



# Adaptation and Mitigation Financing Solutions

Jayant Sinha & Vedant Monger



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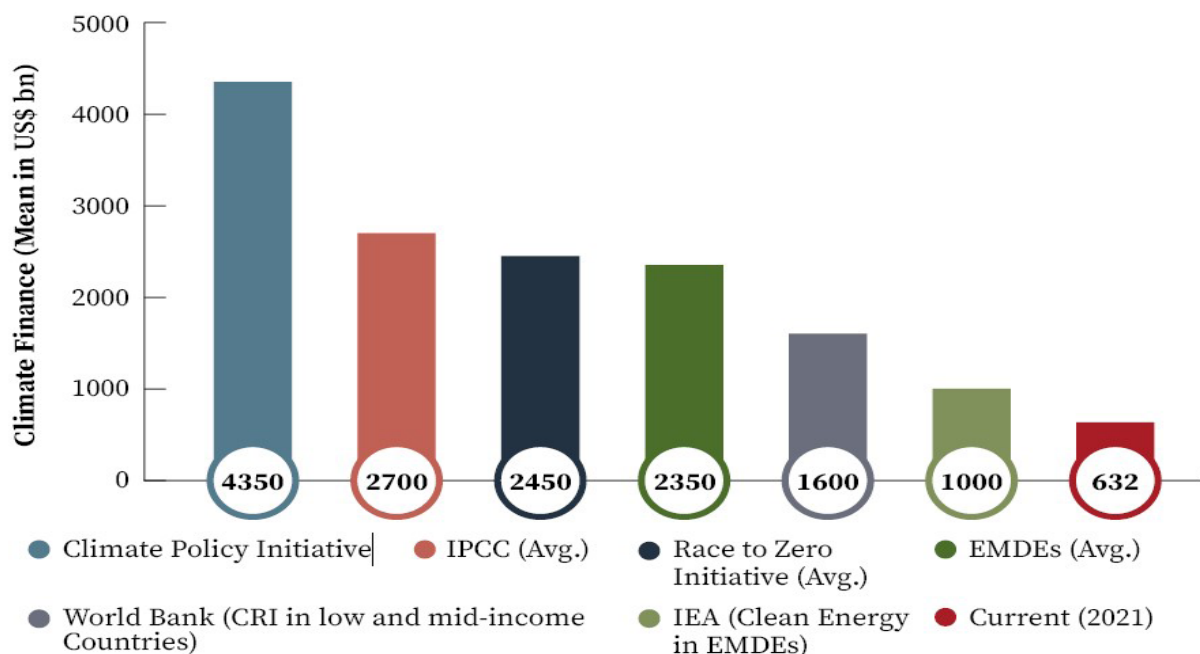
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“India expects developed countries to provide climate finance of \$1 trillion at the earliest...I consider it as my duty to raise the voice of developing countries.” The Indian Prime Minister’s statement at COP26 reflects the trillions of dollars of climate finance that the Global South<sup>i</sup> immediately needs to achieve the Paris Agreement targets. Chart 1 lays out different estimates of climate finance required in the Global South, as sourced from various studies. The US-based independent non-profit research group Climate Policy Initiative (CPI) reports, “[globally] climate finance must increase by at least 590% – to USD 4.35 trillion annually by 2030 – to meet our climate objectives. (CPI 2021)” The Intergovernmental Panel on Climate Change (IPCC) pegs the global climate investment requirement at \$1.6 trillion–\$3.8 trillion annually. Even if we were to estimate climate finance requirements proportional to GDP, emerging market and developing economies (~58% of global GDP according to IMF) would need \$2.2-2.5 trillion annually.

**Chart 1: Climate Finance Requirement in 2030**

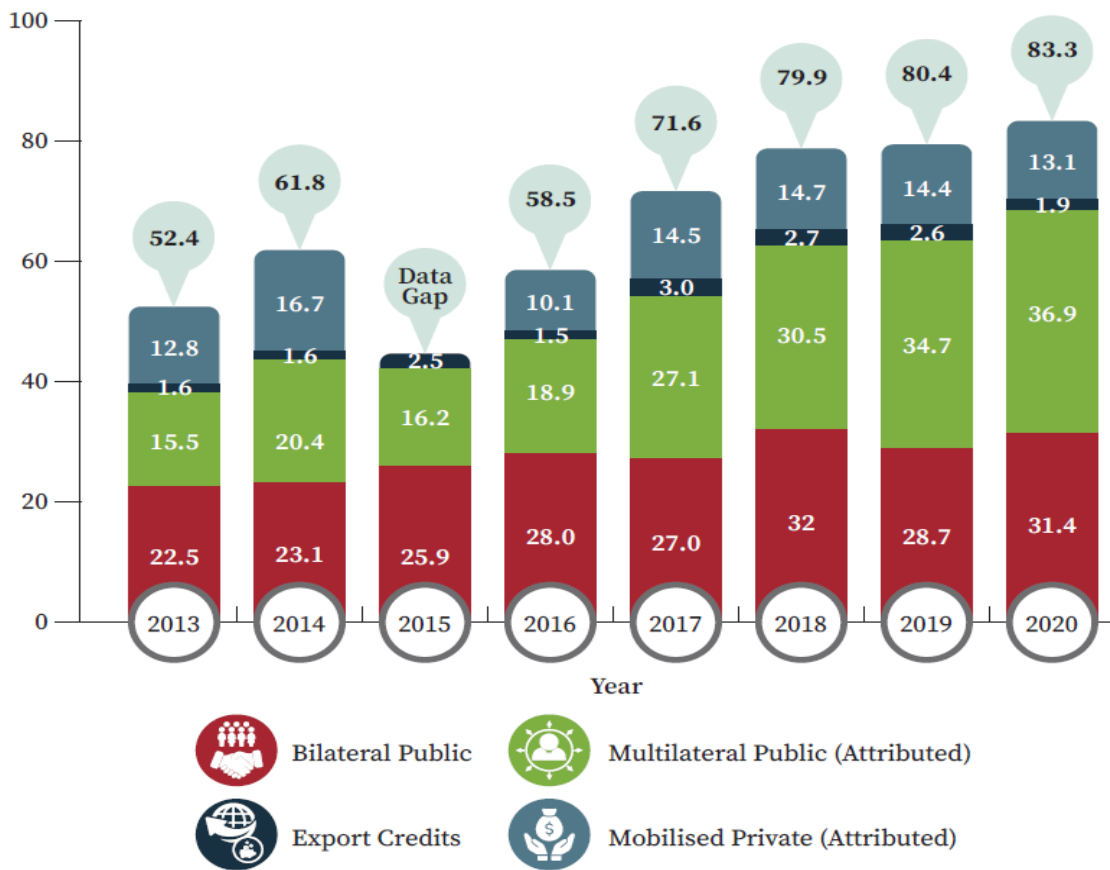


Source: Compiled by the authors based on data from Climate Policy Initiative,<sup>ii</sup> IPCC,<sup>iii</sup> Race to Zero Initiative<sup>iv</sup>, World Bank,<sup>v</sup> and IEA.<sup>vi</sup>

