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KEYS TO CLIMATE ACTION

CHAPTER 12: FINANCING CLIMATE CHANGE MITIGATION AND ADAPTATION IN DEVELOPING COUNTRIES

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Overview

The provision of international financial assistance to help developing countries undertake measures for climate change mitigation and adaptation is a fundamental element in the UN Framework Convention on Climate Change (UNFCCC) under which the negotiations on climate change are being conducted. This chapter attempts to quantify the scale and possible composition of international financial assistance that will be required to help developing countries fulfil their COP26 commitments and suggests how this might be agreed in international negotiating fora.

The chapter is in four parts. Section 1 provides a brief historical review of how the commitment to provide financial assistance evolved since the start of the negotiations in 1992. Section 2 reviews estimates emerging from different studies of the additional investment that developing countries will have to make to meet the challenge of containing global warming to 1.5°C above preindustrial levels. Section 3 provides an assessment of the potential scale of international financial assistance that might be needed to make this investment possible. Section 4 examines the role of multilateral development banks in raising the amount of financial flows to required level.

The historical background

The need for international financial assistance to developing countries was explicitly included in the UNFCCC in recognition of the basic asymmetry between advanced countries and developing countries in terms of their contribution to the problem of global warming and their capacity to manage it. It reflects the principle of Common but Differentiated Responsibilities and Respective Capabilities which is enshrined in the UNFCCC.

Global warming is caused by the increasing concentration of greenhouse gases (GHGs), particularly CO_2, in the atmosphere. This increase has been largely due to the advanced countries using fossil fuels as their main source of energy as they industrialized. It was recognized that the developing countries were late comers to industrialization and had contributed very little to the accumulated concentration of GHGs. Their level of emissions per-capita was also much lower and the resources available with them for mitigation and adaptation were also clearly inadequate.

Recognizing this asymmetry, the first stage of the negotiations, which culminated in the Kyoto Protocol in 1997, focused primarily on imposing restrictions on emissions on advanced countries. It was recognized that the development objectives of the developing countries would necessitate higher energy consumption and therefore higher emissions, but since they had contributed only a small fraction of the stock of GHGs in the atmosphere and had low emissions per capita, no obligation was imposed on them to reduce emissions. It was also understood that they would receive international assistance for undertaking mitigation actions, although there was no agreement on what this would involve.

The Kyoto Protocol was a failure. The United States never ratified it, Canada withdrew in 2011, and Japan, New Zealand, and Russia did not continue after the first commitment period (2008–2012). The absence of any commitment on the part of developing countries became a sticking point, particularly because China was growing exceptionally rapidly, and its emissions had increased very considerably, but being classified as a developing country in the UNFCCC framework, it was exempt from restrictions.

Subsequent negotiations in the Conference of the Parties (COP) began to focus increasingly on the need to obtain some commitment on mitigation from the developing countries. The first step forward in this direction was at COP15 in Copenhagen, 2009, when a group of countries comprising the developed countries led by the United States and the developing countries notably China, India, South Africa, and Brazil agreed on the so-called Copenhagen Accord. In the Accord, the developing countries accepted that they should take some mitigation measures, which in many cases comprised reducing the emissions intensity of GDP. To assist in this

process, the advanced countries set a goal to jointly mobilize U.S. $100 billion per year by 2020 as *new* and *additional* financial assistance to developing countries.

The amount of U.S. $100 billion per year was determined entirely arbitrarily. It was not based on any quantification of the additional cost that would be incurred on mitigation and adaptation measures in developing countries for the simple reason that the precise extent of these measures was not known in 2009. The assistance was also envisaged to be a combination of public and private flows, but there was no indication of the relative proportions of the two components. There was also no clarity on what flows would count as "additional" toward the fulfilment of the obligation.

The Copenhagen Accord was initially not supported by all countries. Consensus was achieved a year later, in 2010, at COP16 in Cancun (Mexico), where all countries adopted the Cancun Agreement that was largely based on the outcomes of the 2009 Accord. The Green Climate Fund was established under the UNFCCC to facilitate the transfer of funds.

The next major step forward was at COP21 in Paris in 2015, when nearly all developing countries committed to taking various mitigation measures, including targets for reducing emissions intensity of GDP, increasing the share of renewables in electricity generation, and afforestation. Although the broadening of the commitment to contain emissions was rightly celebrated, no attempt was made to recompute the amount of assistance needed in the light of the new commitments. Instead, the earlier promise to reach an additional U.S. $100 billion per year by 2020 was reiterated.

The actual delivery of financial assistance against this promise has been disappointing. The extent of the shortfall cannot be estimated very precisely because of the lack of clarity on what categories of flows would qualify as new or additional. The OECD (2022) estimates that the flow of climate finance reached U.S. $83.3 billion in 2020 but other estimates, e.g., by Oxfam (2020), are much lower.[1]

COP26 in Glasgow in 2021 was widely seen as a major advance because almost all countries committed to reducing the absolute amount of emissions to net zero by various dates around the mid-century. These commitments are much stronger than the earlier commitments by developing countries, which were restricted to reducing the emissions intensity of GDP. The commitments therefore call for massive investments in the energy and related sectors. An important consequence of this change is that the old estimate of U.S. $100 billion per year financial assistance is no longer relevant. It needs to be reassessed based on the scale of the effort developing countries have to make.

[1] U.S. $19–22.5 billion in 2017–2018.

