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Principles for Allocating Finance for Development and Climate Goals

This paper includes valuable research and analysis provided by McKinsey and Company.

Executive summary

1. In June 2023, the Foundation published “Climate and Development Finance: a transition framework for all”, which highlighted that policymakers in all countries face three critical and interrelated imperatives:^{1 2 3}

- (i) Reducing poverty and accelerating human development in developing countries (“development”).
- (ii) Reducing the burden of ‘baked in’ climate change which falls disproportionately on the poorest (“adaptation”), and
- (iii) The main purpose of preventing further climate change by rapidly reducing global greenhouse gas (GHG) emissions and getting on lower carbon development trajectories (“mitigation”).

The June paper also noted that from a global perspective, all three imperatives must be addressed with urgency, and that all countries need to adjust to a new economic reality imposed by climatic and planetary boundaries. At the same time, we know that different countries face different priorities amongst the three imperatives and different levels of urgency to move to lower carbon trajectories—based *inter alia* on the country’s contributions to climate change mitigation.⁴ And all this must happen against a background of inadequate and increasingly constrained public financial resources—whether from domestic or external sources—and when the development community has not yet been able to realize the promise of mobilizing private capital at scale. So, in addition to advocating for more development financing and further cost-reducing innovation, achieving these three imperatives with urgency requires all countries to (i) prioritize investments that have the potential to significantly impact progress toward the global goals and (ii) efficiently match the different pools of financing with these investments.

2. This paper takes forward the conclusions of the June 2023 paper in three main ways.

First, we identify countries’ potential contribution to the three imperatives, given the size of their current development, adaptation, and current and future mitigation gaps. Second, we lay out an approach to identify examples of some of the highest impact investments to reach global and country-level goals for development, adaptation, and mitigation. The paper also identifies investments that can have direct overlaps, co-benefits, and tensions with the different goals. Third, we outline principles for matching types of finance to different types of investments to make the fastest progress towards achieving

¹ See, Climate and Development Finance: A transition framework for all, available at <https://www.gatesfoundation.org/ideas/articles/melinda-foreword-climate-and-development-finance-framework>

² Although we discuss the three imperatives separately, we recognize that they are closely interrelated. For example, most development investments will need to be done with an eye to climate-resilience and adaptation. Similarly, in many countries, investing in green technology may be both a job creation *and* a mitigation strategy. In this paper, we categorize investments based on whether their *primary* or *principal* objective is development, adaptation or mitigation, fully cognizant of the fact that some of these investments can have implications for other imperatives.

³ In both the earlier paper and this one, we do not consider investments to cover loss and damage as a separate category; rather we treat them as being linked to investments for development, adaptation, or mitigation.

⁴ This idea is not new and is already embodied in the Nationally Determined Contributions (NDCs) that countries submitted after the Paris Agreement in 2015.

development, climate adaptation and climate mitigation goals based on the risk and return profiles of each investment, and the availability of alternative financing sources.

3. The audience for this framework includes policy makers responsible for setting investment priorities in their own countries, the donor community, and the international institutions that are charged with supporting countries through the allocation and mobilization of capital for development and climate investments. The scale and urgency of the actions required to meet these three imperatives, coupled with the financing constraints, emphasize the necessity for a systematic approach to prioritize investments. The global conversation on resource allocation has become increasingly polarized with climate and development proponents being pitted against each other in the fight for scarce resources. For this reason, we need a framework for decision making that allows **all countries** to see themselves as part of the global system and where the discussions are not framed as “either or” but rather as “both and”. However, to make such an approach relevant for decision makers, it must reflect the reality of resource constraints even in the face of efforts to raise additional resources, and the associated reality that investments will need to be prioritized. In this context, we recognize the primacy of country ownership of priorities and choices, but we interrogate when it may make sense to provide additional financial incentives to support stronger actions in countries and sectors where there is a significant potential to accelerate progress towards global goals.

4. Our analysis suggests that concerted action is needed to advance on all imperatives, but not every country needs to focus on the same challenges in a situation where money and time are short. For example, there is a stark contrast between the impact of development investments (e.g., health, education, nutrition, etc.) and mitigation investments in low-income countries (LICs). By and large, LICs face significant development challenges with 40 percent of their populations living in poverty, and with 36 percent of the global poor living in these countries. But their GHG emissions constitute just 2 percent of the global total at present, expected to rise to 3.2 percent by 2050 under one possible future scenario of the world’s current emissions trajectory.⁵ Thus, reducing poverty in LICs and LMICs is critically important to reach global development goals, while reducing GHG emissions in MICs and HICs is key to reaching global climate change mitigation goals.

5. Efforts to address development, adaptation, and mitigation can be complementary, but the most impactful actions for each imperative often differ.

- Where countries face multiple investment needs and limited financing, there may be a strong case to prioritize investments that address these needs simultaneously—that is, investments with direct overlaps between goals. An example of investments with direct overlaps is climate-resilient agriculture—which has the potential to advance development and adaptation goals, and often also mitigation goals. However, our initial analysis finds that there are few true **direct overlaps** – that is, areas where the investment needs are high in, say, two of the imperatives and actions contribute equally to both objectives – are limited.

⁵ Network for Greening the Financial System (NGFS) emissions scenario, Phase 4

- Investments with **co-benefits**—that is, an investment with a high impact on one goal and also a positive but not an equally high impact on a second goal—are more frequent. For a given dollar of investment, a careful analysis is needed to choose the actions to meet the goal in the shortest time frame, rather than choosing actions that may have positive impacts in several areas, as this could risk a suboptimal allocation of finance and slow down progress on all objectives.
- Finally, while we need to move on all fronts *at the global level*, in many cases, **tensions** can exist between different investments *at the country level* - both in the short- and medium-terms. For example, improving development outcomes by increasing LIC and LMIC access to affordable energy using fossil fuels may conflict with the goal of reducing GHG emissions in the short-term. , The decision on whether or not to use fossil fuels in this scenario may also be influenced by consideration of the cost of stranded assets and a steeper path of decarbonization in the future. These situations are complex and require a multi-faced decision-making process looking at available financing, as well as development and climate impacts in the short- and medium-terms.

6. The current allocation of financial resources is generally not commensurate with the size and nature of the challenges across the three imperatives. For example, countries like the Democratic Republic of the Congo (DRC) and Ethiopia receive lower levels of ODA than their share of global poverty. In terms of adaptation finance, South Asia receives a significantly lower share of global funding relative to its global share of climate vulnerable people. While various factors, including geopolitics, contribute to these misalignments, there are allocative inefficiencies within the global development finance architecture that the analysis in this paper could help address.

7. The increasingly constrained funding environment that we face today makes it even more urgent to agree on a set of principles to guide resource allocation across the development and climate finance ecosystem—a so-called “fit for purpose” financing framework. Once country-specific priority investments are identified to address the relevant imperatives, this paper lays out a financing framework to help match different sources of available financing—from domestic and external sources—to each investment based on risk and return characteristics of each investment.

8. The critical actions to address climate and development cover the full spectrum of risk and return expectations – from pure ‘public goods’ to attractive investments for private capital. High-impact investments aimed at accelerating human capital development and enhancing resilience to climate change in LICs typically rely on domestic public resources, grants (including ODA), and highly concessional loan instruments. This is because these types of investments often have low financial returns and public benefits which accrue over long horizons or reflect costs avoided. However, these international and domestic public resources are in scarce supply. At the same, there are some investments – mostly for mitigation actions – that have viable revenue streams and are suited to private investment or blended finance.

9. A financing framework based on the following principles can improve the effectiveness of capital deployment, streamline operations, and attract new capital to scale up funding in the development finance ecosystem.

- (i) **Expand the total amount of financing.** Given the significant challenges that the world must overcome in a limited amount of time, business-as-usual resource levels will simply not be sufficient to address the need to end poverty, address the growing impact of climate change and address the fall-out of conflicts in different parts of the world. The global community needs to urgently identify ways to expand the available pool of financing—including by committing additional donor funding, responsibly stretching available resources in the international development finance ecosystem, enhancing equitable domestic revenue mobilization, and finding much better ways to tap the different pools of private capital.
- (ii) **Match financing flows and instruments to their best uses.** A mix of grants, loans at varying degrees of concessionality, domestic revenues, and private capital are all essential elements of the financing needed to meet the current challenges. Grants and highly concessional resources are the scarcest and their use must be directed to where they can have the greatest development impact and where there is no appropriate alternative based on risk and return considerations. This will require public finance institutions to ring-fence concessional finance, the scarcest forms capital, to support the most acute development and climate adaptation needs of lower income countries. It will also require careful consideration of limited use of concessional financing to leverage private financing especially when (i) institutional, regulatory and policy arrangements are conducive to private investment; and (ii) when the potential contribution by the country to closing global gaps is significant.
- (iii) **Even with more financing and better matching of financing to development and climate investments, progress towards the global goals will require stronger efforts to innovate and drive down costs.** The global community should make more concerted efforts to accelerate technological innovation to lower costs of interventions in all sectors, especially in green technology, which would not only hasten the adoption of these technologies and reduce the overall funding need.

10. To underpin these principles, three important additional areas of reforms are critical.

- The first is better measurement and tracking of needs and capital flows to foster a more coherent and globally aligned climate and development finance agenda.
- The second is for all countries to put in place sound pricing policies, regulatory frameworks, and governance arrangements to encourage and sustain large-scale and long-term investments.
- The third is to make stronger efforts at resetting price signals to induce the necessary shifts in economic activity toward decarbonization as well as in the flows of finance. Resetting price signals will require significantly reducing the scope of fossil fuel subsidies in both advanced and developing countries and putting a globally agreed price on carbon emissions.

I. Introduction⁶

The global community has come together on several occasions over the past two decades to set urgent and ambitious goals for development and climate change—embodied, inter alia, in the SDGs, and the Paris Agreement. The first goal is to accelerate human and economic development to durably improve outcomes for the ~700m people who still live under the international poverty line.⁷ The second is to lessen the burden of climate change that is already baked in from past emissions, particularly those impacts falling disproportionately on the poorest people and on lower income economies. The third is to reduce global emissions of greenhouse gases, in line with the Paris Agreement, and to avoid the worst physical impacts of climate change. This would require significantly and rapidly reducing global greenhouse emissions from today's levels of ~58 gigatons of carbon dioxide equivalent (across CO₂, CH₄, N₂O, and F-gases) today to net zero by 2050.⁸

Although meaningful progress has been and is being made on all three imperatives, it has not been fast enough to meet the agreed global goals, in good measure because funding these investment needs has proven challenging.^{9,10} While increasing overall financing will be essential, spending it efficiently and effectively will be necessary if we take the global goals and their timelines seriously. Available funding remains substantially lower than what is needed to achieve the SDGs—the annual SDG funding gap is estimated to have risen from \$2.5 trillion in 2014 to \$4.2 trillion in 2023 in part because of the setback in development since the pandemic, the food and fuel price shocks, and the intensification of climate shocks.^{11 12} Moreover, public funding is constrained and becoming more so as donor governments face tight fiscal conditions and reduce their aid flows and recipient countries have run through all available fiscal buffers after more than 4 years of back-to-

⁶ This paper includes valuable research and analysis provided by McKinsey and Company. The paper also benefitted from discussions during the Bellagio Convening on Climate and Development Finance, 2024.

⁷ World Bank 2023, World Development Indicators

⁸ Technical dialogue of the first global stock take: Synthesis report by the co-facilitators on the technical dialogue, United Nations Framework Convention on Climate Change, September 2023. The IPCC has found that to limit global warming to 1.5°C with no or limited overshoot (with a greater than 50 percent probability), GHG emissions would have to be reduced by 43 percent by 2030 and carbon dioxide emissions by about 100 percent by 2050 in relation to modeled 2019 emissions levels. (Each of those values is the median of the estimates in various scenarios.) See Climate change 2022: Mitigation of climate change, IPCC, 2022

⁹ See for example, Sustainable Development Solutions Network (SDSN) 2023, Sustainable Development Report, available at <https://dashboards.sdgindex.org/downloads>

¹⁰ See Technical dialogue of the first global stock take: Synthesis report by the co-facilitators on the technical dialogue, United Nations Framework Convention on Climate Change, September 2023.

¹¹ See Prizzon, A., M. Josten and H. Gyuzalyan (2022), Country Perspectives on multilateral development banks—A survey analysis, ODI, p.75. <https://odi.org/en/publications/country-perspectives-on-multilateral-development-banks-a-survey-analysis/>

¹² The gap represents the difference between the average annual spending needed from 2023 to 2030 to accelerate progress towards the SDGs and the projected government expenditure under a business-as-usual trajectory. UNCTAD SDG costing, 2014 and 2023. Other funding gap estimates are contained in The Independent High-Level Expert Group on Climate Finance, 2023, “A Climate Finance Framework: decisive action to deliver on the Paris Agreement”. Other estimates of funding needs are contained in publications such as McKinsey Global Institute 2022, “The Net Zero Transition: What it would cost, What it could bring”.

back exogenous shocks.¹³ At the same time, interest rates have risen making the available market financing more expensive. Finally, the magnitude of policy, regulatory and institutional changes needed for durable progress including in attracting private capital—especially in LICs and LMICS—has been very slow.¹⁴

The Foundation’s June 2023 white paper argued for a “fit-for-purpose” framework to guide financial resource allocation for development, climate mitigation and climate adaptation. The paper recommended that such a framework must be sensitive to a country’s status in the transition from low to high-income as they implement policies and projects to accelerate progress against three critical global imperatives: human and economic development, moving to a green economy, and building resilience against current and future climate risks. The paper also argued that countries’ own priorities should drive policies, within global limits, and that different types of financing flows should be fit-for-purpose based on the availability of alternative financing sources, as well as the nature of the investments in terms of risk and return.

This paper elaborates on the earlier work by acknowledging that we have a complex, multilayered set of investment decisions that countries need to make to achieve their commitments to reach the SDGs and the climate goals under the Paris agreement. The framework for investment decisions and associated financing we present here acknowledges that countries’ own investment priorities must always be the starting point. But it also interrogates whether there are any additional efforts needed to ensure we reach the global goals in the aggregate. As the paper shows, in most cases, the goals will be achieved through increased support to countries for their own priorities. However, in a few countries, additional efforts may be needed to accelerate progress towards one or more of the imperatives. These additional efforts range from policy advice, capacity development, but importantly, additional financing on appropriate terms. The extent to which finance – be it grants, concessional loans, the country’s own public resources, private capital – should be used to incentivize this additional effort depends on the country in question and its role in significantly moving the needle on one or more of the global goals.¹⁵

The paper also highlights the critical role of innovation in driving down the “green premium”—the additional cost of green ways of conducting economic activity over standard methods.¹⁶ The cost of technologies that reduce GHG emissions averted has come down dramatically in the past three decades—for example, there has been a 97 percent reduction in the price of both solar panels and batteries. The more the cost drops, the less the need for concessional finance and subsidies to support adoption of these technologies. We argue that the greatest impact that rich countries can have toward a low-carbon future for the world is to double down on research, development and scaling low-

¹³ Kenny, Charles and Z. Gehan, “The Future of Official Aid Flows” Center for Global Development, 2023 <https://www.cgdev.org/sites/default/files/future-official-aid-flows.pdf>

¹⁴ <https://www.worldbank.org/en/publication/worldwide-governance-indicators>

¹⁵ This idea underlies the Just Energy Transition Partnerships (JETP) initiative for climate mitigation.