The CPI and IPCC estimates are only two among the various studies that hint at figures of trillions of dollars for climate action. In clean energy itself, the International Energy Agency (IEA) estimates annual capital spending ‘to expand by more than seven times, to above USD 1 trillion’ in emerging and developing economies by late 2020s to be in line with a 2050 net zero target (IEA 2021). Similarly, the Race to Zero Initiative under the aegis of United Nations Framework Convention on Climate Change (UNFCCC) estimates a climate investment requirement of around \$2.2 – 2.7 trillion annually to meet net zero in these economies.<sup>vii</sup> The World Bank highlights the need for investments of \$1.6 trillion annually until 2030, to meet climate-resilient infrastructure needs in low and middle-income countries – around 4.5% of their GDP (Rozenberg and Fay 2019).

Studies in both private and public institutions echo the same message – climate investments need to be scaled to trillions of dollars from billions that were pledged and are currently flowing. Janet Yellen, US Treasury Secretary, has also acknowledged that “while wealthy countries have promised billions of dollars to tackle climate change, the real cost is in the trillions<sup>viii</sup>”. According to a news article in Nature, “Compared with the investment required to avoid dangerous levels of climate change, the \$100-billion pledge is minuscule.”<sup>ix</sup> Even with the US\$100 billion pledge, data from the Organisation for Economic Co-operation and Development (OECD) shows that just US\$83.3 billion of climate finance from developed nations to developing countries was actually mobilised and provided during 2020.

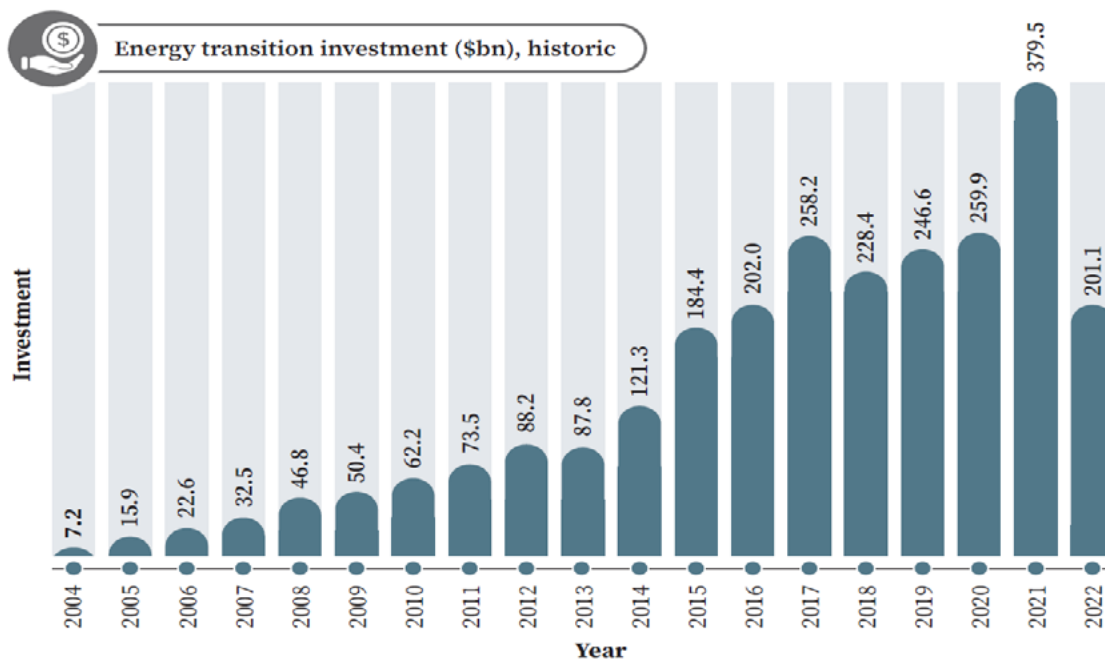
**Chart 2: Climate Finance Provided and Mobilised in US\$ Billion (2013-20)**



Source: OECD, 'Aggregate trends of Climate Finance Provided and Mobilised by Developed Countries,' 2022

Currently, climate-related investments in emerging economies are critically insufficient, in relation to the trillion-dollar targets (see Chart 3). In 2021, emerging economies invested only around \$380 billion in energy transition sectors such as renewable energy, electrified transport, hydrogen, and sustainable materials among others. Even in this total mix, around 70-75% of the investments in the EMDEs was made in China.

**Chart 3: Energy Transition Investment in Emerging Economies**



Source: Bloomberg NEF Portal

According to CPI, Africa accounted for just 5.5% of global climate investments. Three-quarters of global climate investments were concentrated in East Asia and the Pacific, Western Europe, and North America, while the remaining regions received less than a quarter. Moreover, in 2021, about 90% of global climate finance was directed toward mitigation.

The Global South needs support for scaling climate finance across both mitigation and adaptation to ramp up climate action to Paris Agreement levels. The bulk of this expected investment will have to be market-driven since key economic sectors such as power, transportation, industries, real estate, and mining must switch over to climate-neutral technologies. However, the Global South neither has sufficient investable capital nor sufficient financing capabilities to achieve this rapid transformation. In fact, market forces are grossly inadequate for addressing the climate finance challenge. The global financial system will have to be reengineered to mobilise sufficient movement of capital for adaptation and mitigation needs, from the Global North to the Global South.

