanced country platform approach to mobilise private capital flows to EMDEs (Carney, 2021), building on existing initiatives such as the Climate Finance Leadership Initiative (CFLI) Country Partnerships and the Global Infrastructure Facility’s Country Mobilization Platform Initiative. COP26 also saw the launch of the International Just Energy Transition Partnership between South Africa and France, Germany, the UK, US and EU, which can be viewed as a test case for the advocated approach. Moving forward, the Country Climate and Development Reports (CCDRs) being rolled out by the World Bank Group will generate important inputs for country platforms by helping to identify countries’ climate commitments, priorities and opportunities for public and private solutions.

4. Debt and financing strategy

4.1. Debt situation in EMDEs

COVID-19 has complicated an already fragile debt sustainability situation. Half of all low-income countries were assessed to be at high risk of or already in debt distress before the pandemic (IMF, 2020c). Governments have taken on additional debt in order to respond to both the health and economic impacts of the pandemic. Although fiscal support for developing countries has been far more modest than that in advanced economies, emerging markets have added 9.7% and low-income countries 5.2% to their gross general government debt through larger fiscal deficits and below-the-line public loans, guarantees, and other support for firms (IMF, 2021e).

The pandemic aggravated debt service problems in many countries through its effects on trade, commodity prices and tourism, but defaults were contained to countries with pre-existing weak policies and economic management (Kraemer et al., 2021).

Though policy efforts provided some relief for low-income countries in the initial stages of the pandemic, the risk of debt crisis remains and further action is needed.

In response to the massive global capital outflows in developing countries at the start of the pandemic, as well as falling tourism and remittances, the G20 agreed to a temporary debt standstill on bilateral debt service for countries eligible for International Development Association (IDA)⁷ support, plus Angola. This programme, the Debt Service Suspension Initiative (DSSI), designed to address short-term liquidity crises, postponed around \$12.9 billion in debt service payments from May 2020 to December 2021 (World Bank, 2022c), enabling the 48 developing countries that participated in the initiative to direct these resources towards other pressing needs, like health expenditure. Yet this amount pales in comparison to the \$1.5 trillion in debt service payments that developing countries (excluding China) owe over the next five years.

In November 2020, the G20 also agreed to a shared framework to help countries in need of larger-scale debt restructuring. This programme, the Common Framework for Debt Treatment, is open to DSSI-eligible countries and designed to address longer-term solvency issues. Countries can seek relief under the framework on a case-by-case basis. Needs are determined by IMF and World Bank debt sustainability analysis, and bilateral creditors agree to fair burden-sharing, meaning debtor countries must seek relief on similar terms from all creditors (other than multilateral institutions with preferred creditor treatment), including the private sector. It is notable that several non-Paris club creditors, including China, India, Turkey and Saudi Arabia, have signed onto the Common Framework. Thus far, Chad, Ethiopia and Zambia are the only countries to request relief under the framework (Kharas and Dooley, 2021) and each case has experienced delays (Georgieva and Pazarbasioglu, 2021). The Common Framework marks a step forward in greater international cooperation around debt workouts, but its implementation has so far been incomplete. The IMF is calling for renewed efforts to strengthen the Common Framework and expand its coverage to other highly-indebted countries (Georgieva and Pazarbasioglu, 2021).

The present trajectory is one of slow growth, low investment and public spending, and rising debt service burdens in many, if not most, EMDEs. EMDEs are at a juncture where high debt and slow recoveries are forcing choices between economic stagnation or default. Fiscal austerity could mitigate debt risks, while fiscal expansion could accelerate recovery.

⁷ See <https://ida.worldbank.org/about/what-is-ida>

There is an alternative path. A carefully programmed and executed big-push investment programme, with associated financing, could generate higher levels of growth with improved creditworthiness (debt/GDP ratios) in the long run.

Most developing countries have been pursuing such a policy on a modest scale. The majority face short-term liquidity constraints due to tightened fiscal space resulting from COVID-19. However, they have had economic growth rates in excess of the interest rate on their debt, indicating favourable long-run debt dynamics (Kharas and Dooley, 2020). In these cases, the fundamental issue is dealing with rollover risk, rather than solvency risk. Speculative grade countries in this group also face a high cost of borrowing, which can limit the extent to which they can pursue a debt-driven investment strategy.

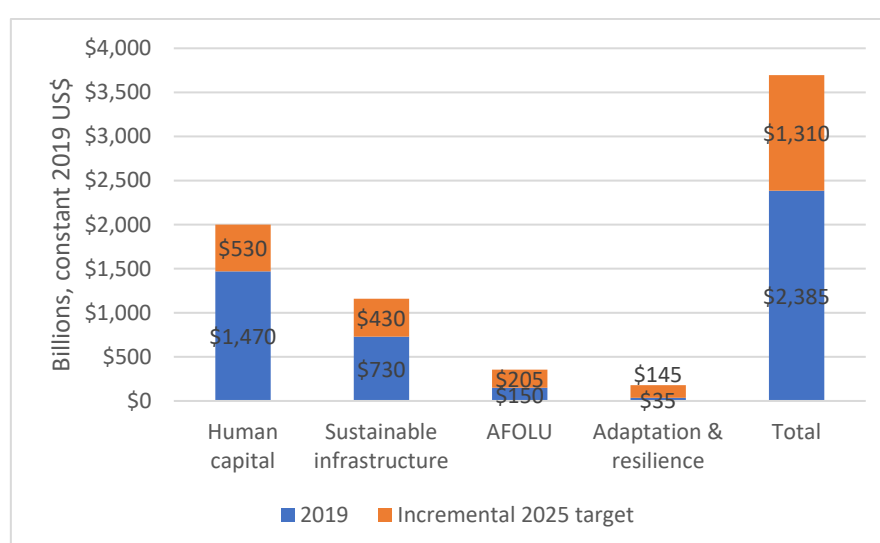
Lowering the cost of borrowing, through increased use of the multilateral system as discussed below, is one means to open up fiscal space for these countries. In about 20 developing countries, however, solvency is an issue. In these cases, improvements in structural policies will be required before embarking on a big-push strategy. This group will require a case by case restructuring approach. The G20 Common Framework represents a step forward in this regard, but more efforts are needed to bring in private sector and non-Paris Club⁸ creditors, and to expand eligibility beyond countries helped by the IDA. For low-income countries, expanded access to grants and concessional finance could offset the negative impact of higher debt levels. Greater transparency must be integral to any new debt financing effort.

Below we describe the elements of a successful financing package.

4.2. Matching spending with financing, by whom and for what

EMDEs (excluding China) spent US\$2.4 trillion in 2019 on the four transformational spending categories identified in Section 2 – human capital, sustainable infrastructure, AFOLU [agriculture, food, land use and nature], and climate change adaptation and resilience. This was broken down into \$1.5 trillion for human capital, \$730 for sustainable infrastructure, \$150 billion for AFOLU, and \$35 billion for adaptation and resilience (see Figure 4.1).

Figure 4.1. Annual investment target, 2019 and 2025



Source: Authors' calculations

⁸ See <https://clubdeparis.org/>

This section sets out a financing strategy consistent with a big-push spending programme in the amounts indicated in Figure 4.1. The strategy rests on two pillars:

- 1. A sound understanding of how sustainable debt trajectories should evolve over time** – a mind-set change from today's approaches – using a public balance sheet (net worth) approach to public financial management rather than a cash accounting approach (Ball, et al., 2021; Peppel-Srebrny, 2018).
- 2. An equally sound understanding of how the component parts of the international development finance system fit together:** that is, the policy context and institutional capability for effective public investment and spending, domestic resource mobilisation, ODA and bilateral finance, multilateral finance and private finance.

We identify spending targets, by category, for each individual country, and match those with a financing strategy. With country financing strategies identified, they can be aggregated by geography, income level, or creditworthiness for ease of presentation and analysis.

In developing the financing strategy, the following principles have been used:

Principle 1: Financing sources must be differentiated to match spending purpose.