The Glasgow Pact recognized the need for recalibrating the scale of financial assistance, but it did not quantify what needed to be done. It regretted that the promised U.S. $100 billion has not yet been met and *urged that it be fully delivered urgently and through to 2025,* after which the scale of assistance would have to be substantially expanded. The scale of increase needed beyond 2025 was left to be negotiated in subsequent COPs.

Investment requirement of the transition

The first step in agreeing on the additional financing needed must be to agree on the scale of the additional investment that developing countries will have to make to fulfil their commitments to reach net zero. There can be no doubt that any strategy for reaching net zero will require very large investments.

It will require investments in the power sector shifting away from fossil fuel-based electricity generation to renewables. Sectors using fossil fuel energy, such as transport, will have to shift to electricity and this shift will call for new investments in the automotive sector. Industries in the "hard-to-abate" category, such as steel, fertilizers, and petroleum refining, which use fossil fuel for heating and as feedstock, will have to shift to alternatives such as green hydrogen. Urban buildings, both commercial and residential, have to be made more energy efficient. Despite all these efforts, some areas will still need to use fossil fuels, leading to irreducible emissions. These will have to be offset by expanded carbon sinks via afforestation and carbon capture utilization and storage.

In addition to these investments linked with mitigation, developing countries will have to undertake investments for adaptation to manage the consequences of climate change that have already taken place, and will continue for some time even if we succeed in limiting global warming to +1.5°C by 2100. While investments in mitigation will be frontloaded, those on adaptation are likely to be backloaded.

Several estimates of the investment needed to manage climate change in the world have been made by different studies.

- IPCC (2018) estimated average annual investments in the global energy sector of about 2020 U.S. $2.8 trillion per year between 2016 and 2035.
- IEA (2021a) estimated a requirement of U.S. $4 trillion per year between 2021 and 2030 for the energy sector globally. Since the current global annual spending on clean energy is estimated at about U.S. $750 billion, the additional investment needed is U.S. $3.25 trillion per year.[2]
- McKinsey Global Institute (2022) estimated that between 2021 and 2050 the world will need investment of U.S. $4.5 trillion per year in energy systems and land use. Of

[2] Another study estimates that annual investments in renewables in developing countries need to exceed U.S. $1 trillion by 2030, as against U.S. $150 billion in 2020 (IEA, 2021b).

this, U.S. $3.5 trillion will be additional and U.S. $1 trillion will be a reallocation from current high emission assets to low emission assets.

- IMF[3] has estimated the need for energy and related investments amounting to U.S. $3.3 trillion per year up to 2030.
- CPI (2021) has estimated a total need for climate finance at U.S. $4.35 trillion each year by 2030, against current levels of only U.S. $632 billion. This implies an incremental investment need of U.S. $3.72 trillion.

These estimates vary between U.S. $2.8 and U.S. $4.5 trillion amounting to about 3 to 4 percent of the global GDP. However, our purpose in this chapter is limited to assessing the scale of financial assistance that may need to be extended to developing countries. Furthermore, China, which belongs to this group, can be reasonably excluded because it has the capacity to meet its financing needs without external financial assistance. Our concern can therefore be narrowed to the additional investment requirements of the developing countries other than China.

The most recent study that attempts to estimate the investment requirement of this group of countries is Bhattacharya, Dooley, Kharas, and Taylor (2022).[4] The study focusses on the "incremental investment" needed above the baseline of 2019 and using this definition it reports an incremental requirement of U.S. $1.3 trillion in the year 2025, rising to U.S. $3.5 trillion by 2030. This covers not only investment in the energy and related sectors, but also investment in adaptation and on preservation of natural resources, as well as investment/expenditure in education and the skill development needed in a changing world.

It is important to recognize that not all the incremental investment as defined above is truly "additional." The shift to renewables will certainly involve a massive investment in renewable energy (RE) capacity, but all this is not "additional" since some investment on conventional power capacity would have to be made to reliably cater to the energy demands of a growing economy. The additional cost is only the extra cost of creating RE capacity that is above the cost of creating the same capacity in conventional power generation. Since RE is more capital intensive than conventional power, the investment in RE may well involve higher costs, but against this we do not need to invest in capacity to produce (or import) fossil fuels and that advantage must be factored in. For the purpose of this chapter, we have not delved into how the various studies reviewed above have handled these problems, but simply accepted the estimates as the best possible basis for proceeding.

Bhattacharya et al. (2022) also emphasize that their estimate should not be viewed as the "cost" of decarbonization, which may be perceived as suggesting the same resources could otherwise

[3] IMF Managing Director Kristalina Georgieva's opening remarks at IMF Policy Dialogue on June 1, 2022. Accessible at https://www.imf.org/

[4] This study updates an earlier study by Bhattacharya and Stern (2021).

have been used to generate faster growth which has to be forsaken because of the compulsion to decarbonize. They argue persuasively that an apparently less expensive, but carbon intensive conventional energy pathway would not be in the interest of developing countries. It would lead to excessive emissions and subsequently higher global warming, which would impose huge costs in terms of loss of productivity and income. As the IPCC has convincingly established, the developing countries would be the worst sufferers from such a process (Ahluwalia and Patel, 2022a).