¹⁶ See Gates, Bill, “Introducing the Green Premiums” <https://www.gatesnotes.com/Introducing-the-Green-Premiums>

carbon technologies, complemented with support to poorer countries to adopt these technologies. We conclude that climate change advocates should push for (i) more technology innovation, through more R&D, coupled with subsidies and taxes where appropriate; and (ii) new public finance on attractive terms to level the playing field in terms of the financing cost of hastening the global adoption of low or zero-carbon methods.

The rest of the paper is organized as follows:

- Section 2 elaborates on the framing of the paper: the starting point, and the approach and the intended audience,
- Section 3 presents the analytical framework and assumptions we use to make the assessment of the gaps and investment needs to meet each of the three global imperatives by groups of countries by income level.
- Section 4 presents an analysis of direct overlaps and co-benefits of actions that would help countries make progress toward the different goals.
- Section 5 takes stock of global flows of development and climate finance.
- Section 6 presents a discussion of the principles around allocating finance to different actions needed to address the three imperatives.
- Section 7 concludes.

II. Background and framing

The scale and urgency of the actions required to meet the three imperatives of development, adaptation and mitigation, coupled with the financing constraints, underscore the necessity for a systematic approach to prioritize investments. The global conversation on resource allocation has become increasingly polarized with climate and development proponents being pitted against each other in the fight for scarce resources. For this reason, we need a framework for decision making that allows **all countries** to see themselves as part of the global system and where the discussions are not framed as “either or” but rather as “both and”. But in the face of continued financing constraints, “both and” does not mean that all countries need to do more and assign the same priority to the different imperatives. Rather, it implies the recognition that since different countries are at different points in their economic development journey, the path towards and urgency of contributing to **both** development **and** climate goals will be different for each country.

In the best of all worlds, the aggregated result of country’s individual efforts would lead to all goals being achieved within the timeline set by the global community. But this is not the reality we are facing today, especially when the necessary financing is not forthcoming from either the public or private sectors and where we still lack core solutions such as

appropriate pricing of carbon and other GHGs. What options do we have to resolve this situation? One option is to urge all countries to move on all three imperatives as urgently as possible. Without additional financing and support, this option is a non-starter. Another option is to support whatever action individual countries are able to take at the pace they are able to do it. This option risks that we will miss the global goals by an even wider margin than on the present trajectory and also risk significant misallocation of resources. The option explored in this paper is to identify underlying principles to allocate development finance as effectively and efficiently as possible--first by prioritizing different types of investments by country and sector based on an assessment of how significantly they can move the needle on each of the three imperatives, and second, by allocating different types of financing for these investments depending on the risk and return characteristics of the investment .

In this framework, prioritization of actions by countries is based on the contribution of these actions to the global development and climate goals. It offers a methodology to (i) prioritize investment needs across climate and development in different countries and sectors, (ii) identify examples of the highest priority actions to address those investment goals, including potential for synergies, and (iii) advocate for the allocation of different sources of financial resources to match the priority investments, based on risk and return considerations in the country and sector in question, and the availability of alternative financing sources. For example, investments in mitigation actions by high income countries should be presumed to be primarily funded through the country's own public resources in combination with private finance as needed. However, an LMIC with a large potential impact on achieving global mitigation goals could be considered for a higher allocation of scarce concessional financing towards high impact mitigation investments.

While the approach taken here should be seen only as an illustrative analytical framework, this type of more granular analysis can form the basis of more meaningful conversations of investment priorities, trade-offs, and allocation of different types of financing. We size the gaps at a country level across each of the three imperatives—development, adaptation and mitigation. This allows us to identify examples of priority actions/investments that countries should consider undertaking to address these gaps. Importantly, this analysis allows us to examine—in a more granular manner than is common in the current discourse—investments which provide large benefits for one or several of the imperatives.

In addition to being an illustrative analytical framework to identify investment priorities, this approach is also useful as a basis for an informed discussion of allocation principles for different forms of financing. Specifically, it allows us to identify the small number of countries where larger investments can help accelerate the achievement of global goals—which, in turn, could be used as the basis for additional financial and other incentives to speed up action relative to the country's prevailing plans.

As such, this is a framework that can be used by policy makers responsible for setting investment priorities in their own countries, the donor community, and the international

institutions that are charged with supporting countries through the allocation and mobilization of capital for development and climate investments. The conclusions of this paper seek to provide guiding principles to help inform investment and financing decisions and to provide an inclusive and productive basis for discussions among policy makers and advocates while also recognizing that other more detailed diagnostic assessments and analysis will be needed when it comes to chalking out specific country-level plans.

This paper complements other work that has been done on investment and financing frameworks. Some of the best-known frameworks include: (i) the report of the Independent High Level Expert Group on Climate Finance—commonly known as the Songwe-Stern report; (ii) World Bank’s Climate Change and Development Reports (CCDRs); and (iii) the Integrated National Financing Frameworks (INFF).

- The Songwe-Stern report notes that, while an investment push is needed across all the Sustainable Development Goals, the key investment and spending priorities must encompass: (i) the transformation of the energy system, which is vital for both development and climate; (ii) responding to the growing vulnerability of developing countries to climate change by accelerating investments in adaptation and resilience and to deal with loss and damage; (iii) investing in sustainable agriculture and repairing the damage to natural capital and biodiversity. The report also calls for an overall financing strategy that uses the complementary strengths of different pools of finance to ensure the right scale and kind of finance and to reduce the cost of capital. The report highlights the mix of external financing sources – including private finance, private finance with risk mitigation, long-term MDB finance, concessional finance (bilateral and multilateral), and grant finance – needed for each investment and spending priority amongst the three imperatives listed above based on the expected risk and return of each investment. The two main differences between the work presented here and the Songwe-Stern report are (i) we take a broader view of the development imperative beyond investments in sustainable agriculture; and (ii) while strongly aligning ourselves with the call for additional financing through all the sources identified in the Songwe Stern report , we ask how the global community should prioritize investments to make the greatest progress towards the SDGs and the Paris goals in the (inevitable) event that financing remains limited and constrained.
- The World Bank Group’s CCDC is a core diagnostic tool to help countries prioritize the most impactful actions that can reduce GHG emissions and boost adaptation and resilience, while delivering on broader development goals. The CCDCs recognize that the results of the diagnostic exercise will need to be translated into a government-owned prioritization and sequencing exercise. The CCDCs provide an excellent basis for countries to plan their investments to take account of overlaps, co-benefits and tensions discussed in this paper. CCDCs have tended to focus on how the countries can mobilize climate financing from the private and public sectors in their country but, until recently, have not explicitly taken a view on the

type of financing that is most well suited for different types of investments, especially in the context of constrained finances.¹⁷

- The INFFs lay out the full range of financing sources—domestic and international sources of public and private finance—to allow countries to develop strategies to increase investment, manage risks and achieve their own sustainable development priorities. They are a tool to help countries strengthen policies, processes, and institutions to overcome obstacles to financing the SDGs at the national level. In the context of the discussion in this paper, INFFs can be used to provide a more detailed and country-specific list of reforms at the country level to maximize the flow of finance for their investment needs.

III. Assessment of the Actions Needed

We start by recognizing that the locus of decision making on investment priorities is and should be individual countries and their governments, but we also note that almost all countries in the world have come together—recognizing the interrelated nature of the challenges facing humanity—to make commitments to address the most urgent problems by setting global goals. Inherent in those commitments is the recognition that the scale of the imperative for climate mitigation, adaptation, and development varies substantially across country income groups, individual countries, and across sectors. This makes it critical to understand how to prioritize investments to make progress on the three goals and where to allocate different types of financing to maximize progress towards them with the greatest degree of urgency and within the current constrained fiscal environment.

Box 1 – Methodology used to estimate development, climate mitigation and climate adaptation needs

As with any analytical framework, we make a number of assumptions to make the analysis and discussion tractable. The conclusions are, of course, sensitive to the selection of indicators and thresholds; for this reason, the conclusions should be interpreted as an illustration of principles to consider when making decisions, rather than firm directions for action.

While dividing up inter-related dynamics over-simplifies a complex reality, for the sake of highlighting the principles in this paper, we divide up three critical imperatives that policymakers in all countries face:

- (i) Reducing poverty and accelerating human development in developing countries (“development”).

¹⁷The Development, Climate, and Nature Crisis: Solutions to End Poverty on a Livable Planet – Insights from the World Bank CCDD covering 42 countries. <https://openknowledge.worldbank.org/entities/publication/c9d962c9-5796-48c4-afc7-9feac8216ab8>

- (ii) Reducing the burden of ‘baked in’ climate change which falls disproportionately on the poorest (“adaptation”), and
- (iii) The main purpose of preventing further climate change by rapidly reducing global greenhouse gas (GHG) emissions and getting on lower carbon development trajectories (“mitigation”).

Although we measure the investment needs in development, climate adaptation and climate mitigation separately, we recognize that the three goals are closely interlinked. And that the interlinkages are especially tight for development and climate adaptation investments in LICs and LMICs—meaning that many development gaps are in part also gaps in climate adaptation in these countries. That said, in this work, we took a stricter approach to identifying high-impact investments that truly contribute just as significantly to both development and adaptation.

We chose three metrics to estimate climate mitigation, climate adaptation, and development “investment needs”, in the technical sense of “potential to contribute to the gap to achieve the global goal”, across countries and country income groups:

- (i) For the first goal (development), we used ***development-related indicators*** from the Sustainable Development Goals (SDGs) and data on progress from the 2023 “Sustainable Development Report” by the Sustainable Development Solutions Network;
- (ii) For adaptation, we looked at ***exposure indicators to different hazards***, drawing from the Notre Dame Gain (ND Gain) dataset. Exposure is defined as the extent to which society and its supporting sectors will be stressed by changing climate conditions by 2050. The six exposure indices considered in the analysis are food, water, health, ecosystem services, human habitat, and infrastructure.¹⁸ We use a population weighted index of the six exposure indices.
- (iii) For mitigation, we used measures of country-level greenhouse gas by emissions by sector and by type of GHG.¹⁹

Development, adaptation, and mitigation are all critical imperatives at the global level, but potential impact and hence investment needs, vary by country. The approach therefore considered how large an individual country’s share of the problem is relative to the size of the global problem to assess how critical it is to address the problem in the given country. Country X’s contribution to reaching the three goals was assessed by

¹⁸ Each exposure component is measured by 2 indicators—food (projected change in cereal yields and projected population change through 2050); water (projected change in annual run-off and ground water recharge); health (projected change of deaths from climate change induced diseases and vector borne disease); ecosystems (projected change in biome distribution and marine biodiversity); human habitat (projected change in length of warm period and flood hazard); infrastructure (projected change in hydropower generation and project change of sea level rise).

¹⁹ Sources: EDGAR-Emissions Database for Global Atmospheric Research. <https://edgar.jrc.ec.europa.eu/>. The Network for Greening the Financial System. <https://www.ngfs.net/en>

considering as country X's share of total global emissions, Country X's share of the total global population living in poverty, and Country X's share of the total global population exposed to climate hazards.

There is an important caveat to this analysis. There are countries—typically small countries—whose individual needs in these areas do not constitute a large share of the *global* total, but where a large share of the domestic population may be affected. We do not examine these cases in detail but provide illustrative examples of how an individual country's needs might be further prioritized between development, adaptation, and mitigation needs.

The analysis of “investment needs” to reach global goals, across country-income groups and individual countries, reveals four insights, which we will explore in more detail below.

- **First, investment needs to meet global goals vary across income groups.** The highest need for poverty reduction and human development exists mainly in LICs and LMICs. Together these countries are home to over 90 percent of the total global poor and where 40 percent and 15 percent of their populations are below the international poverty line.²⁰ By contrast, the challenge of mitigating emissions will need to be tackled in high income countries (HICs) and upper middle-income countries (UMICs), which represent 75 percent of global emissions today and projected to be around 65 percent of global emissions by 2050 under current policies.²¹ If India is included, HICs, UMICs and India account for 85 percent of GHG emissions today, expected to be at 78 percent by 2050 under current policies. Finally, the need for adaptation is spread more evenly across all country groups (explained in more detail below).
- **Second, a closer look at individual countries shows that making wise investments in a relatively small group of countries could substantially accelerate progress on all three fronts globally.** Twenty-three (23) countries represent 80 percent of the total investment needs for mitigation, 29 countries represent 80 percent of the adaptation investments, and 18 countries represent 80 percent of the investment needs for development. With some countries falling in the top 80 percent of investment needs for more than one imperative, we can identify 40 countries that represent 80 percent of the total global needs for all three imperatives. There is an

²⁰ Using the poverty line of \$2.15 per day should be seen as the lower bound when assessing the investment needs for development. People whose income is only slightly above that threshold remain extremely vulnerable to shocks and setbacks. For example, researchers from McKinsey (2023) note “Beyond ending poverty, the next challenge is progressing toward economic empowerment... the level at which people can afford to meet essential needs such as nutrition, housing, healthcare, and education; they also gain a modest sense of security and have reduced risk of slipping back into poverty. Empowerment starts at \$12 per day in purchasing power parity terms globally, with regional variations to account for different norms and costs. As of 2020, some 730 million people lived in extreme poverty, while 4.7 billion were below the empowerment line.” <https://www.mckinsey.com/mgi/our-research/from-poverty-to-empowerment-raising-the-bar-for-sustainable-and-inclusive-growth#/>

²¹ Under the NGFS (Network for Greening the Financial System) current policies scenario, GCAM6.0 downscaled model. All gases, emissions from energy, agriculture and land use systems

even smaller set of 11 countries – including China, Indonesia, and the DRC – which represent over 50 percent of mitigation, adaptation and development investments needed. India and Brazil have particularly significant needs across all three imperatives.

- **Third, the majority of the 40 “high contribution” countries contribute to one or at most, two imperatives.** LICs such as Ethiopia and Uganda have the largest needs in development while HICs and UMICs have the largest needs for mitigation action. MICs contribute to global needs in both development and adaptation.

An important caveat is in order here: the analysis thus far is only focused on identifying the countries and sectoral investments that have the potential to deliver the greatest impact on the three imperatives of development, adaptation and mitigation. The finding that some countries have an outsized impact on the three imperatives **does not imply** that all financing should be focused only on these countries. But it does mean that efforts to hasten progress in these countries will be necessary to ensure timely achievement of the global goals.

Figure 1 shows how the three imperatives vary across country-income groups, where development investment needs are measured by as the number of people under the international poverty line, mitigation investment needs by the currently expected trajectory of emissions, and adaptation investment needs expressed as the population-weighted index for exposure across six adaptation indicators from the Notre Dame (ND) Gain dataset.