- Human capital spending depends on recurrent, general purpose finance. It is best provided through budget resources, specifically domestic resource mobilisation (DRM), but can be complemented by on-budget grants, credits and loans from official institutions. Private capital, both philanthropy and for-profit, will find niche spaces but is less material from a macro-aggregate perspective.
- Nature conservation and preservation, adaptation and resilience have significant spillover benefits for other countries, including advanced economies. There is a clear case, therefore, for official international finance to play a major role.
- Sustainable infrastructure also has significant spillover benefits but generates its own stream of revenues, making it attractive for private project finance. Multilateral institutions, with considerable know-how in identifying, structuring and implementing infrastructure projects, are expected to play a leading role. Governments will need to provide equity for such projects from their own resources.
- Individual countries have quite differentiated spending needs across these categories, depending on their initial conditions and geography. For example, small islands may need to spend more on nature, adaptation and resilience. African and South Asian countries have large gaps in human capital spending.

Principle 2: Financing opportunities differ according to country circumstances: debt levels, region, income levels and vulnerabilities.

- Low-income countries, slow-growing countries, those in conflict, and natural-resource-dependent countries (especially some oil exporters, who may face declining sales in the future) could face difficulties in growing their taxes over time. These countries are most in need of ODA from the international community.
- Vulnerable, high-debt countries may have less access to private capital and therefore rely heavily on official international finance.
- Countries with access to international capital markets on reasonable terms (investment grade and selected other low-risk countries) can mobilise their own resources and issue sovereign bonds, but could be supported by official financing where there are spillovers, where the signalling effect of multilateral participation is high and where technical capacity-building and coordination platforms for scaling up are desirable.

Principle 3: Project financing for a big-push transformation for sustainable infrastructure must be structured to reduce risks of currency mismatch, maturity roll-over, and high interest rates.

- The experience with use of funds in the IDA18 Private Sector Window clearly shows the value of local currency financing for infrastructure. Removing or reducing currency risk in some fashion will be critical to success.
- Benefits from transformation projects can accrue over many years. Most infrastructure projects are three-quarters debt-financed and long maturities are needed to align revenue streams and debt payments more closely.
- The intermediation costs on private capital markets for long-term, infrastructure finance in developing countries remain high, partly reflecting regulatory rules on capital allocation that are part of Basel III and Solvency 2. Official finance can have a comparative advantage as it is not subject to the same regulations and can provide lower-interest costs loans.

Table 4.1 summarises how these principles influence what kind of financing is best suited to what kind of spending in countries at different income levels.

Table 4.1. Financing heatmap – which type of spending is most important for which source of finance

Category	DRM [Domestic resource mobilisation]	Official finance		Private finance
		ODA [Official development assistance]	Multilateral non-concessional	
Human capital	High	Medium	Medium	Low
Infrastructure	Medium	Low	High	High
AFOLU	Medium	High	Medium	Medium
Adaptation and resilience	Medium	High	Medium	Low
Low-income	Medium	High	Low	Low
Lower middle-income	Medium	Medium	High	Medium
Upper middle-income	High	Low	Medium	High

4.3. A Grand Match financing strategy consistent with a big-push spending transformation

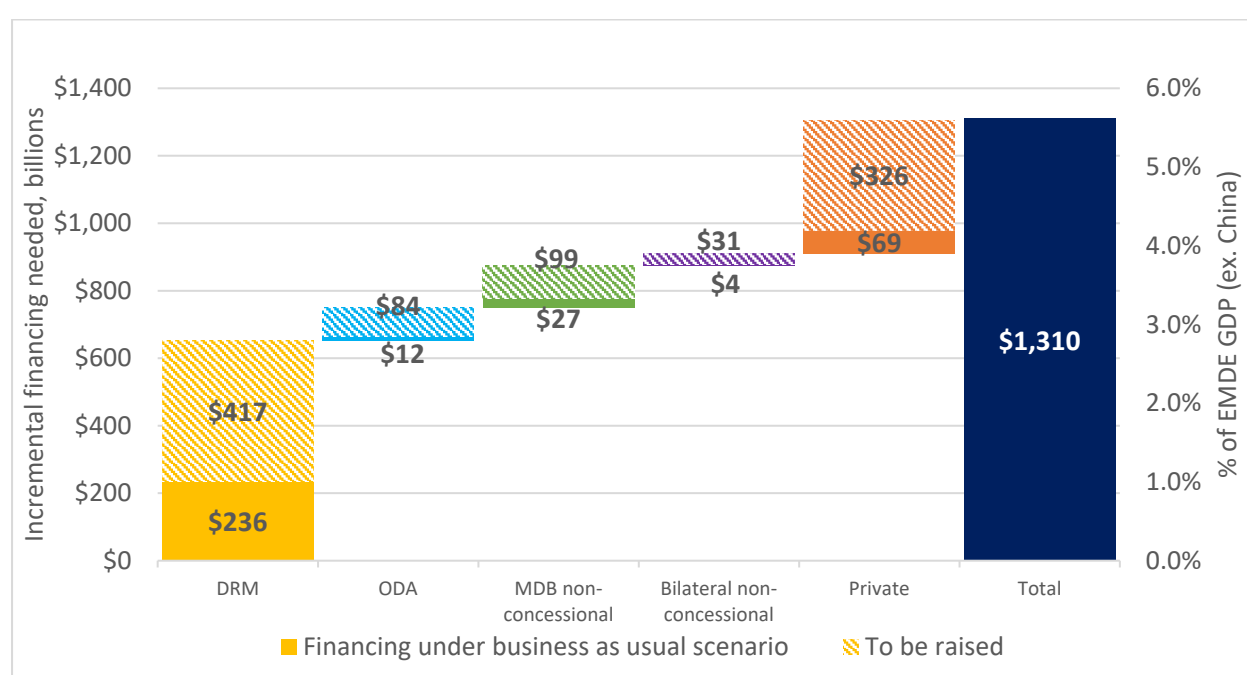
To meet ambitious big-push spending targets, as set out in Section 2, developing countries will need to raise incremental financing of \$1.3 trillion above 2019 levels in 2025. This would come from a mix of five main financing sources: domestic resource mobilisation, bilateral and multilateral official development assistance, multilateral development bank (MDB) non-concessional, bilateral non-concessional, and private.

The allocation of incremental financing across sources can be done in several ways. In Figure 4.2 below, we offer one allocation that meets the financing principles identified above. Solid colours denote how financing can be expected to evolve under business-as-usual trends. We estimate that

around \$350 billion in additional financing will be available between now and 2025 under current trends, leaving a gap of around \$1 trillion. Hashed lines indicate the gaps that need to be filled to meet the proposed allocation. The allocation builds on what is thought to be feasible and on indicative statements that have already been made, for example in the context of climate finance.

The Grand Match idea proposes that half the incremental resources come from domestic taxes. This would require an incremental 2.7 percentage points of EMDE country GDP. Forecasts by the IMF of domestic revenue in 2025 suggest that a growth of about \$236 billion is to be expected. For EMDEs overall, the elasticity of revenues with respect to GDP growth has averaged 1.13, so, with modest growth, tax revenues are expected to rise. But more is needed, especially because revenues have fallen considerably during the pandemic.

Figure 4.2. Grand Match financing strategy – incremental financing needed between 2019 and 2025 (billions 2019 US\$)



Source: Authors' calculations

Forty per cent of the remaining half could come from official financing, concessional and non-concessional. Concessional finance is a vital component that is central to meeting the needs of the poorest countries, where ODA is an important funder of human capital, and to provide a fair allocation of costs of providing global public goods, especially for biodiversity conservation and climate change mitigation. Biodiversity is a public good with specific geographical focus, being largely concentrated in the tropics. It therefore requires a different allocation procedure from the standard ODA allocation, based on income levels and governance.