### GCA Must Deliver Climate Adaptation Funds

Climate finance for adaptation will largely have to be grant money (G2G transfers), through specifically targeted funds. As of 2020, 35% (around US\$30 billion) of climate finance provided by the developed world went towards adaptation activities whereas the annual requirement in 2030 is estimated to be around USD 160-340 billion, an increase on the earlier estimate, US\$140-300 billion.<sup>x</sup>

The London-based International Institute for Environment and Development (IIED) has reported that the UN's 46 'least-developed countries' (LDCs) received only US\$5.9 billion in adaptation projects between 2014-18 (Soanes, et al. 2021). The underperformance of adaptation funding calls for specifically-targeted funds built on models that have worked so far.

Global South countries under the Global Climate Alliance could benefit from Just Energy Transition Partnerships (JETPs) modelled along the lines of the one in South Africa. More recently, the G7 under the German presidency affirmed

their intent to work on the JETPs with partner countries such as Indonesia, India, Vietnam, and Senegal. These programmes could be targeted at Global South countries willing to join as Group B members in the GCA, for taking on more demanding transformation targets.

The JETPs would fund actions such as prematurely decommissioning coal-fired power plants. Plans for decommissioning coal plants, for instance, would also need to build in help for upskilling the children of plant employees and relocating existing employees to other sectors. As needs for decarbonisation vary between countries, the JETPs must be country-led and country-owned. Substantial grant money from GCA resources, as well as concessional loans based on commitments from countries, could be provided annually. The GCA Secretariat can assist development of the JETPs and monitor their implementation.

A Climate Innovation Foundation to strengthen research capabilities for climate change solutions – both for adaptation and mitigation – has also been proposed. A key takeaway from South Africa's JETP was employing modelling studies to chart out the process. Similar studies must foster an intellectual ecosystem. Universities and research institutions within the GCA can apply for climate research funds to set up research studies and labs. The GCA would award multi-year research grants to understand climate adaptation challenges and solutions. Finally, to sustain such research, the GCA would establish a prestigious Research Fellows programme to fund two-year research programmes at selected leading institutions.

A Climate Resilience Fund can help countries face and respond to climate disasters. The Africa Adaptation Acceleration Programme (AAAP) offers a template for this. A large proportion of these funds would be devoted to developing climate resilient infrastructure in those countries that lose millions of dollars to power outages caused by extreme rains, drought-induced power shortages and transport disruptions due to flooding. The New Delhi-headquartered Coalition for Disaster-Resilient Infrastructure (CDRI) has estimated that around 66% of public sector losses in recent climate-related disasters are related to infrastructure damage<sup>xi</sup>. Building resilient infrastructure also generates high social returns.<sup>xii</sup> The rapid deployment of this fund – via existing agencies such as United Nations High Commissioner for Refugees (UNHCR), Doctors without Borders and existing Disaster Management Authorities in each country – would significantly improve climate response. Finally, providing these funds through the GCA Secretariat would help streamline the process.

Capacity building must be an important undercurrent in all funding activities. African countries have lamented not being able to access sufficient climate finance owing to its technicalities and complexities, and insufficient funding toward capacity-building and training in these areas. In a survey, LDCs also requested an average three per cent of total finance for capacity building and technology transfer.<sup>xiii</sup>

An adaptation budget of ~\$100-150 billion annually would be compatible with the federal budgets of the Global North countries. The EU and its member states are currently providing approximately double the amount of what the US has pledged, despite their combined economy aggregating to just three-fourths of the US'. If the larger chunk of mitigation investment comes from private investments, it would cost the US a miniscule fraction of its budget to contribute just \$20 billion annually, from a federal budget of about \$5 trillion.

## The Global Financial System requires Re-Engineering to Address Risks

Addressing the trillion-dollar climate mitigation challenge will require enormous amounts of private climate finance for the Global South. Grants-based funds for adaptation from public sources make for relatively easier flow if countries commit, but they are critically insufficient to meet climate investment needs. The global financial system must be reengineered to get commercial, return-seeking capital to flow out from the Global North.

The Global North already has vast and diverse financial systems in place, with trillions of dollars in assets under management (AUM). These are invested on the basis of deep financial expertise spread across capital markets, institutional investors, sovereign wealth funds and insurance companies. As of 2020, pension funds in the OECD countries alone had assets worth US\$34.2 trillion.<sup>xiv</sup> The Norwegian sovereign wealth fund has assets worth \$1.3 trillion under management, for example. Moreover, development financial institutions (DFIs) such as British International Investment (with ~\$10 billion in AUM) are comfortable receiving lesser rates of return in exchange for greater social impact.

Data from Bloomberg NEF shows that the OECD countries<sup>xv</sup> have issued sustainable debt amounting to US\$4.4 trillion since 2012, which accounted for about 84.3% of sustainable debt<sup>xvi</sup> issued worldwide. Similarly, Bloomberg reports that Europe accounted for half of the global environmental, social, and governance (ESG) assets under management in 2018.<sup>xvii</sup>

During the COP26 presidency of the UK and Italy, in 2021, UN Special Envoy for Climate Action and Finance Mark Carney “gathered more than 500 large financial institutions with balance sheets worth US\$150 trillion in a voluntary pact to try to limit global heating to 1.5°C above pre-industrial levels”<sup>xviii</sup> under the banner of the Glasgow Financial Alliance for Net Zero (GFANZ). These statistics indicate that there is a vast amount of investable capital available in the Global North. If channelled through a financial system that prices climate change externalities, Carney believes that “ambitious climate action is not just possible but will be profitable (Carney 2021)”. Dr Fatih Birol, Executive Director at the IEA has said, “There is no shortage of money worldwide, but it is not finding its way to the countries, sectors and projects where it is most needed.” The financial system in the Global South needs to be strengthened to receive such vast amounts of capital flows through a variety of novel instruments not yet introduced in their financial markets. Africa, for instance, issued just 11 green bonds between 2007 and 2018, amounting to just \$2 billion. Latin America, similarly, in the same period, issued 24 green bonds raising \$7 billion.<sup>xix</sup> Financial markets in EMDEs are still characterised by strong government participation. In India guidelines still direct financial institutions to purchase government bonds, which crowds out private participation. Public sector banks still account for a major part of lending.

Many Global South countries need to reinforce their risk supervision and contract enforcement, ensure transparent price discovery and other financial regulations. Without such measures, the development of private financial markets will be hindered. This can be seen in measures such as the strong correlation between minimum government bond-holding mandates and concerns about derivatives depth (Committee on the Global Financial System 2019). Therefore, a large financing gap arises between the vast commercial capital available in the Global North and the fragmented financial systems in the Global South, with low domestic savings and capital intermediation abilities.