- LICs and LMICs are home to about 35 percent and 55 percent of the total global population living under the international poverty line.
- HICs, UMICs, and India contribute the most GHG emissions (together representing 85 percent of emissions today) making mitigation investments the highest priority. Today, emissions are highest in upper MICs (driven by China, which represents almost 50 percent of the upper MICs country total). By 2030 and 2050, under the “current policies” scenario produced by the Network for Greening the Financial System, this picture remains roughly the same, with the share of global emissions from LMICs rising from 22 percent today to 32 percent by 2050, largely driven by India (8 percent of the global total today rising to 12 percent by 2050) and Nigeria (1.5 percent today rising to 3.2 percent by 2050). By contrast, emissions in LICs represent just 2 percent of the global total and will rise to only about 3 percent of the global total by 2050.²²
- Consistent with the fact that the impacts of climate change will affect all countries in some way, **Figure 1** shows that adaptation needs are dominant in LMICs and UMICs. This result is obtained mainly because the adaptation needs are measured by **population-weighted** exposure to climate hazards—as such, countries with large

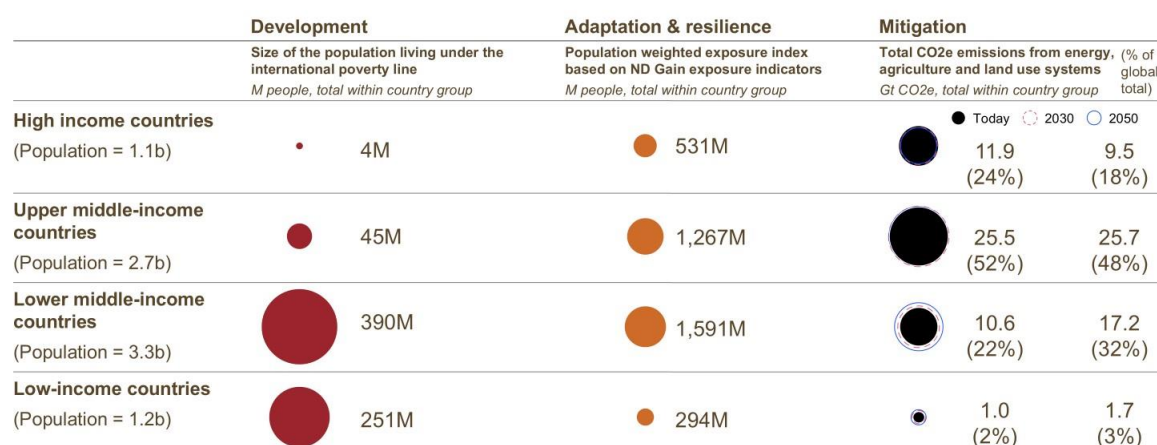
²² Under the NGFS (Network for Greening the Financial System) current policies scenario, GCAM6.0 downscaled model. All gases, emissions from energy, agriculture and land use systems

share of the global population receive a higher weight. Prima facie, this may appear to run counter to the fact that climate change is causing the greatest hardship in tropical and subtropical regions of the world, where most LICs are located. It is therefore important to emphasize the distinction between the need for adaptation actions and the allocation of financing for these actions. Even if their global population weight is low, LICs rise in priority for financing at the most favorable terms when the climate change exposure is combined with the proportion of a country's population affected by climate change and with their economic and financial readiness to handle the effects of climate change. Thus, most financial support (addressed in Section V below) will be needed in LICs and LMICs, where the majority of the countries' populations are exposed to climate shocks (because a higher proportion of their workforce is dependent on agriculture for their livelihoods) and because their communities have fewer physical and financial resources to prepare for and recover from climate events.

Figure 1

NEEDS ASSESSED ACROSS DEVELOPMENT, MITIGATION AND ADAPTATION

Size of bubble = value of relevant metric in each area (smaller is 'better' in each column).



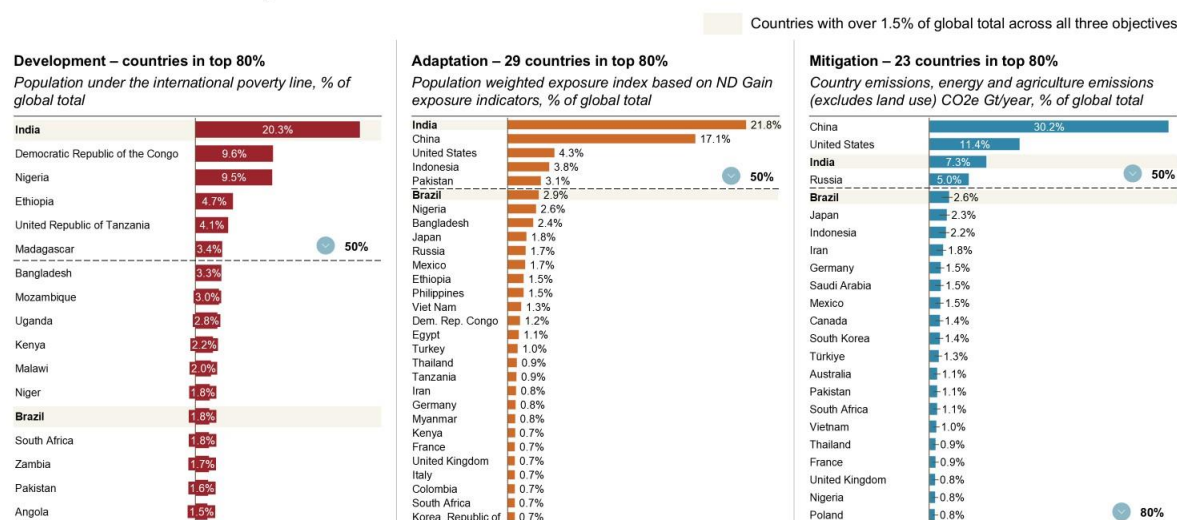
Source: Development indicators from SDG Sustainable Development Report 2023, full indicator database; Adaptation population exposure based on ND Gain Adaptation Country Index (12 'exposure indicators' from ND Gain dataset were averaged by country and weighted by population); Emissions from EDGAR database and NGFS and includes CO₂ and non-CO₂ gases. Non-CO₂ gases use a conversion factor: Global Warming Potential (GWP) 100, from IPCC Assessment Report 5. Emissions growth rates under the 'Current Policies' scenario

Globally, there are 23 countries which represent 80 percent of the total investment need for mitigation, 29 for adaptation, and 18 for development—yielding a group of 40 countries that fall in the top 80 percent across more than one need. Figure 2 shows the set of countries that represent over 80 percent of current global emissions: people in poverty, and people exposed to rising climate hazards. Making wise investments in these countries will radically accelerate progress on all three fronts globally. A subset of 11 countries represents over 50 percent of the global needs in the three areas – these are especially critical countries to get right to make global progress on these three issue

areas.²³ Importantly, **Figure 2** also shows two countries (India and Brazil) that make a significant contribution to the global total of all three imperatives. These are countries where funding needs to be carefully allocated between issues and where measures must be taken to ensure investment in one issue area does not jeopardize progress in other areas and that tensions are carefully managed.

Figure 2

11 COUNTRIES REPRESENT MAJORITY OF NEEDS ACROSS ADAPTATION, DEVELOPMENT AND MITIGATION



Source: Development indicators from SDSN Sustainable Development Report 2023, full indicator database; Adaptation population exposure based on ND Gain Adaptation Country Index (12 'exposure indicators' from ND Gain dataset were averaged by country and weighted by population); Emissions from EDGAR – no land use estimates included given the high uncertainty about country level land use emissions. Non-CO2 gases use a conversion factor: Global Warming Potential (GWP) 100, from IPCC Assessment Report 5

When considering priorities for a particular country, we measure the investments that would deliver the biggest contribution to each of the global goals. To do this, first, each country's contribution to each imperative is assessed by how much it helps to close the global gap. As an example, consider Ethiopia: it is home to 4.7 percent of the global impoverished population, contributes 0.4 percent of global emissions and is home to 0.8 percent of the world's population-weighted exposure to climate change. Using these measures, we posit that investments aimed at poverty reduction and economic development represent the greatest opportunity to move the needle both for Ethiopia and

²³ We tested the robustness of the adaptation results by examining a broader measure of climate vulnerability by including—in addition to exposure—measures of sensitivity and adaptive capacity. The topline results do shift a little—with a few countries shifting up or down in rank—but not so much as to change the thrust of our arguments.

Sensitivity is defined as the degree to which people and sectors they depend on are affected by climate shocks.

Sensitivity is measured by 12 indicators—food import dependence, rural population, rate of use of fresh water, water dependency rates, external resource dependency for health services, natural capital dependency, ecological footprint, urban concentration, age dependency, imported energy dependence, population living 5m or less above sea levels.

Adaptive capacity is defined as the ability of society and its supporting sectors to adjust or respond to potential damage.

Adaptive capacity is measured by 12 indicators—fertilizer and irrigation use, child malnutrition, access to reliable drinking water, dam capacity, medical staff, access to sanitation, protected biomes, quality of trade and transport infrastructure, paved roads, electricity access, disaster preparedness.

for the world. By contrast, India contributes 8 percent of global emissions, 22 percent of population-weighted exposure to climate hazards, and 20 percent of the world's population in poverty²⁴. While the largest impact is still in terms of development and adaptation, India could have a significant impact on mitigation, and thus needs to invest across all the three imperatives.

The results of this exercise are illustrated in Figures 3 and 4. Ethiopia (Figure 3), which accounts for nearly 5 percent of the global population in poverty, faces the highest needs in terms of building human capital through investments in health, education, and social protection. Ethiopia also needs to build energy and other critical infrastructure (including for agriculture) that create jobs and livelihoods. This has to be done in a way that builds resilience to climate shocks. However, given that Ethiopia's emissions are 0.2 percent of the global total and are expected to rise to only 0.3 percent of the total by 2050, most investments in carbon mitigation in Ethiopia need to be carefully considered.²⁵ It may make the most sense for Ethiopia to prioritize scarce concessional finance to fund development priorities until the "green premium" on the cost of low carbon technologies (such as solar and wind) is driven down substantially, and Ethiopia has made progress on the other imperatives. At the same time, the potential for sunk or stranded asset costs of investments in carbon intensive technologies today must be taken into account when determining the medium-term viability of the development-focused investments.

India (Figure 4), on the other hand, has a profile of investment needs across development, mitigation, and adaptation with 20 percent of the global population in poverty²⁶, 7 percent of global emissions and 15 percent of the population-weighted index across six climate adaptation indicators—food, water, human habitat. The challenge facing decision-makers in the case of India would be to prioritize the most critical investments within all three areas. Investments that could be priorities for financing include those that address two or more needs at once, such as drought and heat resilient crops and livestock, which can safeguard food production while helping the agricultural sector adjust to a warming climate.

²⁴ Estimates of poverty in India have become controversial, with some researchers claiming that India has eliminated extreme poverty. Several factors would signal the need for caution in accepting this conclusion. First, the fact that there is significant crowding of the population near the \$1.90 per day threshold makes poverty estimates very sensitive to small shifts in the estimate of purchasing power parity. Second, even if we were to accept the result that extreme poverty has been eliminated, crossing the \$1.90 per day threshold by 50 cents or so does not mean a durable reduction in vulnerability to falling back into poverty. Third, PPPs and extreme poverty thresholds have yet to be reexamined in light of the recent much higher levels of inflation worldwide.

²⁵ Under the NGFS (Network for Greening the Financial System) current policies scenario, GCAM6.0 downscaled model. All gases, emissions from energy, agriculture, and land use systems.

²⁶ Estimates of poverty in India have become controversial, with some researchers claiming the elimination of extreme poverty measured at \$1.90 per day. Several factors would signal the need for caution in accepting this conclusion. First, extreme poverty in India is driven by the crowding of the population near the \$1.90 per day threshold. Thus, poverty estimates are very sensitive to small shifts in the estimate of purchasing power parity. Second, even if we were to accept the result that extreme poverty has been eliminated, crossing the \$1.90 per day threshold by a small amount does not mean a durable reduction in poverty as large number of people remain vulnerability to falling back into poverty. Third, PPPs and extreme poverty thresholds will need to be reexamined considering the recent much higher levels of inflation worldwide.

Figure 3

ETHIOPIA NEEDS ACROSS DEVELOPMENT, ADAPTATION AND MITIGATION

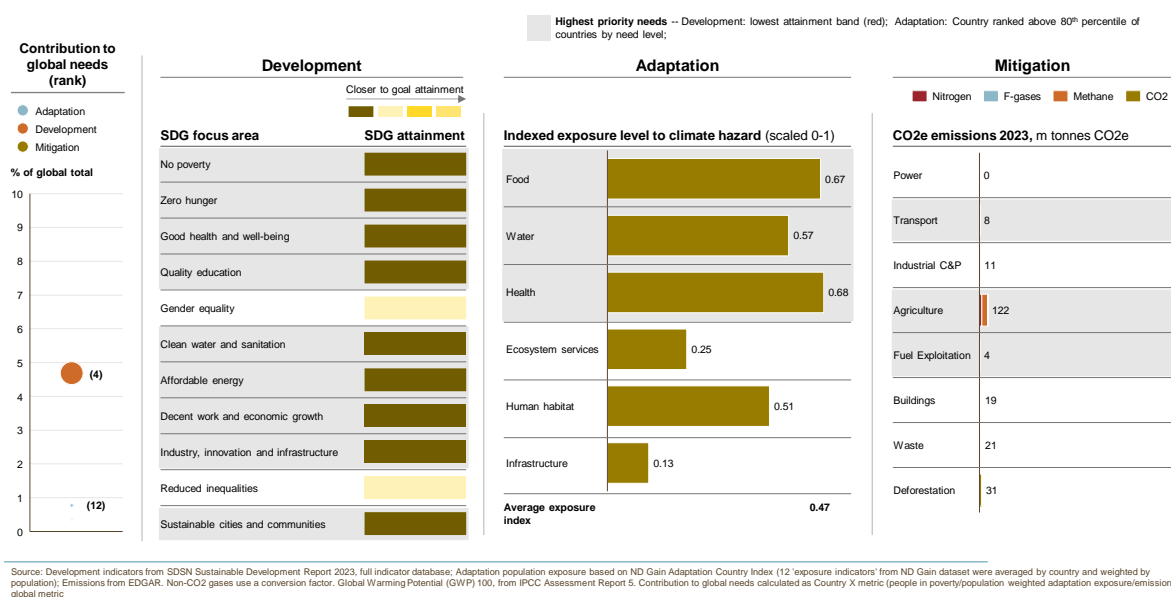
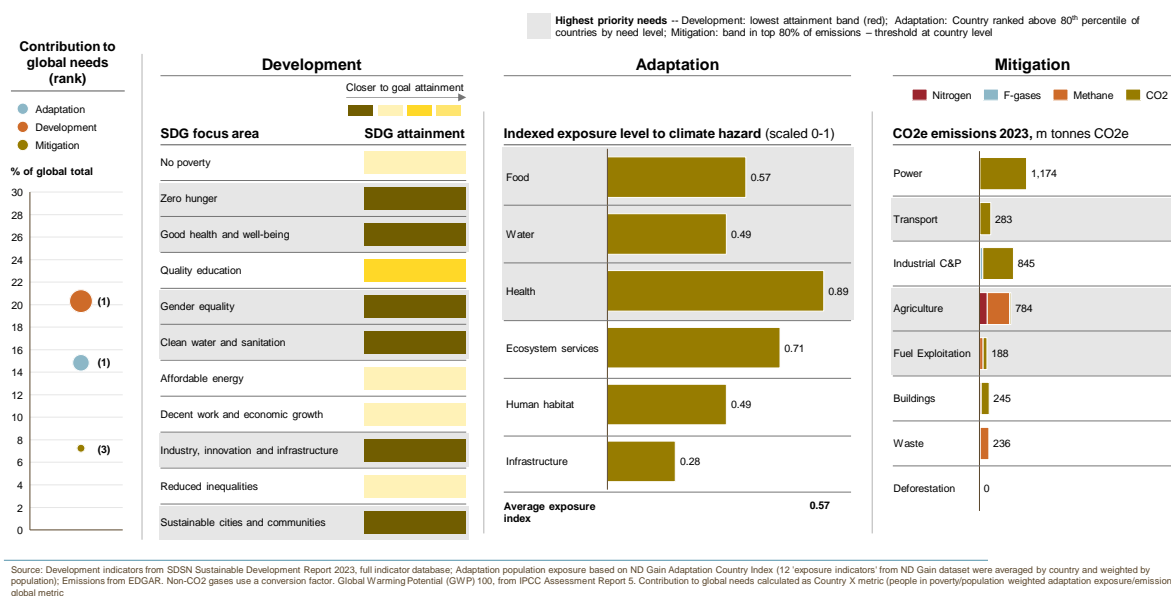


Figure 4

INDIA NEEDS ACROSS DEVELOPMENT, ADAPTATION AND MITIGATION



The analyses presented thus far highlight the varying nature of potential impact and hence investment needs across country income groups, at country-level, and within the imperative for each country. Armed with a granular and fact-based view of investment needs, stakeholders – both those allocating global finance flows, and those making country

level decisions – should be better able to prioritize to achieve the greatest global impact as well as the greatest impact from the perspective of a specific country.