Some aid increases hopefully will happen as a matter of course as growth in advanced economies (i.e. OECD Development Assistance Committee/DAC members) recovers. We estimate that if ODA allocations remain as they are, growth will yield an additional \$12 billion in 2025. This is not enough. There is little appetite for increasing concessional finance – witness the shortfalls in responses to the UN Secretary General's appeals in 2020. Given that multiple claims for humanitarian assistance and pandemic response are additional priorities for ODA, the envisaged ODA increase in the Grand Match is limited to a 50% increase, equivalent to 0.15% of donor country GDP by 2025.

Non-concessional official finance, largely from the MDBs, plays a key role in the delivery of sustainable infrastructure. MDBs have the relevant experience in project design and implementation and have been the most successful institutions in getting private co-financing and other private capital mobilisation. MDBs could treble their commitments to sustainable infrastructure, while providing strong support to the human capital agenda that still lags in South Asia. We envisage they can triple their disbursements to \$189 billion per year by 2025. We also call for a doubling of bilateral non-concessional lending to \$70 billion per year by 2025.

Private financing is most important for sustainable infrastructure. It will often complement official finance; stand-alone private financing for infrastructure fell by half in 2020 and deteriorating creditworthiness in many countries is a constraint. But there has been considerable success with private capital mobilisation using new platforms and instruments, such as through IFC's Managed Co-lending Portfolio Programme, and there is significant potential to leverage official finance with double the amount of private finance. Use of such instruments could lead to a doubling of private finance compared with 2019 – an additional \$395 billion.

Table 4.2 shows the main components of the envisaged financing strategy package.

Table 4.2. Big-push financing strategy package (billions 2019 US\$)

Source	2019 gross financing	2025 gross financing target	2025 incremental financing target	Relative size
Domestic resource mobilisation (DRM)	\$5,311	\$5,964	\$653	2.7% of EMDE GDP
Official development assistance (ODA)	\$192	\$288	\$96	50% increase, equivalent to 0.15% of donor GDP
Multilateral development bank (MDB) non-concessional	\$63	\$189	\$126	Tripling of 2019 lending
Bilateral non-concessional	\$35	\$70	\$35	Doubling of 2019 lending
Private	\$377	\$772	\$395	Approximate doubling of 2019 lending

Note: Donor GDP shares exclude China. Source: Authors' calculations

4.4. Domestic resource mobilisation (DRM)

EMDEs (excluding China) raised \$5.3 trillion in domestic revenues for spending on the SDGs in 2019, but this fell by 16% in 2020. There is a tight relationship between the level of national income and the amount of taxes collected. On average, for every 10% increase in per-capita income levels, governments collect an additional 11% in taxes (Kharas and McArthur, 2019). According to IMF projections, EMDE governments can be expected to raise an additional \$236 billion in 2025 that can be devoted to the priority areas of the big push, assuming that spending shares stay at 2019 levels.

EMDEs could do better on this front (Fenocchietto and Pessino, 2013). The median low-income developing country collects 15% of GDP in tax revenue (excluding social security contributions), compared with 18% for emerging market economies and 26% for advanced economies (Gaspar et al., 2019). With economic growth and more equality, tax collections rise; increasing revenues by 3–7 percentage points of GDP in the medium term is “an ambitious but achievable aspiration” for many EMDEs (Benadek et al., 2021). The proposal here calls for an incremental tax effort of \$650 billion, 2.7% of GDP on average.

Sharp tax increases are unpopular – witness current demonstrations against new taxes in Colombia, for example – so governments will make efforts to minimise changes in the tax rate over time, preferring to let growth expand the tax base and generate revenues for servicing debt. However, when social returns are pushed into the future, and not directly monetised as they are for human capital and many nature conservation programmes, there will be a need for future tax increases to recoup some of the initial public sector outlay.

Much has been written on the potential for increasing tax collection in EMDEs. In the medium term, more emphasis can be put on administrative issues rather than changes in tax policy. The IMF reports that the operational strength of tax administration agencies is positively associated with tax collection (Chang et al., 2020). It recommends strengthening compliance risk management practices by risk profiling and auditing and use of third-party data and digitalisation of services. The IMF also notes that increased staffing of a tax administration agency can lead to improved collections. In addition, developing countries need to improve the public expenditure efficiency, to ensure resources spent are genuinely contributing to improved development outcomes.

There are large potential revenue gains from stronger environmental taxation regimes. This includes both carbon pricing efforts and the elimination of fossil fuel subsidies. Recent IMF estimates suggest that efficient fuel pricing by 2025 could lead to revenue gains equivalent to 3.8% of GDP. Creating the correct incentives for a low-carbon transition is thus a core part of the DRM mobilisation strategy.

Much of the infrastructure investment strategy will rely on sub-national and local implementation efforts. Thus, another key element of a DRM financing strategy is to boost the creditworthiness and decrease the cost of finance for municipal borrowing on domestic markets.

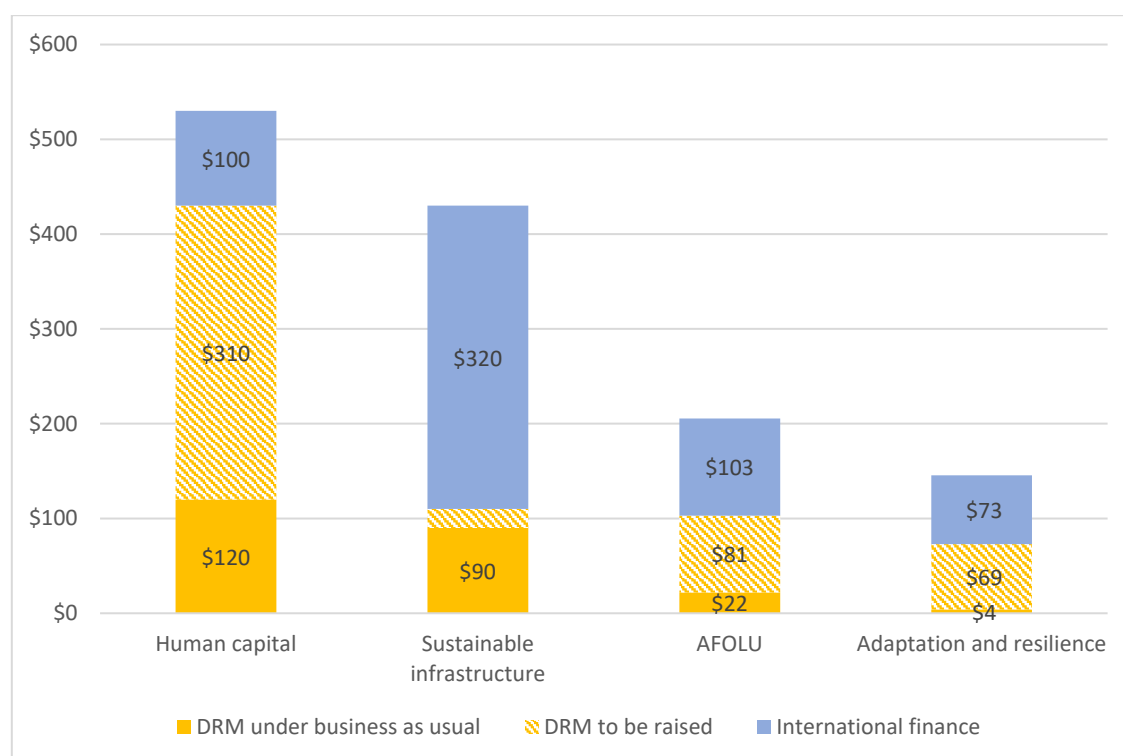
Two reasons why DRM is so important to the financing strategy

The first reason DRM is key is that it is the basis for creditworthiness. High-return investments improve creditworthiness, even when they are financed through debt. The more they can be financed through DRM, however, the lower the maximum debt/GDP ratio that is reached, and the shorter the timeframe during which a country is highly indebted. However, if DRM is advanced too rapidly, it creates a decline in household consumption and a set-back to the poverty reduction and inclusive growth agenda.