The increase in investment being proposed should therefore be viewed as the investment needed to put these economies on an inclusive and sustainable growth path, as envisaged in the 2030 Sustainable Development Goals (SDG). This path involves an acceleration of growth, which is one of the SDG targets. In other words, the investment requirement is not just the investment required to decarbonize the existing growth path. It is the incremental investment needed to achieve the higher growth rates envisaged by the SDGs while decarbonizing the economy.

Turning to the increase in resources needed to finance the incremental investment Bhattacharya et al. (2022) distinguish between domestic and international resources. For each component, they estimate the increase that can be expected under business-as-usual (BAU) projections and the additional amount needed to meet the incremental investment requirement for 2025.

As shown in Table 12.1, the total incremental need of U.S. $1.3 trillion in 2025 can be financed partially by about U.S. $236 billion, which is expected to be generated from domestic resources on a BAU basis, and about U.S. $112 billion, as the BAU increase from international public and private sources, leaving an uncovered gap of U.S. $957 billion, which would require additional effort. As much as U.S. $417 billion is projected to come from domestic resources based on efforts to mobilize resources beyond the BAU level. The gap that remains, i.e., U.S. $540 billion, is expected to be filled by international financing, both public and private.

Table 12.1: Additional financing needed by 2025, over 2019 levels, in developing countries other than China

($ billion)	**Total Incremental Need***	**Increase Expected Under BAU**	**Additional Required**
	(1)	*(2)*	*(3)*
Domestic Resources	**653** (50%)	**236**	**417**
International financing	**652** (50%)	**112**	**540**
of which…			
ODA	*96 (7.4%)*	*12*	*84*
MDB non-concessional	*126 (9.7%)*	*27*	*99*
Bilateral non-concessional	*35 (2.7%)*	*4*	*31*
Private flows	*395 (30%)*	*69*	*326*
TOTAL	**1,305**	**348**	**957**

Note: Figures in parentheses are percentages of the total.
Source: Bhattacharya et al. (2022)

An important feature of the projections in Table 12.1 is that a substantial portion of the gap must be met by domestic funding. This is relevant for COP27 negotiations because developing country negotiators have often tended to assume that the UNFCCC provides that the entire cost of climate change mitigation and adaptation to developing countries must be provided in the form of international financial assistance. This expectation is perhaps encouraged by Article 4.3 of the UNFCCC, which refers to the provision of "new and additional financial resources to meet the *agreed full costs* incurred by developing countries…" However, the Convention provides no operational definition of the phrase "agreed full costs," and this opens the door to multiple interpretations. In practice, negotiators will have to be guided by what is realistic. Some of the relevant issues are discussed below.

Domestic financing component

Table 12.1 projects that the additional domestic resources of U.S. $236 billion on a BAU basis could be supplemented by U.S. $417 billion additional domestic effort (about 1.4 percent of the GDP of these countries in 2025), so that the two together would contribute about half of the total incremental investment needed.

Planning for raising a substantial part of the additional resources needed domestically is not only pragmatic, it is also sensible from the point of view of maintaining macroeconomic balance. Too large a dependence on external financing would require the recipient economies to run unsustainably large current account deficits, which in turn would require a corresponding real appreciation of the currency, which may undermine their export potential. Furthermore, since the inflows would not be grant flows, they would inevitably involve a considerable build-up of foreign debt, raising issues of debt sustainability.[5]

The IMF has already identified the increased foreign indebtedness of developing countries as a consequence of the pandemic as a major problem, and any projection of increased international debt exposure has to keep this aspect in mind.

In practice, the proportion of domestic financing will have to vary across countries. The low-income countries, for example, could legitimately expect a larger proportion of their additional investment requirement to be covered by concessional international assistance. There is no separate estimate available for the climate change-related investment requirements of low-income countries. However, since the total GDP of these countries is only 3 percent of the total GDP of emerging market and developing economies (EMDEs), excluding China, the additional requirement for these countries would be relatively manageable. However, it would be a mistake to think that the scale of international assistance can be limited to the needs of just the low-income countries for the simple reason that the bulk of the CO_2 emissions are projected to come from the large- and middle-income countries.

Acceptance of a substantial role for domestic resource mobilization has important policy implications, some of which will pose difficult choices. Mobilizing larger domestic resources in an environment where the public finances of most developing countries are strained implies an improvement in a government's fiscal position to help finance increased public investment in climate-related areas without expanding government borrowing, which only leads to crowding out of private investment.

Improving the fiscal position of developing countries calls for increases in tax revenues and/or eliminating inefficient subsidies, including especially fuel subsidies. Serious consideration needs to be given in this context to the scope for imposing appropriate carbon taxes. These would not only send the right price signals to accelerate the shift away from fossil fuels, they

[5] Bauer et al. (2020) simulate the trade-offs between the global cost of mitigating climate change and national sovereignty, i.e., ability to maintain governing control of economic resources, which is factored through the amount of international financial transfer needed to achieve the Paris Agreement goal of +2°C with equitable effort-sharing across countries. They find that sovereignty concerns can be minimized significantly with only marginally higher global costs, if CO_2 abatement costs are equitable, i.e., based on each country's ability to pay.

would also raise much needed revenue to finance climate-friendly investments, including investment for adaptation.

Both the imposition of carbon taxes and the elimination of fuel subsidies will be criticized on the grounds that they adversely affect the budgets of poorer households. This is a legitimate concern, but this problem can be dealt with by targeted cash transfers to vulnerable households while allowing the bulk of the consumers to contribute to revenue mobilization.