IV. Overlaps, co-benefits and tensions

Although the three imperatives have elements that are interlinked and complementary, the investments needed to achieve them may not be complementary in the short- to medium-term. This framework is elaborated under the assumptions that (i) all global climate and development goals need to be achieved, and (ii) all countries need to transition into a resilient green economy – but the transition and the pace will look different in different countries. All countries will need to make choices as to what specific investments and the sequence in which those investments will be made. Those choices will depend on the country context, the timeline in which results need to be achieved, and the available resources available to finance those choices. To examine this point more carefully, we identify a preliminary list of about 150 “highest impact investments”²⁷ across adaptation, mitigation, and development (Figure 5):

- (i) **For mitigation**, examples of highest impact investments (those with greatest emissions reduction per dollar invested) include investing in green energy sources and energy efficiency measures in transport, industrial facilities and buildings, installation of cost-competitive low carbon generation facilities (for example solar, wind or hydropower) and investments in the agricultural sector to improve productivity and efficiency and reduce or store carbon in soils.²⁸
- (ii) **For adaptation**, highest impact investments²⁹ range from new infrastructure that manages climate risks (e.g., flood barriers), to upgrading existing infrastructure to be resilient to climate change (e.g., raising bridge heights or floor levels to accommodate rising flood or sea levels), and adjusting practices so that people are less exposed to hazards in the first place (e.g., shifting working hours away from hottest time of day).
- (iii) **For development**, there is a broad range of highest impact investments.³⁰ For example, the highest impact investments in LICs’ health sector include diagnostic tools and technologies for tuberculosis, in child and maternal health facilities and in prevention and control strategies for malaria and other neglected tropical diseases. High impact

²⁷ The list of high-impact investments is a work in progress. The list discussed here was derived from a literature review and qualitative interviews with subject matter experts. For the purposes of this list, “highest impact” is generally taken to mean investments that have the highest benefit cost ratio (within a single imperative), where benefits are both financial and non-financial (including emissions reduction, avoided damages and improvements to human and intellectual capital). The assessment of overlaps and co-benefits is, by definition, subjective, but the conclusions we reach here are directionally accurate.

²⁸ Sourced from across multiple sources including IPCC Sixth Assessment Report, Working Group III: Mitigation of Climate Change, Figure SPM.7, IEA and NGFS transition investment reports, broad literature reviews and expert interviews.

²⁹ For adaptation investments, rigorous and systematic cost benefit analyses are rarely available. The impact of investments was assessed at a quantitative level across all adaptation activities from a comprehensive literature review and expert analysis.

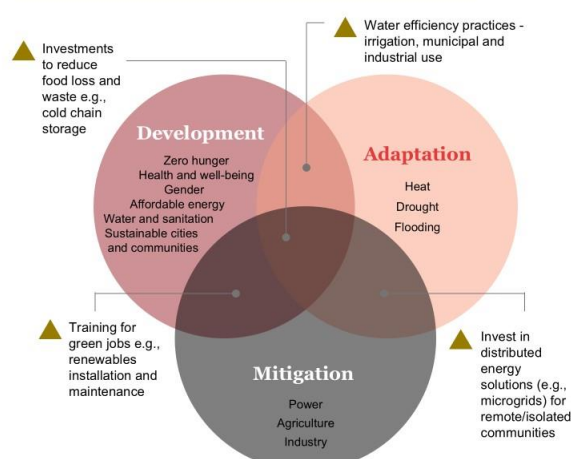
³⁰ Development actions identified through literature reviews, and the distillation of investments currently underway through the SDG investments identified in the SDG investor platform at <https://sdginvestorplatform.undp.org/>

development investments also include building roads, ports and rail and aviation infrastructure.

Figure 5

MOST HIGH IMPACT ACTIONS TRULY SERVE ONLY ONE OF DEVELOPMENT, ADAPTATION OR MITIGATION

Direct overlap of highest impact actions – LMIC examples



Source: Development actions identified through literature review and distillation of investments currently underway through the SDG investor platform at <https://sdginvestorplatform.undp.org/>. Mitigation investments sources from IPCC Sixth Assessment Report, Working Group III: Mitigation of Climate Change, Figure SPM.7, McKinsey Decarbonization Lever Library and expert interviews. Adaptation investments identified through a comprehensive literature review and expert interviews

The degree and nature of overlaps vary significantly by income group

LMICs: high needs in both development and adaptation. Some actions serve both objectives, but most will only contribute to one need

LMICs: needs are spread across all three objectives. Overlaps exist between few actions e.g., water efficiency, agricultural production, distributed energy. Highest overlap between development and adaptation actions

LMICs: needs spread across three objectives, but few actions overlap. Typically, actions overlap where development and adaptation priority coincide

HICs: with limited development needs, very few overlaps exist, as between adaptation and mitigation actions typically do not highly impact both areas

Schematic.

Size of bubble represents contribution to global need.

Overlap represents number of actions overlapping

To facilitate an orderly discussion of these issues, it is useful to define what we mean by *direct overlaps*, *co-benefits* and *tensions*. (**Annex 1** contains examples of these concepts).

Direct overlaps are defined as high impact investment for one high priority imperative that is also a high impact investment for another high priority imperative. That is, an investment which addresses two or more imperatives where the investment needs are high for the country in question, AND where the investment has the highest impact on both imperatives. This is a higher bar than in other similar studies, but an important one when concerned about achieving urgent goals with limited resources.

Co-benefits are defined as occurring when a high impact investment for one goal also has a positive impact on a second goal but may not be a high impact action for the second.³¹ Importantly, our use of the term “trade-offs” refers to the need to make choices between actions triggered by constrained resources.

Tensions that need special attention occur when a high impact action to drive a priority imperative in a country result in a negative impact on another high priority investment in the country. Tensions occurring when a country’s high impact action have negative effects

³¹ While the difference between a direct overlap and a co-benefit as defined here can be difficult to precisely determine, and is context dependent, the overall insights from the analysis conducted for this report are still valid.

on non-high impact actions may be of less concern, but attention should be given to any reasonable adjustments to ease that negative effect.

Tradeoffs refer to the need to make choices between different investment actions that inevitably arise in the context of constrained resources. In this work, the term trade-off should not be confused with the concepts of overlaps, co-benefits and tensions defined above.

Investments in LMICs with direct overlaps are weighted towards adaptation and development investments. The right-hand side of **Figure 5** gives an indication of the extent to which the 150 “high impact” actions identified in this report are directly overlapping across country income groups. The analysis finds that direct overlaps make up between 10 and 30 percent of actions that are simultaneously priorities for adaptation and development (depending on which country income group is analyzed) from the list of 150 highest impact actions across all country income groups. In contrast, actions that are simultaneously priorities for mitigation and development are more infrequent (<10 percent of all “high impact” actions assessed were found to be overlaps between mitigation and development, in the short term). However, when direct overlaps exist, they should be taken into account in the prioritization of high-impact investments.

The left-hand side of **Figure 5** shows examples of investments that directly overlap for LMICs between adaptation and development, adaptation and mitigation, and mitigation and development. Examples of such investments are:

Development and adaptation.

- Investing in research and development (R&D), and the distribution of heat and drought resilient agriculture (seeds, livestock breeds and farming practices), which can both ensure resilient food supply and adaptation to changing climatic conditions (increasingly hot and dry in many agricultural regions).
- Investments in water efficiency practices in irrigation, municipal and industrial use. This can contribute to lower irrigation costs, water security for populated regions and support in adapting to new volumes of rainfall.

Development and mitigation.

- Investments in skills and training programs for ‘green jobs’ – e.g., renewables installation and maintenance, which can both support the roll-out of low carbon energy generation sources and provide decent and well-paying jobs.

Investments with co-benefits are more frequent than direct overlaps but the co-benefits may not manifest without thoughtful planning. At least 30% of actions analyzed could offer co-benefits. Examples of this include the benefit on human health (the development imperative) from phasing out fossil fuel powered electricity generation facilities (particularly coal) and combustion engines (the mitigation imperative), reducing the particulate matter that causes many chronic lung conditions. Many actions that are classified as having a “co-benefit” will require the investment to be done in a specific way

to unlock the additional benefit. For example, many infrastructure investments (roads, rails, port – contributing to progress in SDG 9 – industry, innovation, and infrastructure) can also have a climate resilient co-benefit if they are designed not just in line with today’s design standards but also to efficiently withstand rising climate hazards. **Tensions are most concentrated between development and mitigation and are particularly acute where countries face investment needs to make progress against more than one imperative.** As countries take action to address the three imperatives, in addition to overlaps and co-benefits, there are high-impact actions that may be taken to address one imperative, whose impact may be in tension with other imperatives at least in the short to medium term (see Box 2 for a broader view of tradeoffs that will need to be confronted when financing is limited). Overall, across country-income groups, we found that 5 to 10 percent of actions analyzed could represent such a possible tension. The most significant number of actions in tension from the list analyzed is between development and mitigation, many of which relate to the challenge of providing affordable, reliable, and low-emission energy.

Box 2 –Tradeoffs across the Three Imperatives.

In addition to the tension that may exist between the objectives of different investments, there are often also trade-offs that exist because capital is too limited to address all three imperatives.

- (i) **Trade-offs in type of investments:** for example, limited funding means hard choices may need to be made between equally attractive investments. This could also be missed opportunities to invest in sectors that could grow considerably in future, e.g., in low-carbon manufacturing capabilities.
- (ii) **Trade-offs in the use of concessional finance:** the allocation of limited ODA to countries and sectors that have limited access to other financing solutions and allocating some ODA to mobilize private capital for development.
- (iii) **Trade-offs over time:** for example, in some situations, installing gas fired power generation facilities may provide cheap firm baseload power – contributing positively towards providing energy access for all. But it also drives GHG emissions – setting back the goal of reaching net zero emissions by 2050.

Trade-offs 1 and 2 exist because there is scarce capital to address the three imperatives, and the financing framework described in this paper offers suggestions on how these trade-offs might be lessened (for example, through prioritization and matching of capital sources). Trade-off 3 can be lessened through innovations, for example by reducing the cost of technology to bring in line with competitors, or by financing instruments that lower the cost of capital for such investments. These levers are discussed later in the paper.

Examples of actions that may be in tension with other imperatives include:

- (i) **High priority action for development that creates tension for mitigation:** A critical development investment is providing affordable, reliable energy for residential and industrial use. Although the cost of renewable source of energy is falling steeply, building carbon-emitting coal or gas fired base load power may still be the cheapest

way to provide power today, particularly when the costs of investment in storage and grid flexibility are considered. A more complicated situation arises in the case of LICs or LMICs which have large reserves of carbon-based fuels—such as, for example, Senegal or Guyana. Exploiting such resources may be part of the plan to accelerate growth and job creation in these countries. The cost-benefit calculation in this case may strongly favor exploiting the carbon-based reserves to accelerate development, even if it increases global GHG emissions.³² These cases would call for strong international cooperation and dialog between the donor community and the recipient country to work out both current and future investments that balance country and global goals.

The tension also runs in the opposite direction—high priority actions for mitigation such as decommissioning coal-fired plants before cheaper alternatives are fully viable may hinder energy access and slow progress on development. India is an example of such a tension: it has high development needs, represents ~5 percent of global CO₂ emissions, and there is a significant divergence between future emission scenarios. For example, emissions would continue to grow to 2030 under a “current policies” scenario (to 12.5 percent of global emissions by 2050). However, emissions would decline under the “net zero” scenario (to 4 percent by 2050).³³

At the same time, our analysis should not be seen as saying that mitigation related investments should not be a priority for LICs and LMICs—indeed mitigation can be an integral part of LICs/LMICs strategy to address development investment needs. Specifically, when LICs and LMICs have a comparative advantage in green energy sources (e.g., Kenya’s geothermal energy potential) which makes them highly cost-effective, investments in green energy would be consistent both with the development and mitigation imperatives even in a LIC.

- (ii) **High priority action for mitigation that creates tension for development:** A high impact action for reducing emissions is stopping illegal clearing of standing forests for agriculture and timber through better monitoring and enforcement. But this may reduce income and economic development opportunities from local populations. Brazil and Nigeria, with their high fraction of non-energy emissions and high development needs, are examples of countries where these tensions may exist.
- (iii) **High priority action for adaptation which creates a tension for development:** Encouraging adaptation to changing climate hazards by slowing down urbanization or limiting new development in areas most impacted by climate hazards. This may limit economic development and employment opportunities for local populations.

Recent research highlights the nuanced view required to assess tensions between the three imperatives. A World Bank study shows that eradicating extreme poverty (i.e., bringing populations to the international poverty line (but not much higher) would increase

³² Note however that these emissions may not be due only to Senegal or Guyana’s consumption, but rather from those countries who import the oil or gas to fuel their own power plants.

³³ NGFS Current Policies and Net Zero 2050 scenario using REMIND-MAGPIE (phase 4)

annual emissions by less than 5 percent above today's levels.³⁴ Our investment needs analysis in Section II—which finds that countries with very high development needs do not have high emissions footprints (current or in the foreseeable future)—would support this conclusion. However, the same research also highlights that bringing populations to middle-income status would have a substantially greater impact on emissions—an increase of 15 percent above 2019 emissions to bring all populations to lower middle income at \$3.65 per day and an increase of 45 percent above 2019 emissions to bring all people to middle income levels at \$6.85 per day). ***This finding highlights the urgency of much greater and more effective innovation to drive down the “green” premium of all economic activities.***

Four conclusions emerge from this analysis of overlaps, co-benefits, and tensions between investments to make progress on the three imperatives.