The second reason for stressing DRM is that it is the main source of revenue, subject to budget dialogue and discipline. Human capital investments must be sustained for years. DRM therefore accounts for 80% of the financing package for human capital (see Figure 4.3). Similarly, nature preservation and adaptation should also be subjected to budget priorities, but because of their public goods component the nature package in the financing plan is 50% funded by DRM – more in upper middle-income countries, less in low-income countries.

On the other hand, we only allocate 20% of incremental infrastructure financing to DRM. Currently, developing countries publicly fund 80% of their infrastructure, compared with 60% in developed countries. Shifting towards greater reliance on private financing, while also limiting DRM to the equity portion of infrastructure funding, reduces the claims on immediate tax revenues.

Figure 4.3. Domestic resource mobilisation (DRM) financing strategy, incremental targets, 2019–2025 (billions US\$)



Source: Authors' calculations, based on IMF World Economic Outlook (April 2021) revenue projections

A key component of any tax reform effort is greater international cooperation and information-sharing. The Inclusive Framework on Base Erosion and Profit Shifting (BEPS), an initiative coordinated by the OECD and G20, aims to build global consensus around two pillars of action – where multinational corporations should be taxed, and a global minimum corporate tax to avoid profit shifting to low tax jurisdictions. According to the OECD, BEPS practices cost countries \$100–240 billion per year. Efforts across both pillars would increase global corporate income tax revenues by \$50–80 billion per year, or 2–3% of global corporate income tax revenue. However, the revenue gains for developing countries from these efforts will likely be quite modest. Reforms under Pillar 1 would yield an additional 0.5% of corporate income tax revenue to middle- and low-income countries. Reforms under Pillar 2 would yield an additional 0.75% of corporate income tax revenue for middle-income countries and 1.25% to low-income countries. The minimum corporate tax rate being discussed, 15%, is well below what many developing countries would prefer, and excess profits would still accrue to the country in which a corporation's sales are located, leading to greater collection in richer countries.

Another initiative from which developing countries stand to benefit is the Global Forum on Transparency and Exchange of Information for Tax Purposes. This provides for enhanced cooperation between tax authorities in different countries, and would allow developing countries to better capture tax revenue from money shifted abroad by their nationals. More work is also needed to better tax the digital economy, with equitable revenue shares accruing to developing countries.

Work is also underway to help stem illicit financial flows, including tax evasion, corruption and illegal activities. Size estimates vary, and none is very precise; however, the size of these flows is likely large, and hence they are a potential source of greater revenue capture. Illicit flows not only hurt revenue collection efforts but they erode institutions and make government spending less effective. Some global efforts have been made to date to stem these flows: the World Bank/UNODC Stolen Asset Recovery Initiative (StAR) has returned to countries \$8.2 billion to date, and the Extractive Industries Transparency Initiative (EITI) has disclosed \$2.7 trillion in revenues to ensure the profits from natural resource extraction benefit the public. However, these efforts are quite small in comparison to the potential size of flows.

Greater international cooperation is also needed on carbon pricing. The IMF has proposed a minimum carbon price floor, similar to the BEPS work in taxation, as well as cross-border price adjustments for carbon-intensive trade-exposed sectors. Again, equitable burden-sharing is needed here – developing countries have contributed the least historically to the climate crisis, but are set to face the brunt of the impact.

4.5. Official development assistance (ODA) and concessional multilateral finance

ODA rose slightly to 0.32% of Development Assistance Committee (DAC) GDP in 2020, according to preliminary OECD figures. Net bilateral ODA from DAC bilateral and multilateral donors reached a record \$161 billion, with a 4% increase in aid to Africa, a 2% increase to least developed countries, and a 6% increase to humanitarian aid (OECD, 2021b). \$12 billion of this total was for COVID-19 response efforts, \$9 billion of which was from the European Union.

From a recipient perspective, the rise in aid is welcome, but it is a small fraction of the revenue losses suffered by EMDEs as a result of the recession, or of the fall in private capital flows (-13%) or trade volumes (-8.5%). The aid increase represented approximately 0.05% of the total incremental public domestic spending by advanced economies as they responded to the pandemic.

The G7 has already committed to supporting additional spending on pandemic health surveillance, education for girls, Climate Investment Funds and accelerating the transition away from coal, and on the protection, conservation and restoration of nature. It has committed to working with others in the G20 in a new partnership for sustainable and inclusive growth. These commitments, while not yet translated into quantitative pledges, suggest a willingness to expand ODA.

ODA is needed to help catalyse investments in a variety of areas. As the core of the international financial system, it serves as the foundation from which to crowd in funding from other sources, de-risking investments and serving to buttress DRM efforts. ODA will be key to the SDGs' Leave No One Behind agenda, and to supporting health and education investments in low- and lower middle-income countries. It also supports sustainable macro-fiscal frameworks in these countries, through technical support and capacity-building.

ODA is also needed to support global public goods, such as climate, nature, and adaptation and resilience investments, specifically in poor and vulnerable countries. This can also help reduce the cost of the low-carbon transition in these places. And ODA can help both lower the cost and de-risk sustainable infrastructure projects and the 'build back better' agenda, through upstream project development, equity finance, standards and platform develop. These many demands on ODA require a stepped-up agenda for the next decade.

We propose an incremental increase in ODA and multilateral concessional finance of \$96 billion by 2025, a doubling of 2019 gross figures (see Figure 4.4). This amounts to 0.15% of donor GDP

(excluding China), bringing total ODA to 0.45%. It also amounts to 15% of the projected incremental spending target for low-income and lower middle-income countries. It would be consistent with the desire to double bilateral ODA allocations for climate from \$30 billion to \$60 billion. It would return ODA in PRGT-eligible countries to the level prevailing around the year 2000 (about 11% of GDP).

Ultimately, higher levels of aid must come from national budgets, which are under pressure in many advanced economies. The European Union's multi-year framework budget is lower than before as it now excludes the UK's contribution. It is also more oriented towards the EU neighbourhood (Foresti, 2020). President Biden has proposed a \$4.4 billion increase in US aid in his 2022 budget submission to Congress, mostly oriented to more health spending and contributions to international funds.

A new collective agreement is needed to raise aid from all the major donors. Donors need to agree on medium-term targets to drive collective ambition and ensure accountability. This includes an aggregate target of 0.45% of GDP by 2025 and a doubling of bilateral climate finance to \$60 billion by 2025, with half allocated to adaptation. Donors should also agree on specific nature-, adaptation- and resilience-related ODA targets, in addition to updated commitments to COVAX (the international scheme designed to ensure low-income countries are not left behind in the fight against COVID) and on future pandemic preparedness efforts.

Donors must also agree to adequate and more coherent support to multilateral channels of aid delivery, for greater leverage and impact. The International Development Association (IDA) is critical for low- and lower middle-income country support, and the recently completed IDA20 replenishment⁹ is a welcome step. The African Development Bank (AfDB) is likewise capital-constrained; donors could push for a similar replenishment acceleration process to enhance support for African countries.

There is also a need to scale up 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.