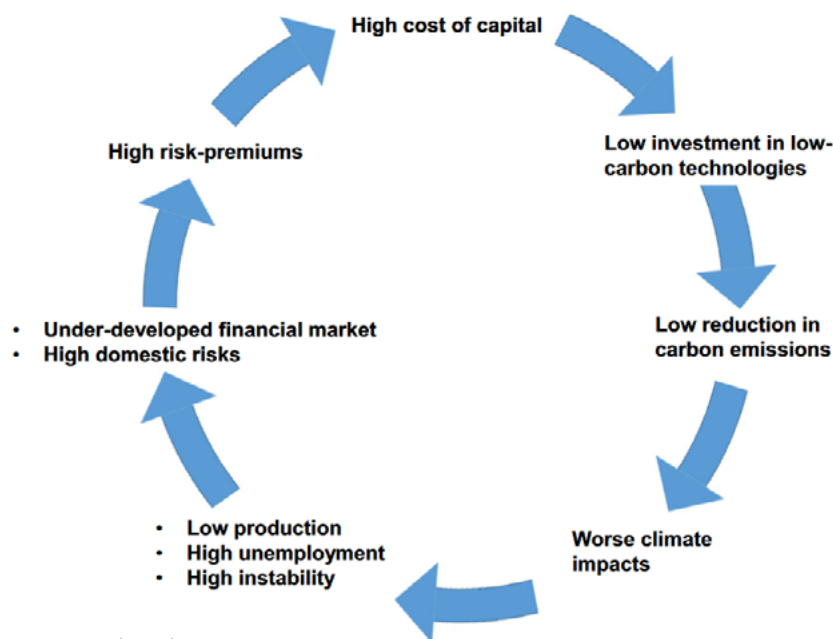
### Box 1: Understanding the Climate Financing Gap created by Systemic Risks

The climate financing gap is created by the numerous risks in transfer of capital. These risks span institutional issues such as poor contract enforcement, currency risks, macroeconomic stability risks, payment, and extreme weather risks. The risk associated with policy uncertainty is another major deterrent for private capital.

Private capital, therefore, seeks higher returns in EMDEs owing largely to such systemic risks.<sup>xx</sup> In other words, capital flowing into EMDEs has a very high-risk premium attached to it. A high price of capital implies that either there is almost no capital available for transitioning to clean technologies or there is limited capital available, which seeks very high returns. A vicious cycle, starting from this high cost of capital, eventually feeds into high-risk premiums as demonstrated in Figure 1 below.

The risk premium (in the context of green investments, 'greenium') in investing in emerging and developing economies is catalogued in (Ameli, et al. 2021). Based on their analysis, Africa had a country risk premium of 8.11%, Central and South America – 4.03%, India – 3.11%, Mexico – 7.28% while the developed countries (except for Australia) had a country risk premium of zero or negative. The solution to induce private capital flows lies in compensating the risk premia being sought by private capital, thus lowering the cost of capital.

Figure 1. The climate investment trap at the macroeconomic level



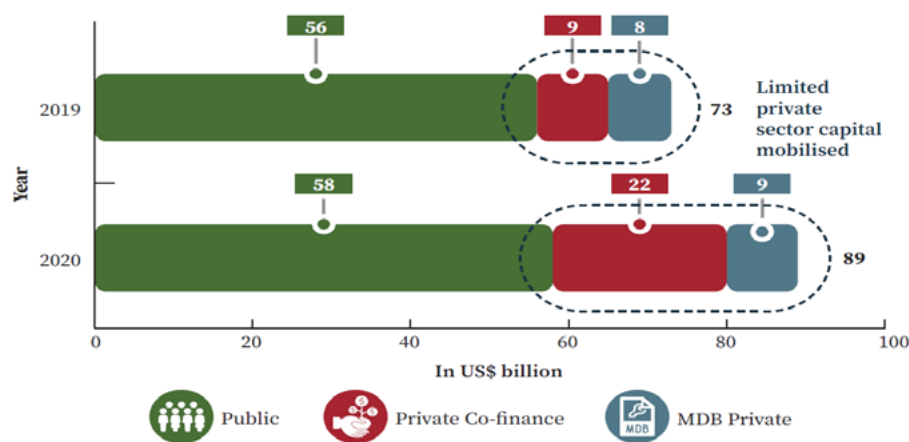
## MDBs Haven't Mobilised Sufficient Commercial Capital

There are multiple financial institutions from the Global North deploying capital to assist in the green transformation of the Global South. These include multilateral development banks (MDBs), existing global financial institutions, DFIs as well as a few private-sector green funds. Despite the large climate financing gap, these institutions have not mobilised a great deal of capital

for climate finance. This is unfortunate, because they were created precisely to bridge this financing gap and provide financial intermediation. Climate finance mobilised by MDBs for low- and middle-income countries was around US\$38 billion in 2020 (Group of Multilateral Development Banks 2021). Of this, 32% went toward adaptation and 65% towards mitigation.

Development finance, which has developed over the past 75 years or so, has largely focused on providing concessional loans to governments and public sector institutions. However, the volume of funding has been insufficient to meet the enormous climate financing needs. Of the total mitigation finance toward low-and middle-income economies in 2020, around 75% was in the form of investment loans. In adaptation finance, which should largely be grants-based, investment loans comprised 61.6% of total MDB finance.

**Chart 4:** Climate Finance mobilised by the MDB ecosystem



Source: Joint Report on MDBs Climate Finance (2015-20); MDBs include AfDB, ADB, AIIB, EIB, ERBD, IDBG, IsDB, NDB, WBG.

Climate co-finance, particularly private sector co-finance, is another area where the role of MDBs in mobilisation has been limited. In 2020, public co-finance in low-and-middle-income economies was around US\$32.2 billion – or about 75% of the MDB co-finance – and around US\$11 billion was private co-finance. The World Bank’s guarantee and insurance programmes have been underutilised (Chibber 2022). As an illustration, the product mix of IFC’s US\$12.4 billion mobilisation in FY2021 was 87% loans and 9% equity. Guarantees and risk-management products represent only around 4% of the mobilisation at US\$475 million and US\$40 million, respectively.