- First, there are only a small number of areas where investments have the highest impact on two different goals.
- Second, capital should not be deprioritized from actions that have a very significant impact on a single imperative.
- Third, where there are co-benefits, action should be carefully planned to maximize overall return on the prioritized investment. Especially with limited financing options, choosing less impactful actions just /to secure potential co-benefits could impede progress across all imperatives.
- Finally, when tensions exist, particularly in the short-to-medium term, these need to be carefully managed on a country-by-country basis.

V. Sources and Allocation of Finance

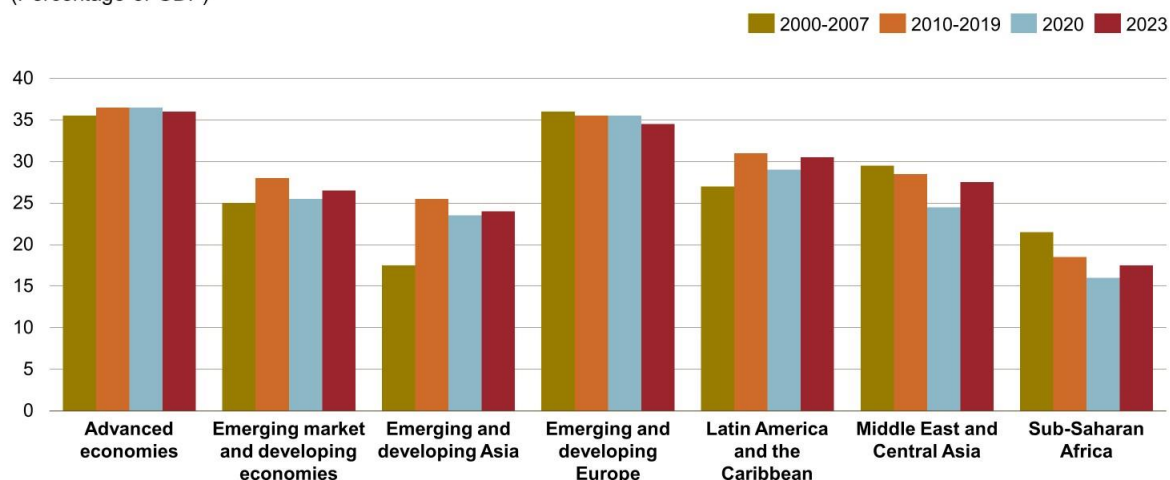
Financing available to meet the investment needs to reach the global goals ranges from government revenues, domestic equity and debt markets, workers' remittances, grants and loans from bilateral and multilateral sources, borrowing from external capital markets, foreign equity investment, and philanthropic capital. Key trends in these capital flows are shown below.

- **Government revenue as a share of GDP has stagnated** in most regions in the world over the past two decades, with countries in SSA collecting significantly lower revenues than the rest of the world.

³⁴ Wollburg, P., et al., (2023): The Climate Implications of Ending Global Poverty, Policy Research Working paper, The World Bank <https://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-10318>

GENERAL GOVERNMENT REVENUE, BY REGION, SELECT YEARS DURING 2000-2023

(Percentage of GDP)



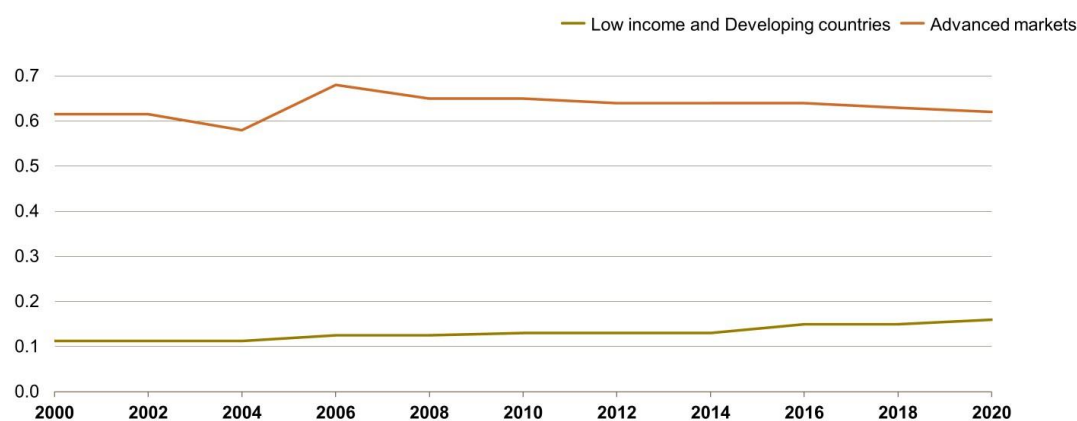
Note: Regional groups follow the source

Source: UN DESA calculations based on data from the IMF World Economic Outlook Database, October 2023.

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- Despite efforts to promote **access to domestic banking and capital markets** over the past two decades, this source of capital remains significantly underdeveloped in developing countries thus constraining the availability of long-term local currency lending for investment.

FINANCIAL DEVELOPMENT INDEX, 2000-2021



Note: This chart uses IMF country classifications

Source: UN DESA calculations based on IMF data

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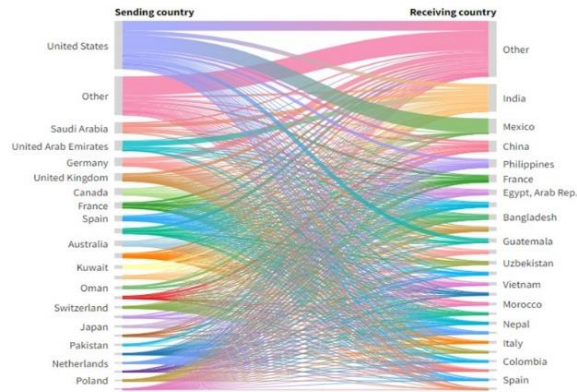
- Workers' remittances are a critical source of finance** for LICs and LMICs—larger than foreign direct investment and ODA flows. Sub-Saharan African countries are underrepresented in the top remittance receiving countries with only Nigeria being in the top 25.

REMITTANCE SENDING DOMINATED BY THE US; SUB-SAHARAN AFRICA UNDER-REPRESENTED IN REMITTANCE RECEIVING

Remittance flows between sender and recipient countries (\$B, 2021)

Top 25 senders

Top 25 recipients



Source: McKinsey Global Payments map, remittances source data for 2023

Senders:

- US dominates remittance sending by value: 25% of the remittances sent by top 25 senders come from the United States (216\$B out of \$860B total)
- Middle East sends significant remittances to India: four Middle Eastern countries (UAE, SA, Oman, Kuwait) in the top 25 senders, primary destination is India

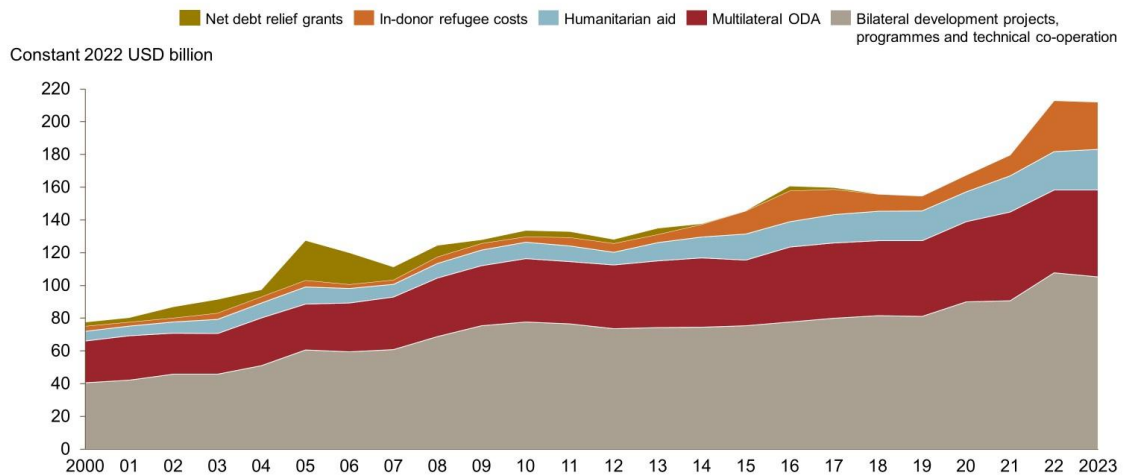
Receipts:

- Underrepresentation of Sub-Saharan Africa in remittances: Nigeria only SSA country in the top 25 recipients
- High representation of South & Southeast Asian countries: five South & Southeast Asian countries (India, Nepal, Bangladesh, Vietnam, and Philippines) included in the top 25 recipients

- Bilateral ODA has increased but the share of bilateral development assistance to developing countries has fallen.

COMPONENTS OF DAC MEMBER COUNTRIES NET OFFICIAL DEVELOPMENT ASSISTANCE

Data for 2023 are preliminary



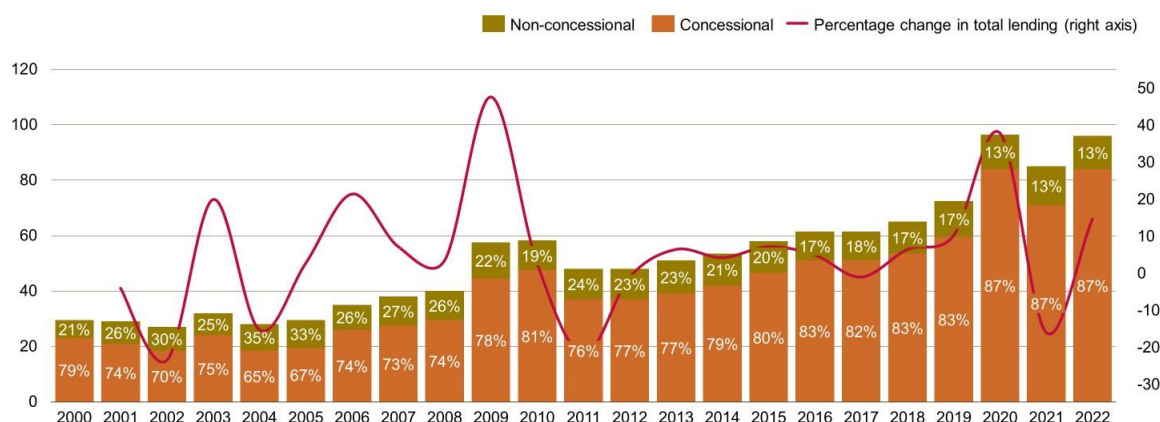
Source: OECD, 11 April 2024

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- Multilateral development banks (MDBs) are an important source of concessional long-term finance to developing countries. They have provided vital counter-cyclical support to developing countries in times of crisis.

LENDING BY MDBs, 2000-2002

(Billions of United States dollars, current)



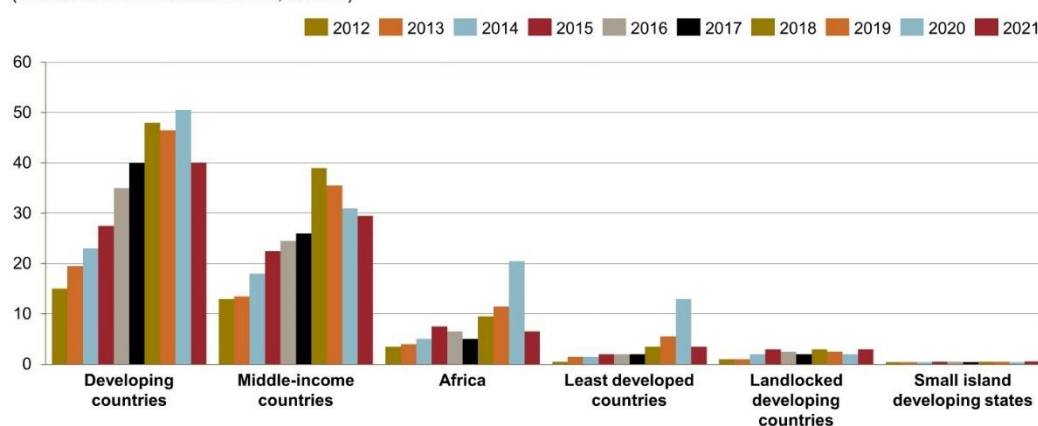
Source: World Bank, International Debt Statistics.

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- Blended finance has not lived up to the promise of mobilizing large amounts of private capital.** Blended finance involves the use of MDB and public development finance to crowd in private finance. The main objective of blending finance in this way is to incentivize the private sector to invest in sectors or projects that would otherwise not offer enough return for the risk of the project.

AMOUNTS MOBILIZED FROM THE PRIVATE SECTOR BY OFFICIAL DEVELOPMENT FINANCE INTERVENTIONS, 2012-2021

(Billions of United States dollars, current)



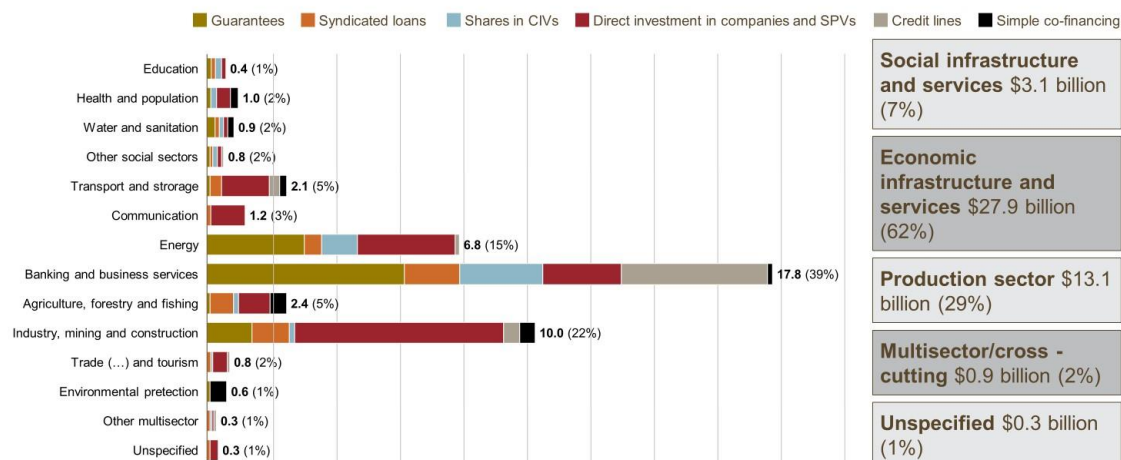
Source: OECD

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Most of the capital mobilized through blending with public capital has gone into banking and financial services and into industry, mining and construction.