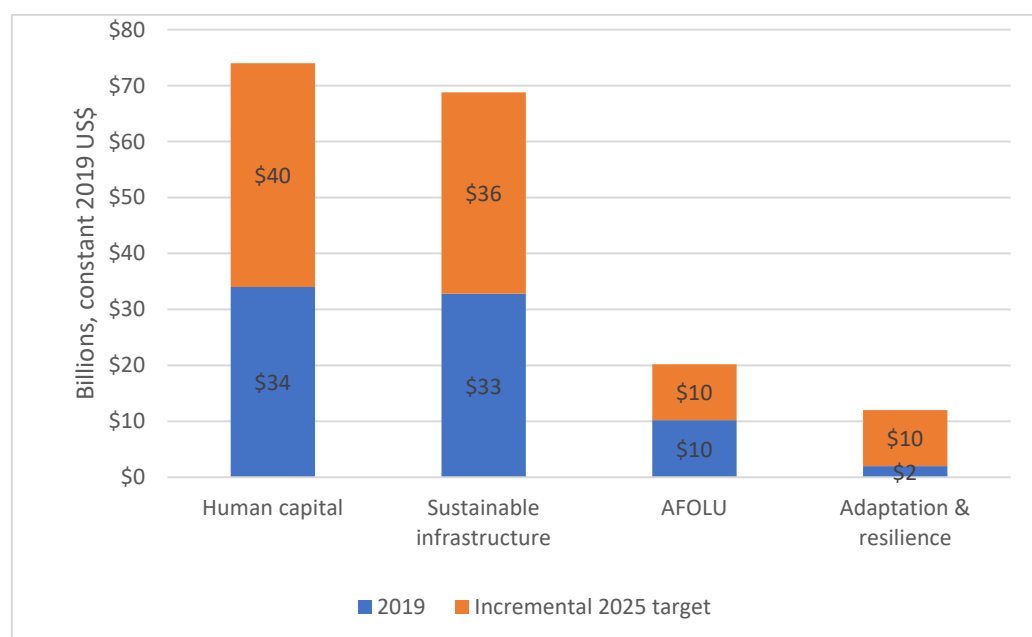
Beyond IDA and the climate funds, donors should consider a scaled-up agenda for greater MDB ambition writ large. MDBs provide the best value for money in the international finance space – they are able to combine grants with concessional and non-concessional loans, alongside technical assistance. They can offer lower interest rates and longer maturities on loans than bilateral donors can, making multilateral debt more sustainable in a big-push investment strategy. They also are likely the best vehicle for financing vaccines and pandemic preparedness. They provide catalytic financing for health and education, leveraging bilateral ODA investments. MDBs are also the best option for financing vaccination campaigns, building on their country-level presence and established distribution channels. Donor direction is needed for greater MDB ambition, both in terms of recapitalisation timelines and relaxing of balance sheet rules that limit expanded lending under current conditions.

There is also room for donors to push for scaled-up blended finance in the development space. Bilateral aid acts as a catalyst; it can de-risk investments, and thus has the potential to bring in more private financing under the right facilities.

⁹ The 20th replenishment process of the IDA, the World Bank's fund for the world's poorest countries, was completed in December 2021.

Most ODA has been allocated to countries based on income levels and economic performance, including governance. But the new demands on ODA to help with the provision of global public goods – pandemic surveillance, climate mitigation and adaptation, biodiversity – suggest the need to complement the traditional allocations with other mechanisms that are more purpose-focused. Even the more traditional Leave No One Behind agenda could be better implemented through a sharper sub-national targeting focus (see below). ODA is best suited to support long-term, general purpose spending on health, education, nature and climate, and can leverage greater private capital in infrastructure projects.

Figure 4.4. ODA spending targets, 2019 and 2025



Source: Authors' calculations, based on OECD Creditor Reporting System

4.6. Official non-concessional lending

The multilateral development banks are uniquely placed to contribute to the big investment push agenda. They have the long maturities and low interest rates required for transformational development finance. They enjoy informal preferred creditor treatment. They can combine loans with grants, technical assistance and policy and institutional guidance. The MDBs also have substantial experience with de-risking private capital in the context of investment projects, during the construction and operational phases. The International Finance Corporation (IFC), for example, accounts for just under one-half of all private capital mobilisation by official bilateral and multilateral development agencies combined.

A major value proposition of the MDBs is their countercyclical role. They have the patience to ride out macroeconomic downturns that can trigger liquidity crises that affect other lenders, who may respond with additional lending. The MDBs reacted swiftly to the pandemic downturn. Along with the IMF, they disbursed about \$120 billion to EMDEs in 2020, far more than the lending surge in 2009 during the global financial crisis. Even expressed as a percentage of EMDE GDP, the response was larger (see Figure 4.5). However, the composition was quite different. In the aftermath of the global financial crisis, there was rapid and large support to middle-income countries. In 2020, in response to the pandemic, there was far greater focus on low- and lower middle-income countries.

For example, the lending increase by the World Bank Group to middle-income countries in 2020 was smaller than the increase in 2009.

Figure 4.5. Net disbursements by international finance institutions during the global financial crisis in 2009 and COVID-19



Source: Authors' calculations, based on annual reports from the World Bank Group, IMF, ADB, IDB and AfDB

Historically, however, MDBs have pulled back their lending after a major counter-cyclical surge and have returned to reduced sustainable lending limits, based on conservative financial management practices. For example, the IBRD's sustainable annual lending limit for the fiscal year 2021 was set by its Board at \$25 billion, significantly below the commitments made during the pandemic.

Our proposal calls for the MDBs to avoid this pattern, given the major needs for long-term, transformational spending. The post-pandemic recovery phase should not be viewed as cyclical, but as an opportunity for a step increase in MDB activity to both continue the COVID-19 recovery effort and catalyse progress on the larger development and transformational growth agenda. MDBs will be critical in providing support to both low- and middle-income countries. A systems-level approach will be required, either through country or sector platforms, to unlock investments, prepare project pipelines, and de-risk at scale.

There is much the MDBs can do to maintain lending at or above recent crisis levels. They can stretch their current balance sheets by better accounting of callable capital, reforming statutory lending limits, balance sheet optimisation, greater risk pooling, and turning over assets faster. One calculation suggests the major MDBs could raise lending by \$750 billion with no change in credit rating and by \$1.3 trillion if they were prepared to accept an AA+ rating, even in the absence of any capital increases (Humphrey, 2020). The MDBs could also scale up the use of blended finance and

guarantee facilities to improve private sector multipliers, looking at reform of the GIF and other instruments to better match de-risking needs and incentives. The MDBs could likewise work more effectively as a system at the country, regional and global level, leveraging the expertise of each organisation to better tailor investment packages to each country context.

Greater MDB ambition like this will require accelerated replenishment timelines, specifically for the IDA, AfDB, CIF and GIF. These replenishment cycles should provide proactive capital increases commensurate with the development and climate ambitions laid out above, rather than waiting for current funding cycles to expire. A business-as-usual replenishment model is no longer sufficient – the MDBs offer the greatest value for money in the international financial system and can be a core driver of the big-push investment strategy if given the resources to do so.

Our proposal calls for a \$126 billion incremental lending increase in multilateral non-concessional lending by 2025, a trebling of 2019 lending. Existing capital could support 10 years of lending at this level. Of the total amount, we suggest \$66 billion of this would go towards sustainable infrastructure, acting as a de-risking mechanism for private finance; \$30 billion would go towards nature, adaptation and resilience, in line with recent MDB pledges for more climate-related finance; and \$30 billion would go towards human capital investments, specifically in middle-income countries with low government revenue capacity that do not receive much ODA. This would come with technical assistance to build up local capacity to collect additional revenue.

We also suggest a doubling of bilateral non-concessional lending, which has been falling in recent years. Bilateral lending could increase by \$35 billion, with the bulk going towards sustainable infrastructure as a de-risking mechanism.

4.7. Special Drawing Rights (SDRs) and innovative financing

A new SDR allocation, equivalent to \$650 billion, was issued in August 2021, buying the world some fiscal breathing room. EMDEs excluding 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. The G7 has 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. Details are being negotiated but there are good prospects for significant amounts of new money to flow to developing countries through an augmentation of the PRGT, through the recently approved Resilience and Sustainability Trust, and potentially other vehicles to support global priorities. SDRs could also be used to leverage a new Liquidity and Sustainability Facility, which aims to bring down the cost of private finance for African sovereigns.

There is also 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 US. Large foundations have a history of supporting health and education public goods, and this could extend to climate finance. There is scope to tap into the growing flows of **private philanthropy** to foster partnerships and leverage finance for priority goals such as the Global Energy Alliance for People and Planet (GEAPP). Innovative structures such as the International Financing Facility for Education (IFFEd) can greatly leverage donor finance and paid-in capital through sovereign guarantees. Such guarantee-based structures can mobilise much larger sums than the direct donor contribution or even the MDB paid-in capital models.

Another way to mobilise debt-free finance is through voluntary carbon markets, as discussed in section 4.9.