Course correction can begin by shaping these institutions for the 21st century. Resources of the World Bank need to be scaled with its mandate focusing mainly on ‘shared prosperity and planetary sustainability’. The volume of co-finance mobilised by MDBs needs to scale up. And finally, the type of instruments they are channelled through must mostly be market-based if climate investment requirements are to be achieved.

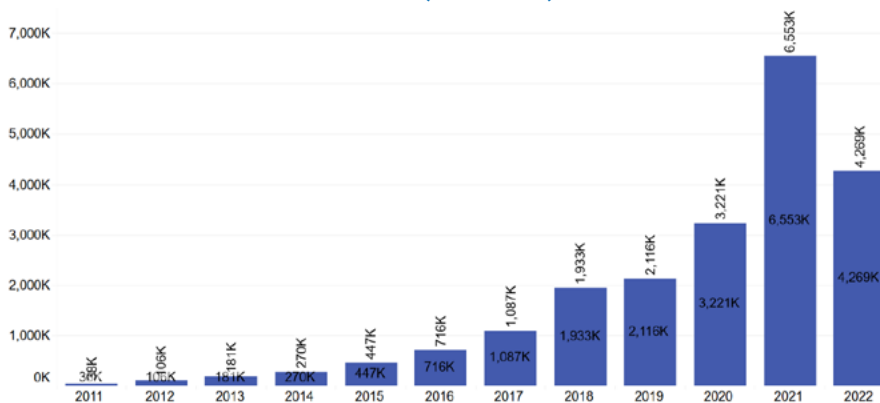
## Box 2: The Thrust on Market-Driven Finance – EV Example

The economy-wide transformation toward net zero will largely be market-driven since it requires decarbonising existing commercial enterprises, thousands of disruptive green start-ups, and a vast range of zero emissions capital assets. McKinsey & Company has estimated that over 70% of green investments will be made by commercial enterprises. Existing enterprises in industries such as power generation, electricity distribution, bus and trucking services, automotive vehicle manufacturing, food processing, building materials, real estate, basic materials, cement, fertilizer, and steel will have to transform their production processes. This will be a complicated transformation lasting multiple decades and requiring detailed disclosures, outstanding governance, and staged investments.

Many existing companies will fail to make the net zero transition and investors will have to reward those companies that are clearly succeeding. These decisions are best made by sophisticated and diverse professional investors operating through the capital markets, mutual funds, alternative asset management firms, and other financing intermediaries.

Moreover, entirely new green industries are likely to emerge that will disrupt existing industries. The transportation sector is already being converted to zero emissions technologies. Electric vehicles' (EVs) sales have exponentially grown over the past one decade (see Figure 4). EVs have totally different engineering and manufacturing processes. Consequently, the EV value chain differs radically from the internal combustion engine (ICE) value chain. Disruptor companies, such as Tesla, have emerged that are changing the way mobility is provided. These types of industries are best financed by well-capitalised venture capital and private equity funds that can identify, invest, and grow disruptor companies.

**Chart 5: EV Sales Worldwide (2011-22)**



Source: Bloomberg NEF Portal

The green transformation will also require massive debt and lease financing for capital assets. Infrastructure and equipment stock that has been built over the last century will have to be replaced within two to three decades. For example, petrol stations have spread gradually with modest annual capital upgrades. In the next 5-10 years, petrol stations will have to build fast-charging stations and retire their fossil fuel infrastructure. Similarly, trucking and taxi fleets will have to quickly migrate over from ICE to EV fleets. These capital assets are typically debt and lease financed. Innovative financing and risk management solutions will have to be developed to accelerate these migrations. The GCA will be a forum for channelling innovative financial instruments that addresses risks associated with private finance in exchange for policy commitments from countries.

## Regulators must establish consistent policies

Establishing private sector investment flow requires that rules and institutions must first be defined. This entails defining policies and regulations on which financial transfers will be based, delineating how they will take place, setting the standards on climate reporting that should be adhered to and identifying the institutions that will conduct the transfer of financial flows.

## Establishing a Consistent Green Taxonomy

Several standards bodies are working on a consistent green taxonomy to funnel investments into genuine climate solutions. Regulators need to develop regulations that are:

- consistent and clear in how they define climate investments – at sectoral, industry and activity levels – and are forward looking toward a low-carbon future, while allowing the transition to ‘green’.
- objective in nature, supported by clearly defined metrics and thresholds;
- proportionate in impact;
- aligned to a low-carbon pathway and adaptable to the impact of climate change;
- green-aligned through the economic lifecycle of each activity; and
- aligned and harmonised with international standards, while ensuring alignment with local priorities.

### Box 3: Contours of Green Principle Setting

- **Clear definition of ‘green’** (at sectoral, industry and activity level) that is forward looking to a low-carbon future while allowing transition to green:
  - Standardised and sector-specific disclosures;
  - Transition-related aspects to be incorporated.
- **Objective in nature**, supported by clearly defined metrics and thresholds that:
  - Enable sharper and appropriate level of reporting into the Business Responsibility and Sustainability Reporting (BRSR) to help in the mapping of climate risks as well as climate positive actions that may be underway.
- **Proportionate in impact:**
  - The taxonomy should have a consistent set of principles and definitions but allows flexibility for differences in transition pathways to be adopted by micro, small and medium enterprises (MSMEs).
- **Align to a low carbon pathway** and adapt to the impact of climate change:
  - Aligning financial sector with nationally determined contributions (NDCs) to encourage the flow of resources to green sectors;
  - This can include environmental preservation, conservation of natural resources, clean and efficient energy use, pollution control, and sustainable biodiversity management.
- **Green-aligned through the economic lifecycle of each activity:**
  - Fundamentally aligning to an outcome-linked approach that measures net contributions over the lifetime of a project. An outcome is considered green if:
    - The output creates climate positive results, with the role and linkages across the value chain being a key determinant;

- It can indicate a demonstrable and measurable change from business as usual.

- **Alignment and harmonisation with international standards** while ensuring alignment with local priorities:
  - Taxonomy must be adaptable to changing national and international initiatives to develop innovative low-carbon approaches and targets;
  - Balancing green priorities with social priorities, and inclusive governance.