MOBILIZED PRIVATE FINANCE SECTOR, 2019-2021 AVERAGE

(Billions of United States dollars, current)



Note: CIV = Collective Investments Vehicles, SPV = Special Purpose Vehicles

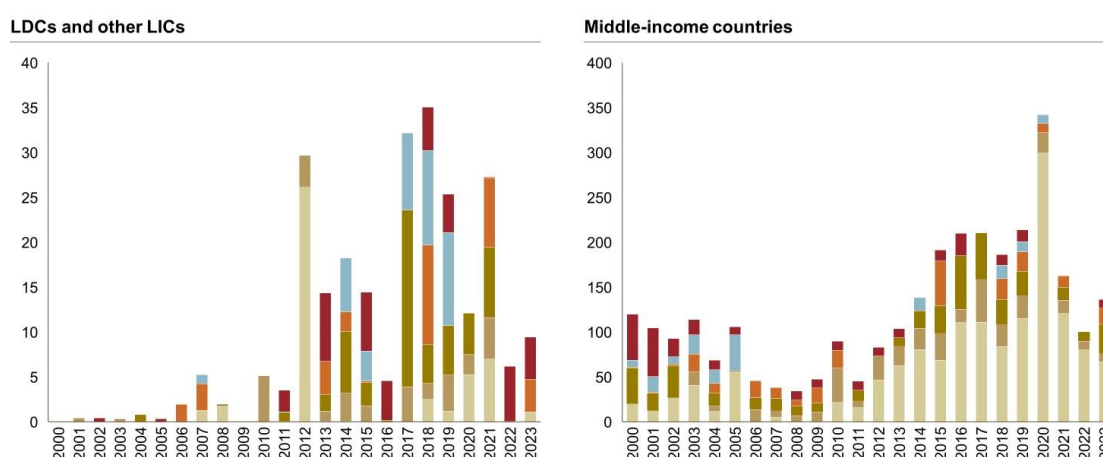
Source: OECD

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- **Flows from capital markets** to developing countries had risen sharply starting in 2010 as investors sought yield when the global financial crisis prompted very accommodative monetary policies in advanced countries. However, these flows have slowed significantly with the sharp tightening of monetary policy post COVID.

SOVEREIGN BOND ISSUANCE IN HARD CURRENCIES, BY COUPON RATE, 2000-2023

(Billions of United States dollars)



Note: Data included sovereign bond issuance in pounds sterling, euros, Japanese yen and United States dollars

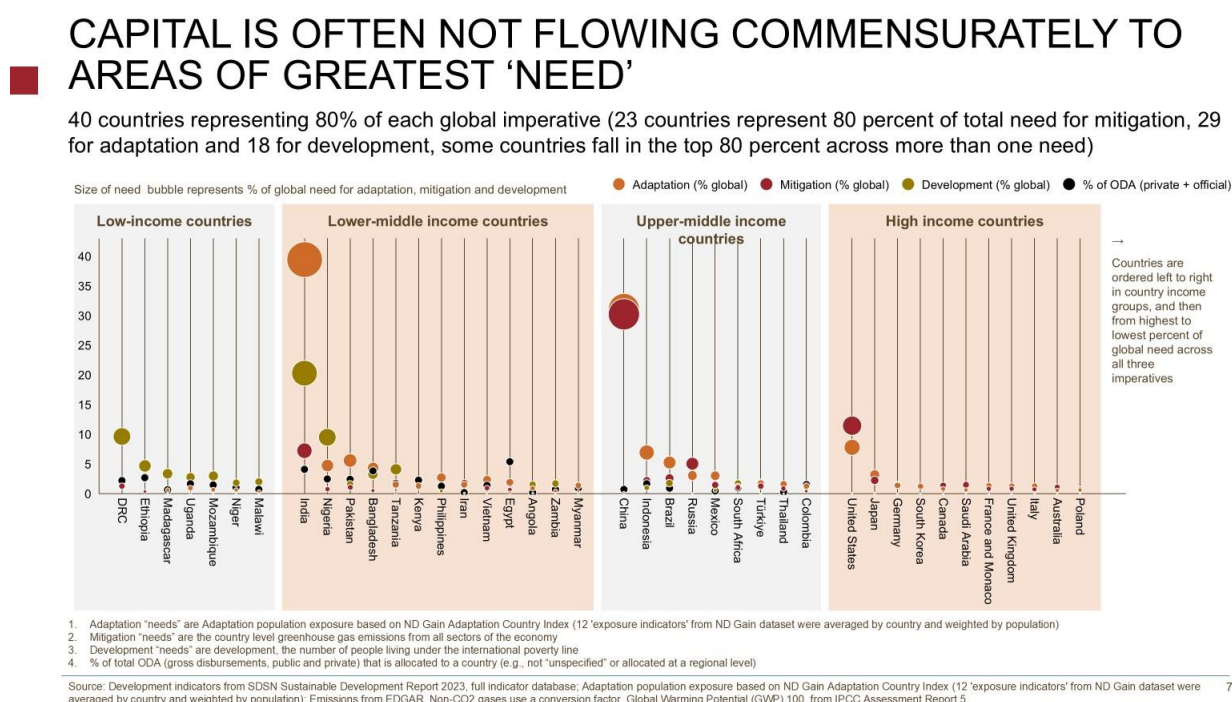
Source: UN DESA calculations based on LSEG data

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Prioritizing where and when finance (public and private, international, and domestic) is spent is critical to maximizing the impact of scarce resources. As Figure 6 further shows, there is an opportunity to significantly improve the matching of ODA and climate finance funds to countries' investment needs.

Better matching of finance to needs is made more challenging by the fact that robust data is limited on finance flows to the three imperatives. We considered two measures—ODA and the Climate Policy Initiative’s database on climate finance. For LICs, LMICs and upper MICs, there is a moderate to weak positive correlation between development needs and ODA flows. **Figure 6** shows the countries responsible for more than 80 percent of each need globally, receive a share of ODA that is proportionately much lower than their share of global needs.

Figure 6



Using some amount of ODA to mobilize private financing is often mentioned as one way to stretch public financing. This is promising for many UMICs, especially in sectors such as energy and mitigation-related investments but has been much less successful in moving the needle on private capital mobilization in LICs. For example, according to Organization for Economic Co-operation and Development's Development Assistance Committee (OECD-DAC), only 13 percent of private capital mobilized by stretching ODA goes to LICs while 83 percent to MICs, and only 7 percent of mobilized private capital goes to social sectors and only 4 percent to adaptation activities.³⁵ Climate finance flows from the Climate Policy Initiative’s 2023 analysis of annual climate finance reveals a similar trend: South Asia and the Middle East and North Africa receive a significantly lower share of global funding for adaptation than their share of global needs.³⁶

³⁵ OECD (2023) Private Finance Mobilized by Official Development Finance Interventions: Opportunities and challenges to increase its contribution towards the SDGs in developing countries.

³⁶ Buchner, B et al. Global Landscape of Climate Finance 2023

Against a global backdrop of declining ODA and other bilateral flows—due to competing pressures on fixed or decreasing donor budgets³⁷--and the challenges in attracting private capital to any sector in a low-income context, careful consideration and transparency is needed to ensure scarce concessional public funding is allocated in a fair and transparent way relative to needs.

VI. Principles to Govern the Allocation of Finance

As outlined, there are two main funding challenges that highlight the critical importance of using the right forms of capital to finance each action:

- (i) The overall magnitude of global and domestic investment falling substantially below what is required for achieving SDGs and climate goals, and
- (ii) A significant portion of financing needs to come from constrained domestic or international public sources.

Different types of financing flows vary in their potential use and limitations, which means they cannot be easily substituted by each other. As such, there is no single type of financing flow that can solve all needs in all countries. Instead, a unique mix of financing flows is needed that accounts for contexts and needs - in countries and within them. One way to optimally match sources of capital and financing instrument to each action is to consider the investment return (risk adjusted return on investment or ROI and return horizon), and the impact profile of an action.

Figure 7 presents a theoretical framework for allocating capital by risk and return characteristics. **Figure 8** outlines an example of a mapping exercise for the three imperatives to the investment return and impact profile. While not an exhaustive set of actions, this demonstrates how the most critical actions to address climate and development goals fall across the financing spectrum – from ‘public goods’ typically suitable for grants or highly concessional flows (such as public primary school education and the early retirement of coal power generation capacity) to opportunities attractive for autonomous private capital (such as the development of solar power generation capacity in HICs).

³⁷ See Development Initiatives, “New DAC Data Reveals the Impact of Ukraine Invasion on Aid”

Figure 7

FINANCING SOURCES: ACTIONS HAVE DIVERSE RISK AND RETURN PROFILES AND WILL REQUIRE DIFFERENT FORMS OF CAPITAL

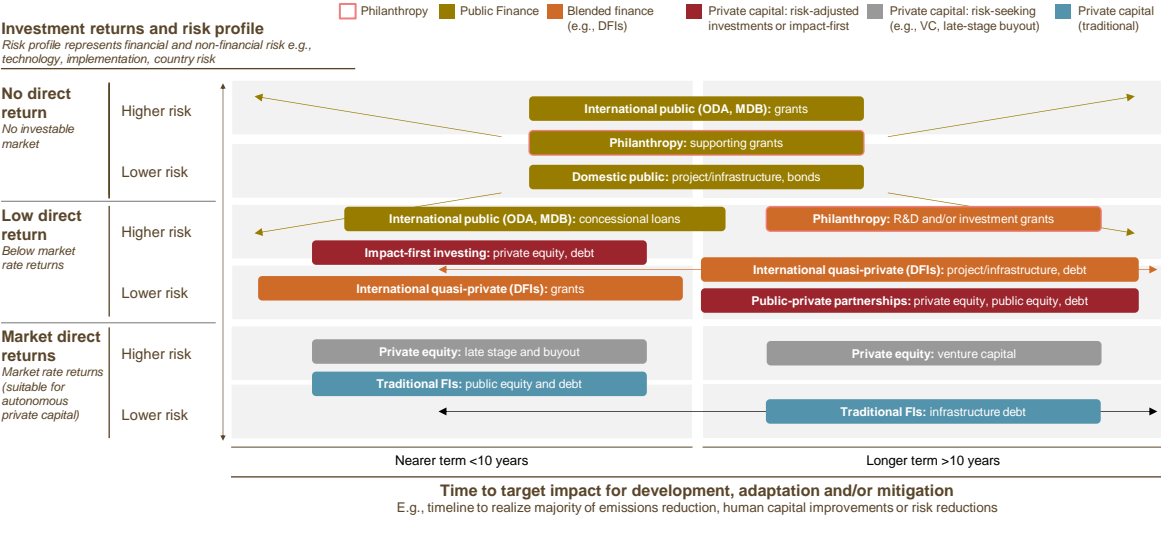
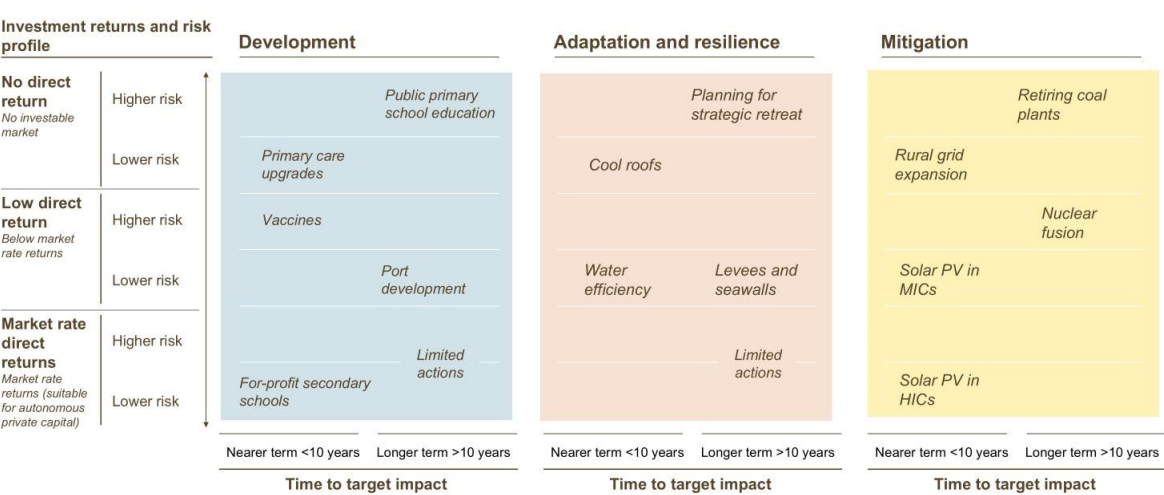


Figure 8

IT ALSO REQUIRES UNDERSTANDING THE INVESTMENT CHARACTERISTICS OF ACTIONS TO ADDRESS DEVELOPMENT, ADAPTATION AND MITIGATION

Example actions – not exhaustive



Source: Development indicators from SDN Sustainable Development Report 2023, full indicator database; Adaptation population exposure based on ND Gain Adaptation Country Index (12 'exposure indicators' from ND Gain dataset were averaged by country and weighted by population); Emissions from EDGAR. Non-CO2 gases use a conversion factor: Global Warming Potential (GWP) 100, from IPCC Assessment Report 5

Figure 9 shows a high-level illustration of the sources of funding that might be suitable for various investment areas across each imperative. It was developed by assessing each individual action’s investment return and timeline to impact, and mapping that to the sources of capital shown in Figure 7. Figure 9 shows a stylized view of what such a “capital map” looks like when actions are aggregated and matched to broad categories of financing flows. The returns profile of investments can be significantly impacted by a country’s

governance, institutional capacity, and the certainty of the policy environment, which are not accounted for in this exercise.

This figure shows that actions to address the most acute global needs for LICs and LMICs – to accelerate human capital development and build resilience to climate change – will need to rely on grants and the most concessional forms of loans from ODA and philanthropic capital, especially where domestic public and private funding capacity is limited. This is because these investments, concentrated on development and adaptation needs, have low financial returns, benefits which accrue over long time horizons or represent avoided loss or damage. Some examples of high impact development investments include primary health clinics and schools and examples of high impact adaptation investments include flood-resilient public infrastructure, sea walls and urban cooling shelters.

Turning next to the role of private capital, it is estimated that by 2030 the private sector will need to cover roughly 80 percent of climate mitigation investment needs in emerging and developing economies as public investment growth is projected to remain constrained and limited.³⁸ For mitigation action in UMICs and HICs, the substantial investments needed are often well suited to private or blended finance vehicles – especially in power infrastructure, transportation, and energy efficiency upgrades for buildings. However, the experience to date of inducing private capital to flow into LICs and LMICs at scale has not been encouraging.

A recent OECD study shows that 87 percent of mobilized private finance has been in UMIC developing countries with lower risk profiles and most of the 32 percent of mobilized capital for climate in 2018-20 went to mitigation. Only 12 percent of mobilized private finance went to LICs and LMICs. This is because private investors often do not see the environment in many LICs and LMICs as conducive to investors' risk bearing capacity. For this reason, limited concessional financing is better used in most LICs and LMICs to support governments in improving the underlying enabling environment, strengthening institutional and regulatory frameworks, and creating markets that would draw in private capital over time. There may, however, be cases (like India, Brazil, and Nigeria) where some concessional financing should be used to crowd-in private financing to hasten the transition away from carbon and speed up the path of emissions reductions.

³⁸ International Monetary Fund, 2023, Report: Financial Sector policies to unlock private climate finance in emerging market and developing economies.