These forms of innovative financing should be thought of as additional to, not substitutes, for ODA. The demands on ODA are growing, in the face of both COVID-19 and climate change. SDRs can provide additional fiscal space for countries and could be used to buttress spending on specific climate purposes through the Resilience and Sustainability Trust. Philanthropic organisations can work alongside ODA, helping fund global public goods and focus international attention on growing issues. But neither of these financing streams can substitute for either the volume or breadth of ODA.

4.8. Private capital flows

Private finance rapidly exited developing countries at the start of the pandemic. Foreign direct investment (FDI) fell by 35% in 2020 (UNCTAD, 2021), and although global FDI flows recovered strongly in 2021, the recovery was uneven, with developing economies, and least developed countries especially, experiencing more modest recovery growth than advanced economies (UNCTAD, 2022). Greenfield investment project announcements were down by 42% in developing countries in 2020, and equity investment flows fell by 50% (UNCTAD, 2021).

While there is scope to scale up public finance for sustainable investment by boosting and better managing fiscal space and MDB balance sheets, ultimately the required levels of investment far exceed public sector capacity. Private investment and finance willing to bear commercial risk must step up and help to fill the gap. Given the scale of the investment needs and financing gaps, mobilisation of private finance for climate and nature will have to increase many times over from current levels.

Our approach calls for an approximate doubling of private lending between 2019 and 2025, for an incremental \$395 billion.

Mobilising private finance at scale will require tackling the constraints that have been holding back both projects and finance (Lankes, 2021):

1. **Lack of markets upstream:** Impediments range from macroeconomic factors and shortcomings in sector policy and regulation, to contract enforcement, governance and public sector management, all underpinned by often weak institutional capacity. The Climate Finance Leadership Coalition (CFLI) has laid out expectations for the sector investment framework from a private climate investment perspective (CFLI, 2021). The pattern of EMDE clean energy finance shows a strong correlation with its index of policy strength.
2. **Lack of projects:** Bottlenecks exist in project preparation and development, i.e. getting projects to investment-readiness at scale, especially for sustainable infrastructure. This is despite the considerable attention that this area has received at least since the 2012 G20 and the setting up of many donor-supported project preparation facilities. Poor availability of risk capital for project development is as much of a constraint as insufficient technical expertise is.
3. **Lack of mobilisation tools:** An atomised financing landscape offers only limited access to institutional investors, largely due to risk factors and the absence of transparent, sizeable and liquid asset classes. Institutional investors might potentially offer scale, but they also require scale.

The private sector is ready to step up (see, for example, the private sector initiatives covered in Table 4.3), but policy reforms are needed to tackle underlying constraints and connect private capital to investment opportunities (HLAG, 2022).

A major share of the required additional investment will be for sustainable infrastructure in EMDEs, particularly for energy. These investments are front-loaded, long-term and capital-intensive and are concentrated in underdeveloped financial sector and revenue models, with a lack of investment-grade assets, high cost of capital, short tenors in local currency, and weak financial safety nets; these characteristics mean that a comprehensive policy package must:

- Tackle constraints in the international financial architecture to create change at the system-wide level, shifting the financial system as a whole towards supporting the transformation of the real economy.
- Deepen local financial markets in EMDEs and enable them to fund sustainable assets.
- Develop new instruments that can attract new investors to EMDEs, at scale.
- Support project pipeline creation and growth.
- Increase mobilisation through support to policy reforms, guarantees, blended finance and catalytic instruments. (HLAG, 2022)

The MDBs have a unique role to play in mobilising private finance. MDBs have substantial experience with de-risking private capital in the context of investment projects, during the construction and operational phases, or providing ‘stamps of approval’ by co-financing. The International Finance Corporation, for example, accounts for just under one-half of all private capital mobilisation by official bilateral and multilateral development agencies combined. Others could learn from its experience. Total long-term private and institutional capital mobilised by the MDBs and bilateral DFIs for low- and middle-income countries was \$63.6 billion in 2019. Of this amount, 32% was direct mobilisation and 68% was indirect; \$6.7 billion was mobilised in low-income countries (MDBs and DFIs, 2021). There is scope for mobilised capital to play a far larger role, especially in infrastructure financing. A priority for MDB activity should be to increase mobilisation ratios, by allocating capital much more catalytically through the use of catalytic instruments.

Blended finance, which combines concessional public funds with commercial funds, can be a powerful mobilisation tool, helping to match risk-adjusted returns to investor requirements. Some forms of blending can help reduce or eliminate risks, but mostly blending reallocates risk to (public) parties that are in a better position to shoulder it (Lankes, 2021). For blended finance to scale-up with the necessary urgency, the focus must shift from individually tailored projects to portfolio-level approaches. For project development this means replicating, delegating and defragmenting project preparation support, and simplifying and standardising documentation. For mobilising finance downstream it means standardising, aggregating and creating asset classes and electronic funding platforms (Lankes, 2021).

Given the urgency to act and scale up private finance for climate and nature, it is crucial to give common overall direction to these efforts at the country level. Country/sector mobilisation platforms, as proposed at the Venice G20 of July 2021 and by GFANZ, could provide a focal point for consultation and coordination, combining the development of Long-Term Strategies and Nationally Determined Contributions, translating these into shared action and engaging the private sector, and providing support at the policy and institutional level to tackle upstream constraints (see section 3.4). Of particular importance will be setting up structures for risk mitigation that can unlock private finance at scale. As underlined by the UN-affiliated Global Investors for Sustainable Development Alliance (GISD), these efforts should be backed by leading governments – including through the governance of DFIs and MDBs – who must set ambitious targets for mobilisation.

Table 4.3. Private sector-oriented 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.	<p>Define and promote best practices in emissions reductions and net-zero targets in line with climate science.</p> <p>Provide target setting methods and guidance to companies to set science-based targets in line with the latest climate science.</p> <p>Include a team of experts to provide companies with independent assessment and validation of targets.</p> <p>Serve as the lead partner of the Business Ambition for 1.5°C campaign.</p>	<p>Covers 1,970 companies in 60 countries and nearly 50 sectors, of which:</p> <ul style="list-style-type: none"> • 970 with science-based targets. • 936 with commitments to 1.5°C.
Glasgow Financial Alliance for Net-Zero (GFANZ)	Led by Mark Carney and Nigel Topping	2021	Bring together the financial sector to accelerate the transition to a net-zero economy.	<p>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 Race to Zero criteria.</p> <p>Covers 7 key areas: sectoral pathways; real economy transition plans; financial institution transition plans; portfolio alignment measurement; mobilising private capital; policy; building commitment.</p>	<p>Unites leading sub-sectoral net-zero initiatives that are in the UN's Race to Zero campaign: 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).</p> <p>Members include nearly 300 financial firms responsible for assets of roughly \$90 trillion.</p>

Name	Founders	Date	Topic	Objectives	Impact
Finance to Accelerate the Sustainable Transition-Infrastructure (FAST Infra)	<p>Started under the auspices of the One Planet Lab as collaboration between HSBC, the OECD, the IFC, GIF (World Bank) and CPI.</p> <p>Evolved as a broad-based private-public partnership involving banks, asset managers, governments, MDBs, NDBs, academics and NGOs.</p>	2020	<p>Develop sustainable infrastructure into a deep liquid asset class.</p> <p>Scale-up investment in sustainable infrastructure in EMDEs.</p>	<p>Develop a consistent, globally applicable labelling system for sustainable infrastructure assets.</p> <p>Develop 4 market mechanisms to mobilise private investment at scale 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.</p>	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	<p>Multi-stakeholder platform to drive credible, net-zero aligned participation in voluntary carbon markets (VCMs).</p> <p>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.</p>	<p>Immediate priorities are to:</p> <ul style="list-style-type: none"> • 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. 	<p>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.</p> <p>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.</p>