## Developing Effective Disclosure Policies

The fundamental question on disclosures is whether they should cover only climate or should also be extended to include ESG. Globally, disclosures began with climate and gradually progressed to ESG. The Basel Committee on Banking Supervision (BCBS) is looking at climate risk disclosures for financial institutions. It has issued a consultative document containing principles for the effective management and supervision of climate-related financial risks, requesting public comments. The BCBS is exploring the use of the third pillar framework to promote a common disclosure baseline for climate-related financial risks.

Firms need to receive verification or provide assurance on information they have disclosed. Such verification processes are typically implemented by appointing third-party auditors. Practices in this area vary by jurisdiction, ranging from self-certification to third-party verification. The need for such a function entails a cost as well as technical expertise and resources. It also underscores the importance of capacity building in this area. In such a scenario, there could be a time-bound switchover to third-party certification. Some countries require different entities to produce a separate sustainability report for disclosing ESG information. Others require the inclusion of ESG-related information in an entity's annual report or on the website. To provide adequate visibility to investors, as well as to ensure that companies take the issue seriously, it is recommended that the disclosure be a part of an integrated annual report and hosted on the entities' websites. There should be a separate chapter on climate and ESG disclosure in the financial statements, preferably, with both qualitative disclosures and greater availability of climate-related data – even quantitative disclosures. When identifying and prioritising ESG issues for disclosure, regulators and reporting, entities may apply different materiality approaches.

There are two overarching perspectives on materiality in ESG issues: the 'outside-in' and the 'inside-out' perspectives. Taking an outside-in perspective means considering the ESG items as material, which influences the value or performance of the entity. Taking an inside-out perspective implies that ESG items are material when they are impacted by the entity. This is also referred to as environmental or social materiality.

The most prevalent definitions of ESG materiality are as follows:

- Financial materiality – reflecting the outside-in perspective; and
- Double materiality – reflecting both the outside-in and inside-out perspectives.

Given the direction of travel for global disclosure standards – the European Commission having introduced double materiality as part of their disclosure guidelines, for example – it may be prudent for India to begin with financial materiality and adopt double materiality in a phased manner.

#### **Box 4: The Task Force on Climate-Related Financial Disclosures (TCFD) Framework**

Over the past few years, a few leading Indian banks have commenced voluntary climate-related financial disclosures, based on the TCFD framework. This has aided in their overall understanding of climate-related risks and opportunities, allowing them to make better decisions about green and sustainable finance.

Given the urgency of the climate crisis, disclosures may be made voluntary FY 2022-23 onwards and following a mandatory review from a certain FY that may be decided during FY2022-23. This would allow regulated entities sufficient time to understand and adapt to the new requirements. A review of the disclosures and preparedness may be undertaken before making them mandatory. Firms may also be encouraged to include a 'climate change' page on their website as a useful tool for external communication.

Global South countries could consider adopting a framework along these lines. The elements of disclosure could be adopted from the four pillars in the TCFD framework i.e., governance, strategy, risk management, and metrics & targets, with 11 specific recommended disclosures under these four pillars. During the initial rollout phase, the qualitative and quantitative disclosures can be made applicable for the regulated entities following a certain timeline. One huge advantage of aligning with the TCFD recommendations and adapting the TCFD framework would be to help improve the consistency and comparability of disclosures across the board, as well as to align with and attract global investors.

The TCFD framework could act as the baseline for climate-related financial disclosures, with additional disclosures being prescribed based on assessment by sectoral regulators. For example, the Basel Committee on Banking Supervision (BCBS) has set up a Task Force on Climate-related Financial Risks (TCFR). It issued a consultative document on climate-related financial risk on 16 November 2021 to guide regulatory and supervisory action on climate risk in future policies for banks. For the Top 1,000 listed companies in India by market capitalisation, SEBI has prescribed the Business Responsibility and Sustainability Reporting (BRSR) framework.

### **GCA could serve as a platform for policy-alignment.**

The GCA will be a platform where effective financial flows are met by effective commitments and cooperation in transformational sector pathways. When policies are aligned and progressively laid out, it anchors the expectations of private sector actors. Monetary policy is a classic case where clear policy helps anchor expectations. Under the GCA, aligning sectoral mandates through working groups will provide this anchor for investors who are looking into returns. In turn, this anchor will create an environment of policy certainty. Once these institutional rules are laid out, innovative financial instruments could be employed to reduce the risk premium associated with private investments.

**The Role of MDBs: Strengthening them to Mobilise Private Capital Flows**  
MDBs must act as catalysts in mobilising Global North capital flows to the Global South. This can be accomplished in two ways. First, by reducing risk for private financial institutions investing in the Global South, and second by increasing investment flows to the Global South, especially for pioneering new markets – like alt-proteins, for example. Both activities will require significant changes to existing MDBs in terms of skill enhancement, management depth and balance sheet expansion.

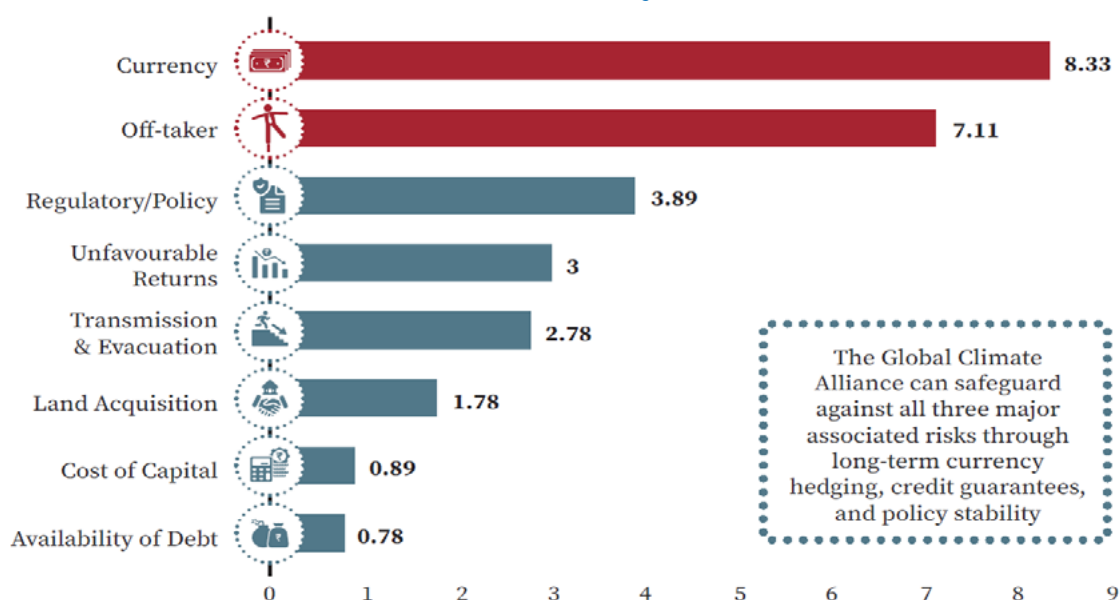
MDBs can be instrumental in reducing risk for private financial institutions in the Global South. The principal risks for these institutions include currency depreciation due to poor macroeconomic management, non-payment or delayed payment of contractual billings, extreme weather events and a range of policy-based risks.