Domestic financing of climate-related investment will include some direct public investment. However, the burden on the public sector can be minimized if the private sector can also be persuaded to invest. Developing countries would be well advised to maximize the involvement of the private sector in facilitating this transition. The scope for attracting such private investment is increased if government fiscal deficits are kept in check as that would help keep the interest rates low. However, it may be necessary to use public funds to leverage larger private flows e.g., through various forms of public–private partnership. The scope for such experiments will obviously vary from country to country.

Role of international financing

If half the financing needed comes from domestic efforts, as proposed by Bhattacharya et al. (2022), the remaining half has to be financed by international finance. Since only about U.S. $112 billion is projected to become available on a BAU basis, the remaining U.S. $540 billion has to be met from additional international financing.

The scale of the challenge can be seen from the fact that the additional amount required is nearly five times the expected flow of international financing into this subgroup of countries in 2025 under BAU. It is also over five times the U.S. $100 billion per year that has been talked about thus far! How this amount might be realized from different sources is discussed in the next section.

Sources of external finance

There are four different sources of external finance that could provide the amount of climate finance needed. These are (i) bilateral official development assistance (ODA); (ii) non-concessional lending by multilateral development banks (MDBs); (iii) bilateral non-concessional lending (export credit institutions, national development banks); and finally (iv) international private finance which can take the form of equity investments (FDI) or external loans. The first three constitute public flows and depend critically upon the willingness and ability of the major advanced countries to expand international bilateral financing and support expanded lending from the MDBs, which they effectively control.

There can be little doubt that the international environment at present does not encourage optimism about the scale of the response we can expect in any of these dimensions. Most advanced countries face a difficult economic situation, in which their domestic effort to deal with the pandemic has exacerbated fiscal strains and this situation is set to worsen as central banks take steps to control inflation. The situation is made worse by the confrontation caused by the Russian invasion of Ukraine and growing geopolitical frictions with China. All of this has led to a retreat into nationalism and a fragmentation of global solidarity, greatly weakening support for multilateral institutions. And yet, the threat of climate change can only be met through greater global cooperation and trust. In the rest of this section, we proceed on the assumption that the current geopolitical stalemate, which has greatly eroded the willingness of the major countries to cooperate internationally, will somehow be overcome, so the world can embark on a cooperative effort on the scale that is needed to combat the threat of climate change.

Table 12.1 shows the expected availability from each source of international finance on a BAU basis, and the additional amount that could be mobilized through special efforts.

The role of official development assistance (ODA)

ODA is the only source of external finance that low-income countries can rely upon since they cannot afford non-concessional long-term loans and they are unlikely to attract private capital. The BAU increase in ODA of only U.S. $12 billion, projected by Bhattacharya et al. (2022), is a realistic assessment of the prospects in the current situation. The authors, however, make a strong case for increasing ODA for the poorest countries by U.S. $96 billion by 2025—a 50 percent increase over the 2019 level.

An increase of this order is clearly highly optimistic, given the current situation, but it is reasonable to argue that the present situation is temporary and, as normalcy returns, the major

donors would be willing to consider raising ODA substantially. It is worth noting that the resulting ODA level would only constitute 0.45 percent of the donors' GDP expected in 2025.

Public bilateral flows

Bilateral non-concessional flows include export credits, loans from national development banks or sovereign investment funds, technology transfers, and project-specific partnerships in certain areas e.g., accelerated phasing out of coal power plants, green hydrogen infrastructure development, electric vehicle (EV) parts, and other RE components manufacturing, etc. The BAU increase in these flows constitutes the smallest component among the different sources of finance, but Bhattacharya et al. (2022) argue that, with additional effort, it might be possible to mobilize an additional U.S. $31 billion, above the BAU level. This would double the size of these flows to U.S. $70 billion by 2025. This would strain bilateral budgets, but it is possible that the preference for dealing with developing countries chosen for ideological and political compatibility through bilateral partnerships may actually make it easier to expand flows through such windows in the near future.

The U.S. International Development Finance Corporation announced in December 2021 to help finance capacity expansion of a U.S.-based solar photovoltaic (PV) manufacturer in India, with a provision of U.S. $500 million. The investment is intended to strengthen the supply chain of key products strategic to the interests of the donor country. Similarly, the German development bank, KfW, has loaned Colombia U.S. $160 million to support the transition to RE and adoption of EV technology in the country.

Long-term non-concessional lending from MDBs

Middle-income developing countries do not need ODA, but they do require long-term capital, at reasonable rates, to undertake the investments required to manage climate change. Many of these countries, especially those in Asia, expect to grow rapidly over the coming decades, and this will require expansion of infrastructure. If they build infrastructure of the conventional highly carbon intensive type (e.g., coal power plants), as has been the case so far, the world will be locked into a high emissions pathway with no chance of reducing emissions to net zero by 2050.

The ability to deliver long term non-concessional capital to these countries could therefore be decisive in encouraging a shift to more climate-friendly infrastructure, which is crucial to winning the battle against climate change. The major MDBs that could provide official long-term capital are the World Bank, the International Finance Corporation (IFC), the Asian Development Bank (ADB), the European Investment Bank, the New Development Bank, the Asian Infrastructure Investment Bank, and the other regional development banks.