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.	<p>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.</p> <p>The commitments brought forward need to meet a minimum set of criteria.</p>	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 (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.	<p>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:</p> <ul style="list-style-type: none"> • Implement a strong governance framework on climate change; • Take action to reduce greenhouse gas emissions across the value chain and; • Provide enhanced corporate disclosure. 	<p>615 investors engaging the world's largest GHG emitting companies.</p> <p>\$60 trillion in assets managed by investors participating in the initiative.</p> <p>167 companies being engaged through the initiative across the planet.</p> <p>80%+ global industrial emissions estimated to be covered by focus companies.</p>
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.	<p>Supporting policymaking to mobilise private climate finance.</p> <p>Mobilising investments for sustainable infrastructure in emerging markets.</p>	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.	<p>Mobilise finance and investment.</p> <p>Scale-up investment solutions in developing countries.</p> <p>Enhancing the impact of private investment on sustainable development.</p>	Rally 30 leaders of major financial institutions worth \$16 trillion.
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.	<p>Several programmes aimed at creating global engagement, inspiring change and accelerating investments towards sustainable markets:</p> <ul style="list-style-type: none"> • 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). 	<p>450+ CEOs have pledged support for the Terra Carta in the first year</p> <p>45 global organisations have been awarded with the Terra Carta Seal</p> <p>18 CEO-led task forces have been established</p>

4.9. Cross-cutting issues

A few cross-cutting issues deserve special mention in the financing discussions. The sections below discuss climate finance, the Leave No One Behind agenda, and the issue of support to middle-income countries.

Climate finance

The commitment made by developed countries at COP15 in 2009, formalised at COP16 and reaffirmed in the Paris Agreement 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.

Donors collectively fell short of the goal in 2020. While there has been progress in both bilateral and multilateral public finance flows since 2013, climate finance flows attributable to developed

countries were around \$20 billion short in aggregate of the \$100 billion per annum target by 2019. This is indicated by the most recent biennial investment of the Standing Committee on Finance, annual assessments by the Organisation for Economic Co-operation and Development (OECD), and the review of the UN Independent Expert Group on Climate Finance.

As argued in this report, international climate finance is critical to helping developing countries meet two urgent and overlapping needs. The first is the imperative and opportunity for a strong and sustainable recovery and to build back better from the COVID-19 pandemic. The second is sustained transformation to accelerate the transition to a net-zero and climate-resilient future.

Climate finance must be increased urgently, to ramp up investment in sustainable infrastructure and accelerate energy transitions, to scale up investments in climate change adaptation and resilience, especially in low-income and vulnerable countries, and to invest in the restoration of natural capital (through agriculture, food and land use practices) and biodiversity. As set out earlier in this report, emerging markets and developing countries other than China will need to invest around an additional \$0.8 trillion per year by 2025 and close to \$2 trillion per year by 2030 on these priorities.

About half the needed resources could come from improved domestic resource mobilisation, including tax and subsidy reform and carbon pricing. But international climate finance must also step up. In the policy note *Beyond the \$100 billion: financing a sustainable and resilient future* prepared for COP26, Bhattacharya and Stern set out a five-point action plan for scaling up international climate finance:

1. Donors must double bilateral climate finance to \$60 billion by 2025 from its 2018 level.

Concessional finance from bilateral donors is the most critical component of the \$100 billion commitment. It is central to COP26 priorities, including adaptation and resilience, nature and biodiversity and support for poor and vulnerable countries. 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.

There is also an urgent need to increase the *level of grant financing* from its present low amount (\$12 billion in 2018) and to ensure that *at least half of concessional climate finance supports adaptation and resilience objectives, including by an immediate doubling of public climate finance for adaptation.*

In 2021 in the lead-up to the COP26 conference, several bilateral donors and multilateral institutions came forward with more ambitious commitments. Based on a detailed assessment of these plans with the technical support of the OECD Secretariat, the Delivery Plan concludes that “developed countries will make significant progress towards the US\$100 billion goal in 2022 and express confidence that it would be met in 2023. The data also gives us confidence that we will likely be able to mobilize more than US\$100 billion per year thereafter.”

The Delivery Plan also acknowledges the need to tackle shortfalls in the quality of climate finance. These include its poor predictability, an inadequate focus on adaptation and on poor and vulnerable countries, a low share of grants, and difficulties in access to climate finance, especially by poor and vulnerable countries.

2. Donors should step up their financing of the multilateral concessional funds – starting with ongoing replenishments – given their important catalytic and leveraging role.

The funds that operate under the climate convention, notably the Green Climate Fund, the Global Environment Facility (which is in the midst of a replenishment) and the Adaptation Fund, are of special significance. The successful replenishment of the International Development Association is also critical, given that it is the largest source of funding for climate action in low-income countries. A scaled replenishment of the African Development Fund is the next priority. Other multilateral funds that have an important role to play on the climate agenda and will need increased support are the Climate Investment Funds, including its new Accelerating Coal Transition (ACT) and Renewable Energy Integration facilities, and the Global Infrastructure Facility. There are smaller multilateral instruments such as the Systematic Observations Financing Facility (SOFF) that are filling important gaps on climate action and need urgent funding. A move to a more predictable and coherent system of financing these multilateral instruments will be needed over time.

3. The multilateral development banks (MDBs) must be prepared to triple their level of financing by 2025 from their 2018 levels.

MDBs need to use all their instruments at this moment of crisis to greatly expand their support for green recovery and sustained transformation in developing countries, encompassing both large emitters and poor and climate-vulnerable countries. MDBs can help countries to unlock investments and *increase the flow and reduce the cost of capital* by reducing, managing and sharing risk. The joint statement from the MDBs issued at COP26 highlights the significant scaling up of their climate activities since the Paris Agreement and commits to raising ambition further. The second edition of the Finance in Common Summit on 19–20 October 2021 brought together the entire development finance community on the achievement of the 2030 Agenda and the Paris Agreement, with a focus this time on the transformation of food systems for food security, adaptation to climate change and the preservation of biodiversity.

As MDBs and DFIs ramp up their efforts, they will help countries greatly increase the scale of investments to support climate and sustainable development, and in turn must be prepared to provide and mobilise the necessary scale and mix of financing. All means must be explored to increase the scale of financing, including the review of capital adequacy methodologies by the taskforce established by the G20, more effective use of lending capacity and further steps on balance sheet optimisation. Shareholders must also be prepared to support proactive capital increases and alleviate specific lending constraints, for example to large borrowers, to ensure that ambitious climate transition programmes are not blocked because of a lack of financing.

4. The private sector and the official sector must work together to greatly expand the mobilisation of private finance.

Recent trends underscore the tremendous potential for the private sector to undertake climate investments in developing countries – including for energy transitions – and to mobilise and channel financing. Blended finance can help unlock investments that would not otherwise materialise and mobilise private financing. However, far too little private finance is being mobilised today; it will have to increase many times over. In particular, private finance for sustainable infrastructure and climate is being held back ‘upstream’ by

shortcomings in the policy and regulatory framework, a scarcity of well-prepared, bankable projects, inadequate mechanisms to mitigate risks, and a lack of financial channels connecting deep sources of funds with investments.

Several private sector coalitions are now seeking to tackle these constraints and scale up financing targeted at sustainable investments in developing countries. These include FAST-Infra, the Climate Finance Leadership Initiative, the Global Investors for Sustainable Development and now, very importantly, the Glasgow Financial Alliance for Net Zero.

Stepped-up efforts have also been seen from the Global Infrastructure Facility, the MDBs and other stakeholders to enhance the partnership with the private sector, including through the country mobilisation platform announced by the Global Infrastructure Facility with the MDBs at the G20 conference in Venice in July 2021. As Lankes (2021) underscores in a paper on blended finance for climate and nature investments, “the world must scale up by linking public and private initiatives and working in a joined-up manner, harnessing private finance as an agent for the global public good”.

5. All parties should pursue innovative solutions to scale up and leverage climate finance.

This should include using the available firepower of the pool of unutilised Special Drawing Rights (SDRs). The G7 and the G20 have committed to the reuse of \$100 billion of SDRs. The IMF is proposing to use part of this pool to buttress support for the Poverty Reduction Growth Trust and the recently approved Resilience and Sustainability Trust to support climate action in low-income and vulnerable middle-income countries. Beyond this, SDRs could potentially be channelled through MDBs and related financing windows such as the Climate Investment Funds.