Figure 9

OPTIMAL CAPITAL SOURCES FLOWING TO HIGHEST PRIORITY NEEDS ACROSS COUNTRY INCOME GROUPS

Indicative and high level only, exceptions will exist

				Capital sources			Rationale
				Preferably capital that is channelled through government budgets (sourced from either domestic revenues or international aid – MDBs and philanthropy)	Blended finance (e.g., DFIs)	Private capital (traditional)	
				LICs	LMICs	UMCs	
Development	No poverty		Invest in rural infrastructure to support small-scale farmers e.g., irrigation, roads, market access				Typically limited financial returns, investment in public good, low risk but typically no/limited return
	Zero hunger		Improve distribution of nutrient rich foods				
	Good health and well-being		Diagnostic tools and technologies for tuberculosis, child and maternal health facilities				
	Quality education		Improving learning practices (e.g., tablets, teaching to level, structured lesson plans)				
	Gender equality		Invest in programs to help women enter the workforce				
	Clean water and sanitation		Build toilets, and improve sewage management and sanitation practices				Some financial returns in infrastructure projects possible, needs for risk mitigation for some countries
	Affordable energy		Invest in distributed energy solutions (e.g., microgrids) for remote/isolated communities				
	Decent work and economic growth		Expand access to banking and financial services				
	Industry innovation and infrastructure		Invest in road, rail, port and aviation network development and improvement				
	Reduced inequality		Invest in policy advocacy and design that progressively achieves greater equality				
	Sustainable cities and communities		Invest in development and repair of public transport infrastructure				
Mitigation	Power	Generation	Install intermittent renewables (wind, solar PV, solar CSP)				Possible financial returns possible, needs for risk mitigation for some countries
		Transmission & dist.	Upgrade grid and transmission & distribution capacity to facilitate higher VRE				
		CCUS	Install carbon capture and storage on fossil fuel generation facilities				
	Transport	Vehicles	Phase out fossil fuel vehicles and encourage adoption of zero emission vehicles				Financial returns as market rate possible
		Infrastructure	Expand public and private charging infrastructure for zero emission vehicles (EVs/hydrogen)				
	Industry	Efficiency	Upgrade energy efficiency of existing infrastructure				Mostly proven technology, needs for risk mitigation for some countries
		Electrification	Electrify industrial energy requirements where possible (e.g., EAF steel production route)				
		Processes	Reduce process emissions from emissions via scrubbers/alternative technologies				
	Power/transport/industry R&D		Invest in R&D activity that reduces the emissions intensity and increases energy efficiency				Typically needs public support
	Agriculture Productivity – R&D		Invest in R&D for alternative protein sources				
		Productivity – transfer/scale	Invest in technology transfer of low carbon livestock breeds				Typically use proven technologies, R&D and transfer need some public support
		Low carbon farming	Invest in developments in fertilizers, irrigation, and farming practices such as low-/no-tillage				
	Buildings	Efficiency	Install energy efficient lighting and heating, better insulation				Financial returns as market rate possible
		Electrification	Install or replace gas boilers with electric heat pumps				
	Waste		Invest in recycling programs to reduce volume of waste going to landfill				Likely done by private investors
	Fuel exploitation		Reduce methane emissions from coal, oil and gas power through efficiency/leak detection and repair				
Adaptation	Heat	Emergency response and planning	Implement better forecasting and early warning systems				Public good nature of the returns (avoided damages), typically low/no financial returns – some exceptions
		Urban planning and infrastructure	Reduce urban heat island effect through passive cooling (white/green roofs, cool building design)				
		Exposure management	Permanent shift in working hours to be during cooler parts of the day or at night				
	Drought	Agricultural R&D	Invest in agricultural R&D for drought-tolerant livestock breeds and crops				
		Water efficiency	Install/convert to efficient individual irrigation systems (sprinklers, drip/micro irrigation, last mile)				
	Flooding	Emergency response and planning	Enhanced weather and climate services including equipment (infrastructure) and forecasting				
		Urban planning and infrastructure	Invest in flood proofing existing buildings (wet floors, dry floodproofing)				
	Wildfire	Emergency response and planning	Invest in early warning systems for fire events				
		Urban planning and infrastructure	Invest in energy grid hardening by burying power lines				
		Exposure management	Increase healthcare system capacity for fire related health conditions (e.g., asthma)				

1. Priority needs: Development: lowest (red) and second lowest (orange) attainment band; Adaptation: band in top 90% of population weighted ND gain exposure index; Mitigation: band in top 90% of emissions

Based on the findings in this paper, we propose a financing framework anchored on five principles to improve coordination of capital deployment in the development and finance ecosystem, deliver efficiencies across the climate and development agenda and attract new capital to better scale up funding. They are:

- (i) **Expand available financing.** The global community should identify ways to expand the available pool of financing by elevating the ambition for reforms of the domestic and international development finance ecosystem, enhancing domestic revenue mobilization, and making stronger efforts to mobilize private capital through improvements in the enabling environment and innovative finance to lengthen the investment horizon and reduce the risks of relevant investments.
- (ii) **Accepting the short- to medium-term reality of constrained finance, it will be important to prioritize areas of greatest need at the country level with a view to making the most meaningful contributions to the global goals.** Recognizing that the locus of decision making on investments is the individual country and that country ownership of the priorities is a critical success factor, investment priorities should be selected based on the impact of each investment on each imperative for the country in question. Choosing an investment that addresses a country's own largest investment need is often consistent with making the most meaningful contribution to global goals. However, in cases where the priorities chosen by countries are not mirrored in those that would help make the most rapid progress against the global goals, the gap will need to be bridged through dialog, cooperation, and/or financial incentives.
- (iii) **Maximize impact across the prioritized imperatives.** In only a few cases does the top investment priority for one imperative overlap with top priority investments for another imperative. Where these overlaps do exist, they should be considered as actions are prioritized. For each selected high-impact investment, it is of course also important to identify and try to maximize any co-benefits, provided the cost of the investment remains reasonable.
- (iv) **Efficiently match financing sources and instruments to their best uses.** This may, for example, require public finance institutions to prioritize the scarcest forms of capital to support the most acute development and climate adaptation needs of lower income countries. The limited use of concessional finance to hasten
- (v) **Even with more financing and better matching of financing to development and climate investments, progress towards the global goals will require stronger efforts to drive down costs.** The global community should make more concerted efforts to accelerate technological innovation to lower costs of interventions in all sectors, reducing the overall funding needed.

To underpin these principles, three important additional areas of reforms are critical.

- The first is for all countries to put in place sound pricing policies, regulatory frameworks, and governance arrangements to encourage and sustain large-scale and long-term investments. First best solutions addressing the enabling environment in countries will decrease overall investment risks and encourage private capital flows in general and decrease the need for second best instruments.
- The second is better measurement and tracking of needs and capital flows to foster a more coherent and globally aligned climate and development finance agenda.
- Finally—although the political path to this action is not clear at present—reducing fossil fuel subsidies³⁹ and reaching global agreement on putting a price on carbon emissions which could be accomplished through a carbon tax or a cap-and-trade system.⁴⁰

To close the funding gap, we need actions both to increase the pool of financing and to lower the costs of interventions through much greater efforts at innovation. Actions to increase the amount of finance include:

- (i) Raise the ambition for MDB reform and increasing funding through existing mechanisms** e.g., increasing flow of grants and highly concessional loans to LICs and LMICs, reducing operational burden on borrowers, reducing the time required to get a project started, negotiating a capital increase for the World Bank, increasing donor contributions, especially to IDA.
- (ii) Increase domestic revenues and ensure it is mobilized towards the country-relevant imperatives** to raise sustainable financing for social spending and narrow fiscal deficits and borrowing needs (see Box 3 for further discussion).
- (iii) Experiment with new funding mechanisms** – especially for adaptation e.g., new forms of specific taxation to pay for adaptation investments like levees/coastal flood barriers, use of private financing from businesses most impacted by severe heat to pay for infrastructure upgrades.
- (iv) Broaden and innovate risk-mitigation instruments** that address credit, currency, and development risks to address market failures e.g., use of guarantees, currency hedging or political risk insurance to reduce risk and attract a broader range of investors.

³⁹ Fossil fuel subsidies totaled \$7 trillion in 2022 including explicit subsidies to producers and consumers and implicit subsidies (which include the cost of contributions to climate change through GHG emissions, local health damage through pollutants, etc.)

⁴⁰ “A carbon tax and cap-and-trade are opposite sides of the same coin. A carbon tax sets the price of CO2 emissions and allows the market to determine the quantity of emission reduction. Cap-and-trade sets the quantity of emissions reductions and let the market determine the price.” Frank, Charles (2014): Pricing Carbon: A Carbon Tax or Cap-And-Trade?”, Brookings, <https://www.brookings.edu/articles/pricing-carbon-a-carbon-tax-or-cap-and-trade/#:~:text=A%20carbon%20tax%20and%20cap,the%20market%20determine%20the%20price>.

- (v) **Expand the use of blended finance mechanisms** to catalyze private capital flows and crowd in private finance to equate to "more than the sum of the parts" e.g., providing concessional funding that supports project development and improves the risk-return profile of investment in LICs and LMICs to make them more attractive to private investors.

Beyond raising additional funds, there needs to be a much stronger focus on innovation to help bring down the unit cost of critical technologies required for each of the three imperatives. For example, innovation has helped reduce the delivery cost of vaccines and reduce the cost of low carbon technologies such as solar panels. This helps resolve the issue of scarce funding by decreasing the overall pool of capital required, and – particularly for addressing the mitigation challenge – allowing low carbon technology to become cost-effective and enabling private investors to meaningfully invest.⁴¹

Financing innovation is therefore a critical lever. Private venture, public and philanthropic capital will need to be deployed strategically to bring down green premiums in the highest impact areas, especially to address some of the tensions between mitigation and development from transitioning energy systems in LICs and LMICs, before commercial viability of the solutions is established, and private investment becomes realistic (See Box 4).

Box 3 – Increasing domestic revenue mobilization.

As acknowledged in 2015 in the Addis Ababa Financing for Development agenda, the mobilization and effective use of domestic resources is the most important component of durable and sustainable development finance and a critical pre-requisite for countries to achieve upper MIC status. In this box, we focus on domestic **revenue mobilization**.

Increased efforts to raise domestic revenues are needed for at least three reasons:

- (i) To strengthen “country ownership” of the development program and progressively reduce dependence on foreign assistance.
- (ii) To allow governments to invest in their citizens, deliver essential public services and increase trust.
- (iii) To signal stronger state capacity and institutions – which are essential preconditions to attract domestic and foreign investors.

Experience and evidence point to some ‘best bets’ that have the potential for improving domestic revenue collection equitably. These include:

- (i) Simplify tax policy by reducing exemptions: Apart from reducing fiscal revenues, exemptions and deductions make taxes less progressive. Additionally, a simpler tax code makes tax administration more efficient.

⁴¹ For example, a report on the scaling of critical climate technologies found that of 12 categories of climate technologies that could potentially reduce as much as 90 percent of total man-made greenhouse-gas (GHG) emissions if deployed at scale, only 10 percent are commercially competitive, while a further 45 percent are commercially available but will require further cost reductions through innovation and scale-up to become competitive. McKinsey and Company, 2023, ‘What would it take to scale critical climate technologies?’

- (ii) Reduce inefficient subsidies including those on fossil fuels. According to the IMF, explicit fossil fuel subsidies (i.e., resulting from undercharging for supply costs) amounted to \$1.3 trillion globally in 2022.
- (iii) Use digital tools to improve tax administration: By leveraging digital solutions, countries in the region can expand their tax bases, increase tax fairness, tax compliance, and unlock new or underutilized sources of revenues by reducing compliance burden and enhancing transparency.⁴²
- (iv) Strengthen public service delivery to increase trust and incentivize citizens to pay taxes: A strong association has been observed between the quality of service delivery and tax collection globally. It is believed that citizens are more likely to pay taxes when they perceive that the government is effectively using tax revenue to provide essential services.
- (v) Ensure that tax reforms are sustainable by paying attention to inclusivity: There is, by now, ample evidence that taxes have important implications for different segments of the population, and are especially significant for gender equality, directly and by interacting with other structural inequalities between men and women. For example, taxes affect women's incentives to participate in the labor market directly and by interacting with the distribution of unpaid work, consumption taxes can have different impacts on women, and tax administration practices can have differential impacts on men and women.⁴³ Examining these differences carefully in the design of tax policies and tax administration practices can serve not only equity objectives but also improve income and wealth generation, thereby broadening the tax base itself.

⁴² [Filling the Gap by Filing Taxes: How Technology Can Aid Government in Tax Collection](#), World Bank (2022)

⁴³ Gendered Taxes: The Interaction of Tax Policy with Gender Equality, IMF (2022)

Box 4: Lowering the Cost of Climate Mitigation⁴⁴

The estimated cost of climate mitigation in developing countries if the world is to stabilize warming at 1.5 degrees centigrade is high. For example, the Report of the High-Level Expert Group on Climate Finance estimates that around \$2 trillion is needed in finance per year to meet this goal. The study suggests that half of that can come from domestic sources in developing countries and the other half (\$1 trillion) will be required from international financing. It suggests that starting by 2025, the world will need private sector financing to increase from \$69 billion to \$395 billion, non-concessional official finance from \$31 billion to \$161 billion and climate ODA to rise from \$12 billion to \$96 billion. The numbers would rise considerably further beyond that point.

To put these numbers in perspective, note the following:

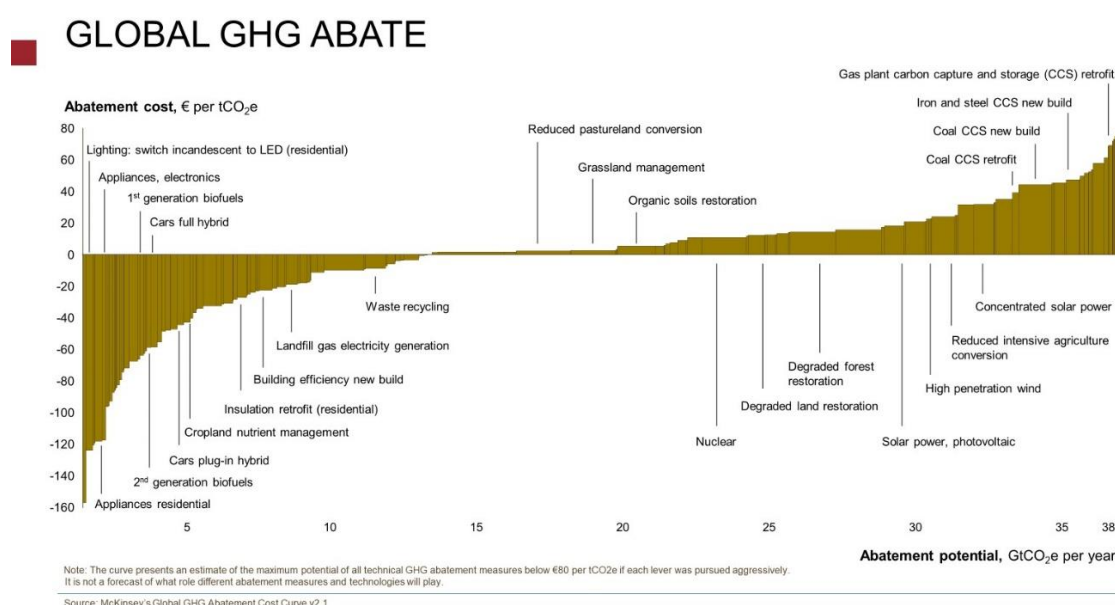
- (i) The \$1 trillion that is to come from domestic financing is equal to about 3¼ percent of Gross Domestic Product (GDP) in developing countries (excluding China). Tax revenues in those same countries are around 10 percent of GDP.
- (ii) With respect to the near six-fold increase in private finance to \$395 billion by 2025, it is worth looking at the last thirty years of effort to increase private participation in infrastructure in developing countries. Total annual private investment in infrastructure projects in those countries has never surpassed \$158 billion, a level reached a decade ago, and hasn't exceeded \$100 billion since 2015. Thirty percent of the investment for these deals comes from public sources, which helps explain why current estimates of overall private capital mobilization by multilateral development bank is below one to one and why in total, 83 percent of total infrastructure investment⁴⁵ in developing countries is still publicly financed. Even if more private infrastructure finance were forthcoming, private investors want very high returns⁴⁶.
- (iii) In an environment of higher interest rates, the gap in interest rates between International Bank for Reconstruction and Development (IBRD) borrowing costs and emerging market private sector borrowing costs has risen from less than 5 percent in 2020 to over 8 percent⁴⁷ in 2022.
- (iv) The \$96 billion of required climate ODA for 2025 compares to current global country programmable aid (ODA that reaches the country to be spent on budget) worth only \$65 billion. It is equal to more than fifty percent of all ODA, including rich country domestic spending and humanitarian relief.