As shown in Table 12.1, the increase in non-concessional lending from MDBs on a BAU basis is only likely to reach U.S. $27 billion by 2025. This volume could be tripled compared to the level in 2019, producing an additional flow of U.S. $126 billion in lending for a gross financing target of U.S. $189 billion by 2025. However, an expansion on this scale is only possible if the G-7 countries, which control the MDBs, give a political signal. Unfortunately, while the G-7 recognize that MDBs must play an important role in climate financing, they have yet to give a signal to allow for a massive expansion in MDB lending on the scale required.

One reason for the G-7's unwillingness to expand MDB lending is the erosion of support for multilateral action because of geopolitical developments mentioned above. Another reason is the perception that an expansion in MDB lending is unneeded because there is ample private finance available to support a climate management strategy, provided there are well-prepared "shovel-ready" projects in developing countries which private financiers could take up.

It is certainly true that there are large pools of capital available in global capital markets which could be tapped more effectively. However, availability of projects is not the only problem. As discussed in the next sub-section, there are several other factors which constrain the scale of private sector financing. It is not adequately realized that these constraints can be most effectively eased if MDB financing is expanded and specifically tasked with leveraging private finance into climate-related sectors. The role of MDBs in leveraging private flows is examined in detail in Section 4.

International private finance

The potential for mobilizing private capital to finance climate change-related investments has received a great deal of attention, especially after the formation of Glasgow Financial Alliance for Net Zero (GFANZ). This is a group of over 450 firms, with more than U.S. $130 trillion in assets under management, which participated-actively in COP26!

However, while the potential is large, the actual flow of finance at present is modest. The total flow of all private finance to EMDEs in 2019 was only U.S. $377 billion, and most of this has gone to a handful of countries (Bhattacharya et al., 2022). Of this, OECD (2022) estimates that climate-related finance was only about U.S. $13 billion. Bhattacharya et al. (2022) project that the incremental flow of private finance in 2025 on a BAU basis will be only U.S. $69 billion, but this could be increased further by U.S. $326 billion through special efforts. This represents a massive expansion and, to understand the scale of the challenge it poses, we need to delve deeply into why the actual flow of private capital into climate finance is so limited.

The most common explanation is that there are not enough well-prepared projects in EMDEs which could be picked up for financing. This is undoubtedly true, but there are many other reasons which need to be addressed. Financing for developing countries suffers from the

perception that these countries are vulnerable to macroeconomic uncertainties which could lead to debt defaults. In addition to these macroeconomic risks, there are project specific risks. Land acquisition, for example, can become a politically charged issue. Where the borrowing sector is highly regulated, as is the case with electricity, there are also risks due to regulatory uncertainties which could affect the price at which power can be sold. In addition, there are project-specific political risks because of unpredictable actions by governments. India, for example, has seen cancellation of power purchase contracts by a new government at the state level because the price negotiated by the previous government appeared, ex-post, to be too high. Similar problems have arisen in other developing countries. All these problems are magnified by poor legal redressal mechanisms for non-performance of contract, especially if the government becomes a party to the dispute as can happen when sovereign guarantees are invoked.

These risks are bound to be reflected in higher interest costs. In this context it is worth noting that the development of a "green bonds" market is often mentioned as having a potential for lowering capital costs for climate change projects. The growing demand in financial markets for "green instruments" reflects the fact that there are socially responsible investors with a preference for financial assets where the resources mobilized through them will be used for climate-friendly investments. But the extent of benefit for climate financing in developing countries should not be overstated. One issue that arises is that entry into the market will be subject to a process of certification which will be complex and costly.[6] More importantly, it does not overcome the problems posed by project-specific or country-specific risk. Qualified issuers will in effect be able to enter the market for green bonds and many are now doing so. However, they will compete with other issuers of such bonds in developed countries and the interest on green bonds issued by a developing country issuer will have to reflect all the project- and country-specific risks involved. The green bond certification may help reduce the interest rates to some extent, reflecting the investor preference for such bonds, but it will have to cover other risks which make these projects riskier than those in developed countries. Reducing high costs on these accounts requires separate action to risk proof the bonds.

One can take the view that these are systemic weaknesses that have to be addressed by the developing countries themselves if they want to tap into the large pool of global private capital available. However, this is an area where MDBs can play a positive role by partnering with both the government and the private sector to reduce the objective risks involved. The need for MDBs to play this role and thus leverage private flows which would not otherwise materialize, is not well appreciated by most advocates of private finance. We explore this in detail in the next section.

[6] There is growing concern about "greenwashing" as a result of which investors are now demanding not just certification of intent at the time of issuance, but also certification of actual deployment according to declared intent. This would involve annual audit during the construction period, the expense for which would have to be borne by the issuer.

MDB lending as a mechanism for leveraging private flows

The simplest way in which MDBs could leverage a larger flow of private finance is by co-investing with the private sector in the same project. The involvement of an MDB as a co-investor in equity, or even just a co-lender to a project, can leverage additional flows if it gives comfort to private investors, especially passive investors like sovereign wealth funds and pension funds, about the quality of the project preparation. The involvement of MDBs can create a perception among private investors that the government is more likely to take a constructive approach in dealing with problems that may arise during development and operation stages, something which cannot be readily assumed for a pure private sector project.