A second way of mobilising concessional financing is through the strong contributions of private philanthropy, which can meet needs that other donors may not be able to. And a third way to mobilise debt-free finance is through voluntary carbon markets. Mechanisms need to be put in place to assure the quality and integrity of such finance, but there is scope to mobilise financing in the many tens of billions of dollars that could be used for priorities such as accelerating the phase-out of coal and the restoration of forests and degraded land.

Acting on these five priorities can help deliver climate finance of the right scale, right kind, and in the right timeframe. There is now a great opportunity to join up public and private initiatives to deliver results country-by-country, supported by structured partnerships at the international level. As countries move forward with ambitious emissions reduction and just transition programmes, as South Africa and India are committing to, or adaptation and resilience programmes, as many vulnerable countries are doing, they must be assured of effective and timely support. Without this support, they will fail in meeting their ambitions, and the world will fail in meeting its collective climate goals.

Leave No One Behind agenda (LNOB)

Embedded in the Sustainable Development Goals is the principle of ‘leave no one behind’, calling for targeted, last mile investments to reach the poorest and most vulnerable. There is a risk of there being less focus on the LNOB agenda in the face of competing priorities for climate action and nature preservation. The inclusion of human capital in our big-push investment strategy acknowledges the centrality of this aim, for while countries need green infrastructure investments to enable economic transformation, this cannot come at the expense of education and health investments in low- and

middle-income countries. Indeed, human capital investments are complementary to infrastructure investments. In macro-modelling work done by the IMF, the share of incremental human capital spending in the optimal spending package always has a balanced expansion of human capital and infrastructure (Buffie et al., 2020).

The LNOB agenda starts with low-income countries. Low-income countries collectively have a small GDP (around \$550 billion expected in 2025), so comparatively small amounts of international finance can contribute very substantially when viewed as a percentage of GDP. Official development assistance can have an even greater impact on the LNOB aim when it is targeted towards the specific sub-national regions in which the bulk of poor people reside. These regions are largely located in Africa, as are most of the countries where the SDG1 (no poverty) and SDG2 (zero hunger) targets are off-track. South Asia also has poor Human Development Index scores, but in some countries in the region the potential for domestic resource mobilisation is larger, implying lower reliance on international aid.

The LNOB agenda takes on added importance in a world where public goods are becoming important. The spillovers associated with failed states, cross-border migration, pandemic surveillance, and nature preservation cannot be contained without a core LNOB agenda. In middle-income countries, the transition to a low-carbon economy will not happen without a LNOB agenda, either.

The moral and spillover co-benefits of an aggressive pursuit of the LNOB agenda, along with its complementarity with other economic transformations, make it important to retain as a priority for international finance.

Middle-income agenda

Some countries are highly vulnerable to global economic shocks, largely as a result of geography or an undiversified economy. A group of 48 countries form part of the V20, a group of climate vulnerable states, including low-and middle-income, landlocked, and small island developing states (SIDS). These countries are individually small but collectively significant. They are home to 1.2 billion people, have an aggregate GDP of \$2.3 trillion (about one-tenth of all developing countries' wealth, ex-China), and account for 5% of global carbon emissions. Because of their vulnerability, they face obstacles in accessing private capital markets, so must rely more heavily than other countries on official sources of finance.

In addition to their current vulnerability, some V20 countries have very large spending needs to adapt to climate change and to make their economies more resilient. These are estimated at up to 10% of GDP (UNEP, 2021); SIDS by themselves are unlikely to be able to finance this level of spending without international support and may have to cut back on spending if access to capital markets deteriorates, with rising risks.

Yet many of these countries have been excluded from recent debt efforts, including the Debt Service Suspension Initiative (DSSI) and G20 Common Framework, which were limited to low-income countries. More efforts are needed to specifically target this group. Several proposals have been put forward, including the recently approved Resilience and Sustainability Trust, resourced by a reallocation of surplus SDRs and a proposal by the Economic Commission for Latin America and the Caribbean (ECLAC) for a Caribbean Resilience Fund (Barcena, 2020). Civil society organisations, supported by several small-island state governments, have put forward a proposal for a Climate Damages Tax (Richards et al., 2018). This would be a levy on each ton of coal, oil or gas extracted, the proceeds of which could be used to defer the costs of extreme weather hazards in vulnerable

countries. Regardless of the mechanics, better understanding of country vulnerability and the development of mechanisms to manage it should be priorities.

Vulnerability is one aspect of the middle-income agenda. Another is the growing importance of large middle-income countries in global climate mitigation. As others have noted, “it is unrealistic to expect to keep global warming well below 2° Celsius if middle- and lower middle-income countries do not participate fully in the green transformation” (Dervis and Strauss, 2021). It is EMDEs other than China that have limited ability to mobilise upfront affordable finance to put them on a green trajectory that will make the difference in global warming. These EMDEs lack domestic fiscal space, have been phased out of most ODA, and often face single borrower limits in their access to multilateral funds. Some rely heavily on coal and face additional issues in decommissioning existing plants, while expanding new generation capacity at the same time. Special attention is needed to ensure that these countries also have access to international finance.

4.10. Additional policy implications

While ambitious, the financing Grand Match is achievable if there is sufficient political will in the international community to unify disparate strands of agreed-upon agendas for climate mitigation and adaptation, Leave No One Behind, and biodiversity into a single agenda. Alongside the conversations on spending and financing, however, a number of other policy reforms need to occur:

- **First, the international community must provide clarity on sovereign debt restructuring efforts post-COVID.** While 2020 did not lead to the massive scale defaults many feared, the situation is still tenuous. Countries took on additional debt to finance needed investments in health care, procurement of personal protective equipment (PPE), vaccines and economic supports. While this was the appropriate policy response to a short-term shock, it has contributed to rising debt stocks in many developing countries. The private sector will be hesitant to invest in projects in vulnerable developing countries without additional clarity from the international community about how it plans to deal with rising debt burdens. The G20 Common Framework represents a step forward, but it leaves out many middle-income countries that are also vulnerable.
- **Second, greater efforts are needed to curb illicit financial flows.** Without efforts to crack down on enablers – the lawyers, real estate agents and corporate subsidiaries in developed countries that facilitate unchecked financial transfers – and additional transparency and reporting support for developing countries, there is too much potential for international official finance to leak back out to advanced economies (Andersen et al., 2021).
- **Third, MDB shareholders need to provide a clear vision for the higher level of ambition and activity expected from the MDBs,** with clarity on whether the scale of activities is commensurate with the objectives of accelerating economic transformation. The MDBs have the capacity to have far greater impact. Yet they are constrained by a perception that shareholders are highly risk-averse. An expanded public discourse on expectations, strategies and outcomes is needed. The G20 International Financial Architecture (IFA) Working Group has commissioned an independent review of MDB capital adequacy frameworks. This is consistent with G20 Finance Ministers and Central Bank Governors’ steer to “explore potential new measures to maximise MDBs’ development impact, according to their mandates and while protecting their credit ratings” (G20 Communiqué, April 2021), and with the G20 work on balance-sheet optimisation.

- **Fourth, bilateral donors must commit to higher ODA targets.** Only a handful of countries have ever met the UN goal of 0.7% of gross national income. The financing package above is modest in its expectations for ODA – it envisages a 0.15% GDP increase in ODA by 2025. Delivery on these promises, backed by clear outcomes and matched by increases in DRM, is needed to build credibility for the notion that aid works and benefits the poorest people on the planet.
- **Fifth, greater debt transparency must be a cornerstone of any new lending efforts.** There must be a coordinated process for reconciliation between creditor and debtor books, and some level of reciprocity provided by private creditors. Country platforms could be one way of organising this effort, ensuring all actors have an overall picture of the country's investment and financing portfolio.

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