## GCA could Offer Risk Management Solutions via Blended Capital

Commercial investing in the Global South faces risks at various levels. This is especially the case for those transition technologies in the process of market adoption, which pose many systemic factors that can impact returns. Some of the key risks that need to be addressed are:

- Currency;
- High cost of capital that increases the costs of deployment;
- Policy risks;
- Billing, payments, and collection risks (counter-party risks).

**Chart 6: Risk Score of various Renewable Projects in India**



Source: (Shrimali 2021); Score is based on discussions with foreign investors, where investors were asked to assign scores out of 10 regarding risk. The investors included: Bank of America, Blackrock, Generation Investment Management, EIG Partners, Goldman Sachs, and Morgan Stanley among others.

MDBs can play a critical role in mitigating these risks. This will not only lead to a material lowering in the cost of capital for projects but will also – in many cases – help make projects viable for execution. MDBs have typically, and largely, focused on debt and some equity investments. Risk-management products and guarantees account for only a miniscule portion of their mobilisation. This must change materially.

There are at least four products/structures that can be aggressively scaled up by MDBs to help reduce investment risks. They are as follows:

- **Long-term Currency Hedging:** The flow of capital from the Global North to the Global South is impacted by the volatile and depreciating currencies of the latter. It has been generally observed that currencies of Global South economies, especially given inflationary pressures in their local economies, tend toward substantial depreciation in the long run. This creates a challenge for long-term private investors in the Global North who are seeking to protect their required returns

in their local currencies. Given the relatively smaller sizes of Global South country economies, deep and liquid currency hedging markets do not exist for investors to offload their risks.

Providing reasonable long-term assurances that Global South currencies can be swapped into Global North currencies can help mitigate Global North investors' concerns over currency volatility and uncertainty. It must be noted here that what is being discussed is only the rate of the currency depreciation and not of the underlying investments, which may have their own trajectory.

One way that long-term currency hedges can gain credibility is if the central banks of countries have swap arrangements between themselves to assure that hard currency is made available at the time of repatriation. The value of such hard currency can be broadly agreed upfront, over time. The consequent commitment of the two central banks to honour such an arrangement can be routed through an MDB, which can aggregate and create an appropriate market. A credible counterparty, acting as an intermediary, can also help increase confidence, as well as innovation, for commercial investors.

- **Payment Guarantee Institutions:** MDBs could provide an annual sum, scaled up over time, in credit guarantees – either partial or in full – to Global South treasuries. This would protect against any potential losses that may arise. Guarantees could be provided to local financial institutions for extending credit to green companies in the country. If a country has a track record of high losses and defaults, it will automatically lead to higher pricing for guarantees. The Global South treasuries could also guarantee timely – 30 days, for example – collection from state buyers. The G2G arrangements under the GCA would ensure that working capital of guarantors is not exhausted.
- **Climate Insurance:** According to internal calculations by the Bank of England, the number of extreme weather events has trebled, causing an eightfold increase in property destruction (Carney 2021). An annual sum, for a catastrophic risk pool, could be made available to Global South GCA members. The model could match Global South premium contributions with an equivalent amount in the Global North countries. All countries could participate in a global risk pool to ensure adequate capital for reinsurance companies. Insurance to be extended must be backed by continuous studies that assess the impact of climate change in business valuations, with continuous methodology updates for assessing climate risks to businesses.
- **Climate Fund-of-Funds:** Lastly, annual funds – potentially managed by the International Finance Corporation (IFC) or the European Investment Bank (EIB) – could be made available each year to anchor new Global South venture capital and private enterprise climate funds.



## Investment-Focused MDBs Should be Expanded

Only around 20% of MDB financing goes into commercial investments, either through pure return-generating instruments or through blended capital instruments. Moreover, only a few institutions – such as the IFC, British International Investment (BII), Overseas Private Investment Corporation (OPIC) and the Asian Development Bank (ADB) – are investing billions of dollars of debt and equity per year into companies. As a result, MDBs have not built up the expertise in deal origination, risk assessment, investment monitoring, portfolio construction and exit generation required for successful private sector equity and debt investing in a market-driven green transformation.

Global North governments must increase the equity capital allocated to the few MDBs with private sector investment skills – also known as the ‘Investing MDBs’. These investments can be staged over time, allowing the Investing MDBs to build, over the next 5-10 years, the staff, skills, and processes to upscale their annual private sector investments by at least tenfold.

Investing MDBs need to be materially larger than they currently are, both from the perspective of the balance sheet – greater assets/investments – and in their ability to channel more capital in any given year. The hundreds of billions of dollars required in investments by the private sector need to be ably supported by MDBs both through debt and equity products, and through the risk-sharing products discussed earlier. With the ability to help manage risks, MDBs will be in a far better position to channel and crowd-in private capital into green transition.

Illustration: Consider the International Finance Corporation. IFC shareholders include Global North countries with significant shares: USA 20%, Japan 8%, Germany 5%, France, and the UK at 4% each, Canada, and Italy at 3% each. Many other OECD countries have between 1% and 2% of IFC, taking the cumulative shareholding to be above 50% with such countries.

Given the current size of the balance sheet of IFC, even a doubling of the share capital will lead to only around ten billion dollars or so of further equity capital. This new capital infusion can be leveraged further by the MDB to create more investing capacity. The contribution to the increase in capital of the MDB can be channelised via the large Global South countries in proportion to their current shareholding. Such monies may be given as a grant to the MDB so that the shareholding pattern of the MDB is not disturbed, which can have other governance-related consequences. Appropriate teams and skills will need to be developed and housed within the MDB ecosystem. A practical expectation is that the doubling of the organisation (especially one that has been relatively stable over the last few years) may take up to five years.