Apart from simple co-investment, MDBs can also leverage private finance in climate-related projects through other credit enhancement mechanisms to promote well-structured projects. For example, first loss guarantees could reduce risks for the private sector and thus encourage a larger flow of private finance into climate-related projects. The World Bank's Multilateral Investment Guarantee Agency (MIGA) already offers guarantees against political risk, but the proposed guarantees would have to cover other risks as well. Since such guarantees expose the MDBs to a potential loss, they have to be priced appropriately, but the key assumption is that the risk perception of the MDB extending the guarantee will be considerably lower than that perceived by private investors. This is because MDBs deal continuously with governments and have a better sense of the longer-term prospects of the country. If they take on these risks and price them below the market rates, they could trigger larger capital flows at a lower overall cost.

MDBs can also engage in various forms of "blending," which would encourage a greater flow of private finance.[7] For example, some potential investors may be unwilling to take on a large exposure in a particular project, while being perfectly willing to take a position on a pool of climate projects. MDBs, especially the IFC and the private sector arm of the Asian Development Bank, can help by advising countries how best to create a pool of projects.

Another innovative approach which MDBs could adopt is to help in creating structured finance arrangements, e.g., an arrangement wherein there are senior tranches of debt with a lower risk and a correspondingly lower return, which sovereign wealth funds and private pension funds may prefer, and junior tranches with a higher risk and a correspondingly higher return, which national development banks and MDBs may pick up.

[7] See for further reference Lankes (2021).

MDB lending can also help to reduce the objective degree of risk. For example, a major problem in the case of power projects is the danger of non-payment for electricity supplied because the distribution company (discom) is financially unviable. This is a huge problem in India, (see Ahluwalia and Patel, 2022b) but it is not unique to India.[8] MDBs can help to address this problem by engaging in sectoral lending aimed at pushing reforms in the energy sector which will improve the financial viability of the discoms over time. If these reforms succeed in making the discoms more financially viable over time, the need for MDBs to leverage private capital will decline gradually. However, this process could take considerable time until it is firmly in place, and therefore there is a strong case for encouraging an active involvement of MDBs now.

All these possibilities strongly call for expanding MDB lending in the years ahead. However, if MDB lending is to expand to the level recommended in Table 12.1, it will be necessary to expand their capital base. This will involve shareholders bearing some fiscal cost, but this will be small because it is limited to the paid-up capital which would be a relatively modest proportion of the total increase in authorized capital, which is what determines the expansion in lending. Even this fiscal cost would be spread out over time.

The real constraint on expanding MDB lending is not the fiscal cost of expanding the capital base, but the lack of political support among the major developed countries which control these institutions. This reflects the erosion of trust in multilateral institutions for the reasons mentioned earlier. The discrepancy between what is needed and what is on offer was effectively captured by U.S. Secretary of the Treasury Janet Yellen, when she said, addressing the Atlantic Council in April 2022, "Experts put the funding need in the trillions and we have so far been working on billions."[9] She also mentioned the need to reform the Bretton Woods Institutions to meet the new needs. However, six months later, the G-20 Finance Ministers in Washington D.C., in October 2022, did not hold out any hope of an early agreement on the scale of expansion of MDB lending for climate finance. Hopefully, as the world gets back to a more normal situation, climate change issues that are vital for the planet's survival will get the attention they deserve as far as MDB lending is concerned. Although efforts to get the capital increase needed can be renewed at that time, the urgency of restructuring the energy infrastructure in middle-income countries suggests that other possibilities, short of a capital increase, which would allow a major expansion of MDB lending should be expediently explored. There are three options that need to be considered.

[8] Burgess et al. (2020) find that the poor performance of the electricity distribution sector in many countries is in part due to institutional (and social) factors that translate into huge financial losses which compound over years and limit the discoms' ability to invest in upgradation and maintenance of the distribution network, thereby creating a negative feedback cycle.

[9] Remarks by Secretary of the Treasury Janet L. Yellen on Way Forward for the Global Economy, U.S. Dept. of the Treasury, April 13, 2022.

One is to move from the present excessively conservative gearing ratios under which the MDBs operate and adopt higher ratios that would allow the MDBs to expand lending substantially. This would not require legislative approval from shareholders which may be politically difficult to obtain but it would require their support in the Boards of the MDBs. It may be argued that higher gearing ratios might compromise the AAA rating these institutions currently enjoy. It is not certain if that would be the case, but even if it was, the impact on borrowing costs would be marginal at best. It would certainly allow the MDBs to expand lending over the next several years in anticipation of a future expansion in the capital base.[10]

MDBs can also scale up climate finance on their own balance sheet by shifting all or nearly all future lending commitments to climate-related projects, including adaptation. Given the importance of the energy transition, a good case can be made for large scale restructuring along these lines. Masood Ahmed (2021)[11] has proposed that the World Bank could be repurposed to focus entirely on climate and other global risks (such as pandemics) in developing countries. This approach would ensure a larger footprint of the Bank in climate finance with the scope for leveraging private flows. If successful over the next several years, it would build a strong case for capital expansion later.

The ADB has committed that three quarters of its operations will be in programs that support climate change mitigation and adaptation, and has also announced an ambitious expansion in climate finance through 2030. The World Bank and other MDBs should follow suit. These ambitious targets can be "gamed" by the management by adopting loose criteria for defining climate-related projects, but they could still make a substantial difference.