ODA budgets are not increasing, and repeated studies from Center for Global Development (CGD) and elsewhere⁴⁸ have emphasized that the climate finance claimed by donor countries in their reporting to the OECD is in considerable part diverting⁴⁹, not adding to, development finance. Only 33 percent⁵⁰ of international climate finance tracked by the OECD went to LICs and LMICs. This diversion is costly, because while we don't know how to leverage ODA efficiently to reduce emissions, we *do* know how to focus them on poverty reduction. If all ODA was spent in LICs and LMICs, that suggests it

might raise annual growth by about 0.85 percentage points⁵¹ --or 18 percent of GDP if sustained over 20 years. Meanwhile, even if all development finance were diverted away from the poorest countries, at best the return would be a partial fix for less than half of the mitigation spending in a group of countries responsible for less than half of global emissions.

The only practical solution is to push down the curve ...

The McKinsey Cost Curve (see below) lines up greenhouse gas abatement technologies by their cost per ton of emissions averted.⁵² Next to the y-axis are approaches that both reduce GHG emissions and save money – things like switching to LED lighting and improving building energy efficiency. In the middle are approaches that are cheap but still slightly more expensive than existing higher-emission approaches (think nuclear power over coal power). On the right are approaches that, with today's technologies, are very expensive per ton of GHG emitted, like carbon capture and storage.



To make more rapid global progress, the priority should be dropping the curve. The greatest impact the rich world can have toward a low-carbon future for poorer countries

⁴⁴ This box was authored by Charles Kenny, Center for Global Development. It is based in "Technology and Cheap Finance in the Global Fight against Climate Change." CGD Note 355. Washington, DC: Center for Global Development. <https://www.cgdev.org/publication/technology-and-cheap-finance-global-fight-against-climate-change>

⁴⁵ [Public-Private Partnership Legal Resource Center](#), The World Bank

⁴⁶ [The Simple Math of Development Finance](#), CGG (2022)

⁴⁷ [Is World Bank Lending a Hot Ticket in a Global Credit Crunch?](#), CGG (2022)

⁴⁸ [Is Climate Finance Leaning Towards \\$100 Billion "New and Additional"?](#) CGD (2021)

⁴⁹ [How Much Climate ODA Is New and Additional?](#), CGD (2023)

⁵⁰ [Mobilised private climate finance: trends, insights and opportunities](#), OECD (2022)

⁵¹ [Official Development Assistance, Global Public Goods, and Implications for Climate Finance](#), CGD (2020)

⁵² Although this cost curve is from 2017 and has no doubt shifted since then, the qualitative points that arise from the analysis are still valid.

is to further research, develop and scale⁵³ low- and zero-carbon technologies, complemented with the support to poorer countries to adopt these technologies.

Additionally, there is a considerable role for the international community to move the line so that more of the cost curve is under the zero mark, through MDB unsubsidized finance. Each dollar of new MDB equity can support \$7 in direct MDB lending⁵⁴ in perpetuity. Assuming a twenty-year average maturity, MDBs could sustain an additional \$350 billion a year in mitigation-related lending in perpetuity with about \$50 billion a year over twenty years in additional capital. Development Assistance Committee (DAC) members account for around 60 percent⁵⁵ of current World Bank shareholding. Assuming that number remains around the same and applies approximately across MDBs, it suggests that about \$30 billion of (ODA-eligible) funding a year would be required from DAC members in order to ‘flood the zone’ for climate mitigation projects in the middle of the curve. This should, of course, be new and additional finance.

That approach levels the playing field and helps ensure the most cost-efficient low and zero-carbon projects are carried out worldwide. In turn this will help scale markets for new technologies and bring prices further down.

This means (i) Global advocacy around climate change should pay considerably more attention to technology advance in rich countries, including R&D, subsidies and taxes; (ii) climate and development finance discussions should focus urgently on protecting core finance for the development and adaptation needs of the world’s poorest countries (iii) climate negotiators should agree new, additional and attractive public financing that will help level the global playing field in terms of the financing costs of delivering low or zero carbon investments in the middle of the cost curve.

VII. Conclusion

The world is facing a number of major challenges that are threatening the lives of its people and the sustainability of the planet. Many are struggling to address their basic needs—health and livelihoods—while also dealing with the rapidly multiplying consequences of climate change. What we are seeing today is, on the one hand, a welcome acceptance that we need to move faster to reduce greenhouse gas emissions before we collide with planetary and climatic boundaries but also a global conversation on resource allocation that has become increasingly polarized with climate and development proponents being pitted against each other in the fight for scarce resources.

In this context, we need to develop a more joined-up framing of the problems and solutions. We need a framework for decision making that allows *all countries* to see themselves as part of the global system and where the discussions are not framed as “either or” but rather as “both and”. The way to do that is to recognize that different countries face different priorities amongst the three imperatives, different levels of urgency to achieve these goals, and different potential to contribute to progress on each of

⁵³ [For Richer Countries, Climate Mitigation Should Begin at Home](#), CGD (2021)

⁵⁴ [The Triple Agenda](#), The Independent Experts Group (2023)

⁵⁵ [Scenarios for Future Global Growth to 2050](#), CGD (2023)

these imperatives. Therefore, the path of that transition will differ among countries, as will the urgency of achieving the three imperatives.

This means that we need to be smart about financing investments in different countries that will move us closer to all the global goals in the shortest time possible.

For example, as a group, 40 percent of low-income countries' populations (on average) live in poverty. At the same time, these countries contribute negligibly to global carbon emissions, only 2 percent of the global total at present, expected to rise to only 3.2 percent by 2050 under the world's current emissions trajectory. Thus, at least to a first approximation, reducing poverty in low-income countries is more urgent than reducing carbon emissions in these countries. This certainly doesn't mean that these countries should avoid a low-carbon growth model, it just means that their first priority is likely to be improving the human condition, reducing poverty and laying the foundation for decent jobs and livelihoods. Meanwhile, in upper middle-income countries and high-income countries—where the vast majority of emissions take place today both in total and per capita—reducing emissions is key to reaching global climate goals.

Second, we need to match different types of investments to different parts of the capital stack. That is **THE key** challenge that the development community and private investors need to solve—to understand all the different pools of private capital and how to attract them to meet the challenges of today.

Actions to address climate and development cover the full spectrum of risk and return expectations – from pure 'public goods' to investments that can be fully financed with private capital. This range of investments needs to be matched to grants, loans of varying degrees of concessionality, domestic revenues, and private capital. For example, investments aimed at accelerating human capital development and enhancing resilience to climate change in LICs—which have low financial returns and benefits that either accrue over long horizons or accrue in the form of avoided costs—will need domestic public resources, grants, and highly concessional loans. These resources are the scarcest and their use must be directed to where they can have the greatest development impact and where there is no appropriate alternative based on risk and return considerations. This will require international finance institutions to ensure grants and highly concessional finance are prioritized to support development and climate adaptation needs of lower income countries.

At the same time, there are some investments that have viable revenue streams and are suited to private investment or blended finance when public financing can be used to catalyze private investments for priority investments. Third, even with prioritizing investments, better matching of financing to development and climate investments, and attracting more private investors, meeting the global goals will require stronger efforts to drive down costs. The global community needs to make more concerted efforts to accelerate technological innovation to lower costs of interventions and thus reducing the overall funding needed. This is especially important given the political challenges of other

sensible approaches to raising revenues and incentivizing innovation —such as carbon price floors and/or carbon taxes.

Annex 1—Examples of Overlaps, Co-Benefits and Tensions

IDENTIFYING AND CHARACTERIZING HIGHEST IMPACT ACTIONS

We compiled 150 high impact actions

Development	<ul style="list-style-type: none"> • Increase distribution of long-lasting insecticide treated nets • Invest in road, rail, port and aviation network development and improvement
Adaptation	<ul style="list-style-type: none"> • Reduce urban heat island effect through passive cooling • Invest in artificial or natural flood barriers (berms, dams, flood walls, levees)
Mitigation	<ul style="list-style-type: none"> • Install intermittent renewables • Phase out fossil fuel vehicles and encourage adoption of zero emission vehicles

We identified overlaps, co-benefits or tensions

	Direct overlap: High impact action for at least two objectives	Invest in heat-resilient crop and livestock (development and adaptation)
	Co-benefit: Action which positively impacts a second objective	Transition from coal fired power generation to renewables (mitigation action with some co-benefits for development)
	Tension: Action which addresses one objective but slows progress in another	Build new fossil fuel generation capacity (development action that slows mitigation)

Source: Mitigation: IPCC Sixth Assessment Report, Working Group III: Mitigation of Climate Change, Figure SPM 7, IEA and NGFS transition investment reports, broad literature review and expert interviews; Adaptation: cross sectoral literature review and expert interviews. Development: literature review, expert interviews and distillation of investments currently underway through the SDG investments identified in the SDG investor platform at <https://sdginvestorplatform.undp.org/>.

Not exhaustive

EXAMPLES OF DIRECT OVERLAPS

Direct overlap

High impact action for at least two objectives – these actions would appear on at least two ‘top lists’ of investments created independently for each objective (adaptation, mitigation, development)

Action	High impact for:
Invest in water efficiency practices - including irrigation, municipal use, industrial use	Development - 6. Clean water and sanitation; Adaptation – Drought
Invest in distributed energy solutions (e.g., solar based microgrids) for remote/isolated communities	Development - 7. Affordable energy; Mitigation – power; Adaptation – All
Expanding public transport networks and access; urban planning to facilitate mass transport options	Development - 11. Sustainable cities and communities; Mitigation – transport
Invest in agricultural R&D for heat and drought-tolerant livestock breeds and crops	Development - 2. Zero hunger; Adaptation - Drought
Invest in grid and transmission & distribution capacity (facilitating higher variable renewable sources in generation mix)	Development - 7. Affordable energy; Mitigation – power
Provide specialized skills and job training (especially in jobs required for ‘green’ transition)	Development - 8. Decent work and economic growth; Mitigation – all
Invest in technologies and techniques to increase agricultural productivity	Development - 2. Zero Hunger; Mitigation – forestry (by avoiding further deforestation for agricultural land)
Invest in high quality urban planning and design for safe and livable cities	Development - 11. Sustainable Cities and Communities; Adaptation - flooding, heat
Invest in the protection and restoration of water related ecosystems	Development - 6. Clean water and sanitation; Adaptation - flooding

Source: Mitigation: IPCC Sixth Assessment Report, Working Group III: Mitigation of Climate Change, Figure SPM 7, IEA and NGFS transition investment reports, broad literature review and expert interviews; Adaptation: cross sectoral literature review and expert interviews. Development: literature review, expert interviews and distillation of investments currently underway through the SDG investments identified in the SDG investor platform at <https://sdginvestorplatform.undp.org/>.

EXAMPLES OF CO-BENEFITS

Co-benefit

Action which positively impacts a second objective, but would not appear on the 'top list' for the second objective

Action	High impact for:	Additional benefit for:
Phase out coal fired power stations, phase out internal combustion engine transportation	Mitigation - power	Development - 3. Good Health and Well-Being
Invest in public cooling shelters, hydration stations and misting	Adaptation - heat	Development - 3. Good Health and Well-Being; Development - 8. Sustainable cities and communities
Increase healthcare system capacity for heat or fire related health conditions (e.g., heat stress, asthma)	Adaptation - heat, wildfire	Development - 3. Good Health and Well-Being
Encourage diet shifts to reduce total protein intake and shift away from ruminant proteins ¹	Mitigation - agriculture	Development - 3. Good Health and Well-Being ¹
Upgrade existing and ensure new transportation infrastructure is resilient to new extreme temperatures (road surfaces, runways length and surface, rail materials)	Adaptation - heat	Development - 9. Industry, Innovation and Infrastructure
Facilitate temporary or permanent migration away from most exposed regions (by any hazard)	Adaptation - extreme heat, coastal flooding	Development - 10. Reduced inequalities

1. Only applicable where existing diets are sufficiently high in protein

Source: Mitigation: IPCC Sixth Assessment Report, Working Group III: Mitigation of Climate Change, Figure SPM.7, IEA and NGFS transition investment reports, broad literature review and expert interviews; Adaptation: cross sectoral literature review and expert interviews. Development: literature review, expert interviews and distillation of investments currently underway through the SDG investments identified in the SDG investor platform at <https://sdginvestorplatform.undp.org/>.

EXAMPLES OF SINGLE IMPACT ACTIONS

Single impact action

Action which is highly impactful for only one objective

Action	High impact for:
Invest in increasing access to education, especially for girls	Development - 1. No poverty
Maternal and child health: improve Basic Emergency Obstetric and Newborn Care (BEmONC)	Development - 3. Good health and well being
Maternal and child health: increase child immunizations	Development - 3. Good health and well being
Increase school attendance and completion rates (e.g., information campaigns on benefits of schooling)	Development - 4. Quality education
Improving learning practices (e.g., tablets, teaching to level, structured and targeted lesson plans)	Development - 4. Quality education
Invest in programs to reduce domestic violence rates	Development - 5. Gender equality
Provide basic financial literacy education	Development - 8. Decent work and economic growth
Install cell towers and internet in remote and/or underdeveloped areas	Development - 9. Industry, innovation and infrastructure
Electrify industrial energy requirements (with renewables) where possible (e.g., EAF steel production route)	Mitigation - industry
Investment in hydro-meteorology equipment, monitoring and information (e.g., sea levels, river flows)	Adaptation - flooding

Source: Mitigation: IPCC Sixth Assessment Report, Working Group III: Mitigation of Climate Change, Figure SPM.7, IEA and NGFS transition investment reports, broad literature review and expert interviews; Adaptation: cross sectoral literature review and expert interviews. Development: literature review, expert interviews and distillation of investments currently underway through the SDG investments identified in the SDG investor platform at <https://sdginvestorplatform.undp.org/>.