Apart from action to increase the total volume of lending, the MDBs may need to take other measures to relax guidelines which prevent significant expansion in lending to some countries. For example, the World Bank has a single borrower limit which will force it to reduce its lending to India from 2023 onward. These limits are arbitrary and constrain bank lending to countries

[10] The report of the G-20 on the Capital Adequacy Frameworks of the MDBs, published by the Indonesian G-20 Presidency in 2022, recommends that the MDBs could consider incorporating a "prudent" share of the callable capital—that meets the criteria of the major credit rating agencies—as a special shareholder guarantee to raise the risk-taking capacity of the MDBs and create additional capital headroom. The report estimates that the major MDBs had about 91 percent of the total subscribed capital (U.S. $1.3 trillion) in the form of callable capital in 2020, and a small share of it can be used to substantially increase the lending capacity of the banks (G-20 2022). This, however, would require the approval of the banks' shareholders.

[11] The World Bank must be repurposed to focus on climate – or net zero is a pipe dream. Masoon Ahmed in the Independent, Nov 19, 2021. Accessible at: https://www.independent.co.uk/climate-change/opinion/world-bank-climate-investment-net-zero-b1958514.html

that have borrowed in the past even though they have an unblemished record. At the very least, MDB lending for climate action should be exempt from such arbitrary limits.

An alternative to expanding the capital base of the MDBs is for advanced countries to work with MDBs through country partnerships for financing climate-related investment. Such partnerships rely on the MDBs to structure the agreed program and bilateral financing is then used to supplement the resources provided by the MDBs. Here the MDBs in effect play the role of facilitating the expansion of non-concessional bilateral financing discussed above. This is being attempted for South Africa under the Just Energy Transition Partnership between the governments of South Africa and the United Kingdom, the United States, France, Germany, and the European Union, which also involves the World Bank and the African Development Bank. The partnership is intended to help South Africa phase out its coal power plants and accelerate the transition toward RE.

The G-7 has already signaled that similar platforms of cooperation may be considered for India, Indonesia, and Vietnam. Depending on the volume of bilateral resources committed, this could scale up climate finance significantly. While any effort to increase financing for climate change should be welcomed, we have to keep in mind that it can be criticized as a dilution of multilateralism. Bilateral donors getting involved directly in financing partnerships would obviously affect the choice of countries to be assisted much more than if the same resources were placed at the disposal of an MDB. It could also lead to a departure from open competitive bidding in procurement, if individual donor country partners restrict their aid to finance supplies from their country, or in certain circumstances, allow limited competitive bidding which prohibits supplies from some suppliers. These are valid considerations, but the imperative of expanding climate finance would justify this as a second-best solution, pending a larger expansion of direct MDB lending in future.

It is a puzzle that, although a larger role for MDBs in climate financing could be a game changer for all the reasons enumerated above, developing countries have not pushed vigorously for such expansion. One reason could be that climate change negotiators of developing countries have traditionally preferred climate finance being routed through the Green Climate Fund (GCF), which was set up under the UNFCCC to be the vehicle for climate financing. This may reflect the fact that GCF funding does not involve the kind of intrusive conditionality normally associated with MDB lending. However, the scale of financing available via the GCF is very limited—only around U.S. $10 billion over a five-year period—and there is little possibility of that being expanded. In fact, one of the arguments we have made for expanding MDB lending is that the policy conditionality of MDBs could be used to induce sector reforms necessary to make climate-related investments more attractive to private investors.

Developing countries need to review their position and come out strongly in favor of expanded MDB lending to help meet the commitments undertaken in COP26.

Using SDRs for climate finance

Surplus special drawing rights (SDR) are another potential source of international public funding for climate change. About U.S. $650 billion (SDR 456 billion) was allocated to all IMF members in August, 2021, of which 58 percent was allocated to developed countries that are unlikely to need it for balance of payments purposes. Following a direction by the G-7, the IMF's Executive Board has established a Sustainability and Resilience Trust (SRT) based on voluntary contributions of SDRs from countries that do not need them. This trust will be used to fund climate-related projects in developing countries through loans to be repaid over a 20-year period. The interest rate will be slightly higher than the low interest rate applicable to SDRs and there will be a moratorium for the first ten and a half years. Close to U.S. $40 billion have been pledged to the Fund thus far.[12]

While the terms of borrowing are attractive, the utilization of these funds is proposed to be restricted only to countries that have an IMF program. These needs rethinking. IMF programs are generally designed to deal with relatively short-term balance of payments (BOP) problems, whereas climate finance is needed for long-term investments that may be needed even for countries that are currently not facing a BOP problem. While countries that have to go for IMF programs would be well advised to avail of these funds, countries that do not have a crisis are unlikely to do so, partly because borrowing from the IMF could involve a reputational risk as it can be seen as an acknowledgment of being unable to manage the balance of payments.

The problem of resistance to borrowing from the IMF can be overcome if similar trusts are set up in the World Bank, the Asian Development Bank, and the other regional development banks, all of whom are authorized holders of SDRs. Since such trusts depend upon donors willing to pool their SDR allocations, donor countries may welcome the flexibility they gain by having such trusts set up in different regional development banks. The expertise required for infrastructure lending and the capacity to design the sector policy reforms that are needed in these sectors is much larger in the MDBs than in the IMF.

Mobilizing political support for MDB expansion

As pointed out earlier, the real constraint to expanding MDB lending on the scale needed is the lack of political support from the developed countries for this outcome. And the fact that

[12] Press Release No. 22/261 of the IMF dated July 16, 2022. Accessible at https://www.imf.org/en/News/Articles/2022/07/16/pr22261-md-g20-statement

developing countries as a group have not pushed for a larger role of the MDBs has given the developed countries an excuse for not facing this issue squarely. The logical forum to influence decisions pertaining to global finance and the MDBs is the G-20, which includes all the major developed and developing countries. The developing countries in the G-20 should use the forum to focus attention on this issue.

The G-20 was first convened at the summit-level in 2008, in the wake of the Lehman Brothers crisis, and later formalized in 2009 as the principal forum for taking decisions on global economic policies. It did well during the Global Financial Crisis of 2008 but has been much less successful since then.[13] The current international environment, with the Ukraine–Russia crisis showing no signs of an early resolution and continuing geopolitical tensions centered around China, is not conducive to increased multilateral cooperation on international climate finance. Nevertheless, the fact that the current G-20 Presidency is held by Indonesia, to be followed by India in 2023, Brazil in 2024, and possibly South Africa in 2025, provides a unique opportunity: the chair of the G-20 will be held by developing countries for four years in succession. It is to be hoped that these countries can work together to build a broader consensus on financing climate change.

Political tensions with Russia and China have made the G-7 more important than it was meant to be on issues of international economic cooperation. Since the chairs of the G-20, and a few other countries, are usually invited to G-7 meetings, there is an opportunity to persuade

[13] The G-20 did little to achieve macroeconomic coordination among the major countries to facilitate a calibrated acceleration of the global economy and it also failed to resolve the problems which bedevilled trade negotiations and ultimately led to the abandonment of the Doha Round. More recently it failed to achieve equitable access to COVID-19 vaccines for developing countries.

Conclusions

It is clear that the task of financing the energy transition in developing countries to meet the expanded commitments announced by developing countries at COP26 poses major challenges. The transition requires increases in investment in the EMDEs amounting to about 3 to 4 percent of GDP above the levels that would occur under BAU assumptions. It is unrealistic to expect that international financial assistance from advanced countries can be expanded to cover this full amount. In fact, the current international political environment is not conducive to the major players acting cooperatively, even on a much smaller scale, to deal with what are indisputably existential challenges for the global community. Nevertheless, developing countries must plan a credible negotiation strategy on the assumption that the environment will improve sooner rather than later.

We recommend that developing countries should adopt the following approach in future COP negotiations:

i. The starting point must be a realistic assessment of the scale of additional investment needed and clarity on how much of it can be financed through some combination of additional domestic effort and international flows. The gap between the additional investment needed and the resources available on a BAU basis is so large that developing countries have to accept that they must raise half the additional investment needed from domestic sources. The proportion might be lower for low-income countries and higher for others.
ii. Even if the need for international finance is reduced by half, the required international flows will still need to expand severalfold from current levels. It will not be easy to get support for such expansion from advanced countries in the current international situation, but one can hope that the international environment on this issue will ease over time
iii. Unlike in the past, there should be a clear separation of the amount of international finance that will be provided through official sources (bilateral and multilateral) and the amount through private flows. Advanced countries cannot be held responsible for meeting the targets for private flows as these will be determined by market perceptions of private participants and the quality of policy in developing countries wishing to attract such flows. However, they must take responsibility for meeting targets for public flows.
iv. The funding requirements of low-income countries are relatively modest in absolute terms, but they have to be met dominantly by public flows, and that too on concessional terms. The mix between concessional and non-concessional flows will have to take into account the needs of low-income countries.

v. The requirements for international finance of middle-income countries could be met through a combination of pubic flows (bilateral and MDB) and private funding, in which the latter will have to play a larger role. The scale of additional MDB lending could be lower than the projected scale of additional private flows, but the expansion will still be large. Advanced countries can make the biggest contribution to climate change management by facilitating the expansion in MDB lending. The expanded MDB lending should be designed to leverage private funding into climate finance as much as possible.

vi. There is also a need to set separate targets for mitigation and adaptation finance. Adaptation-related measures will largely depend on public investments, and the efforts of developing country governments in adaptation need to be supported by public international finance. It follows that there is an urgent need to establish globally consistent climate finance disclosure standards that enable collection of high-quality and reliable data on international flows.

vii. The scale of MDB financing needed over the medium term is such that an expansion in the capital base is essential. However, since an agreement on this may take time, as an immediate objective, it should be possible to (a) expand MDB lending through relaxation in the gearing ratios; (b) direct the MDBs to shift the composition of their lending toward climate-related finance, much more than they are already doing; and (c) relaxing the arbitrary single country limits on lending that exist for example in the World Bank. Building momentum in this area is critical for both developing countries and the world.

viii. Developing countries should take the lead in pushing for an expanded role for MDB lending along these lines in forthcoming COPs and also in the G-20.

ix. The G-20 has in the past been an effective forum for taking decisions on MDBs and its presidency is being held four times in succession by an emerging market country – Indonesia in 2022, India in 2023, Brazil in 2024, and possibly South Africa in 2025. These countries should aim at reviving the spirit of multilateralism, which has been declining in recent years. The G-7 remains critical in shaping a global consensus on international finance and since these developing countries are also invited to the G-7 meetings, they should use the opportunity to push this agenda.

Getting agreement on the agenda sketched out above will not be easy in the current international environment, but there is no question that it is a worthwhile task to attempt. After all, the very future of the planet is truly at stake.

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