## Local Green Investment Agencies are Needed

The world requires many large green financing institutions that can significantly accelerate market-driven capital flows from the Global North to the Global South. These new institutions can work alongside existing in-country financing institutions to catalyse their green financing activities. Such institutions could be established in each major Global South country or in clusters. For example, to cover some of the Western African countries. Collectively, these institutions, supported by significantly strengthened MDBs, would constitute a global green financing network.

## Green Investment Agencies Can Play a Vital Role

Local Green Investment Agencies (GIAs) should be able to undertake six important functions that are not being fulfilled adequately today. Green Investment Agencies (GIAs) should be able to undertake six important functions that are not being fulfilled adequately today. They are:

- Most urgently, GIAs have to take an ecosystem perspective of how different sectors should be transformed in each country. This comprehensive yet practical perspective is difficult to achieve within siloed government departments, narrow financial institutions and think-tanks. For example, deploying electric buses nationally requires bus manufacturing, including battery availability, sufficient grid power, dedicated charging depots, adequate financing solutions, integration with travel portals and trained manpower for maintenance and operations. A delay in any of these could easily hinder an ecosystem development by many years. Such sectoral perspectives require industry experts, management expertise and deep financial acumen. Furthermore, these perspectives will have to be locally-developed for different countries and provinces within each country.
- GIAs must be able to work with a wide range of stakeholders to help develop such ecosystems, including government policy makers at national and provincial levels, to ensure supportive policies. For the aforementioned electric buses example, GIAs have to be able to ensure that the bus manufacturing supply chain is adequately established and that critical investments are jumpstarted through innovative start-ups. GIAs must conduct in-depth market research to understand barriers to consumer acceptance and pricing expectations. In addition, existing bus companies will need support during such a transition, with a strong focus on existing and new workforce demands.
- In addition to an ecosystem perspective and stakeholder engagement, GIAs will also have to mobilise a wide network of in-country financial partners. Continuing with the electric bus example, GIAs will have to assist in funding the upscaling of electric bus production among existing manufacturers. GIAs and their financial partners will have to provide leasing and financing support to operators, to allow them to adopt electric buses rapidly. Government agencies, such as the Small Industries Development Board (SIDB) or the Solar Energy Corporation in India (SECI) may be able to provide subsidies to electric bus companies or to electricity distribution companies for special tariffs.
- Leasing companies would require access to low-cost wholesale financing with appropriate currency hedging. Start-up financing for charging companies may be needed to allow them to operate depots. New software solutions could probably also be developed by start-ups to manage bus batteries and develop innovative billing solutions. Thus, in the electric bus ecosystem example, GIAs will probably have to work with asset management companies, commercial banks, leasing companies, venture capital firms, electric distribution companies as well as a wide range of government financing agencies.
- GIAs will have to work with Global North financial players to develop innovative financial instruments that are capable of reducing investment risks and, therefore, financing costs for the green transformation.
- GIAs can also play a key role in sharing best practices, business models and financing approaches. There may be innovative companies and

government programmes in Indonesia, for example, that may also work well in India. However, there is no organisation charged with tracking these innovations and facilitating their transfer from one country to another. Regular research reports, conferences and in-country experiments are needed to help cherry-pick the best innovations.

- GIAs can help strengthen private-sector financing expertise in Global South countries. While countries such as India have a mature alternative asset industry, with multiple large global and domestic funds, most Global South countries do not have such investment firms.

There are currently many organisations – such as MDBs, investment banks and management consultancies – that fulfil some of these functions. However, few have the national reach, stakeholder credibility, large-scale investment expertise, and policy nous to be able to catalyse massive capital flows from the Global North to the Global South. Some Global South countries already have well-established investment agencies, such as the India's National Investment and Infrastructure Fund (NIIF), the Indonesia Investment Authority (IIA) and the Brazilian Development Bank (BNDES). These agencies can redirect their focus to climate finance, and similar ones can also be set up in other Global South countries.

### **Box 5: Unique Structure Required for Green Investment Banks: NIIF India Example**

The mission of country GIBs is to accelerate Global North capital deployment into green investments in the Global South. They are essentially meant to be a multi-asset alternative investment firms with deep sectoral and policy expertise in their countries. Ideally, GIBs should be owned by a diverse array of local and Global North financial institutions.

India has established the National Investment and Infrastructure Fund (NIIF) to catalyse investments in India. The NIIF was announced by the Government of India (GoI) in the Union Budget for FY2015-16 with the objective of creating a professionally managed and commercially focused institution which could channelize international and domestic capital for large-scale investments. Anchored by the GoI with a 49% stake, NIIF needs to compulsorily raise the balance 51% from institutional investors in each fund that it manages. NIIF's operations started in January 2017, when it received the first tranche of funding from GoI and thereafter commenced its recruitment process to hire the team.

As a part of the fund-raising process, GoI officials and the NIIF management team met leading financial investors (e.g., sovereign wealth funds, pension funds) across all the important geographies. The final investment strategy of NIIF's infrastructure fund was crafted based on the inputs received from the investor community during the fund-raising process. Its key aspects are strong preference of the investors for operating assets and aversion to minority investments in promoter led companies.

The other important realisation from investor discussions was the need for NIIF to adopt a segmented approach to fund-raising, targeting different pools of capital for different strategies and sequencing the execution of those strategies – which led to the birth of three different sub-funds i.e. Master Fund (MF) focused on core infrastructure, Fund of Funds (FOF) focusing on adjacent high-impact sectors and Strategic Opportunities Fund (SOF) to focus on important industries requiring growth equity.

Till date, NIIF funds have raised funds from non-Gol investors, including from foreign institutional investors. Master Fund and Fund of Funds have both reached their Final Closes, and Gol has a 49% share in each of these funds. Master Fund's international investors include Sovereign Wealth Funds, pension funds, and the U.S. International Development Finance Corporation (USIDFC). FOF investors consist of three MDBs. The equity capital raised through NIIF's funds is long-term (10-15 years +) and denominated in Indian Rupees – both factors being distinctly better than the other infrastructure funds raised till date. NIIF has evolved to be a unique, collaborative investment firm which has combined sovereign funds with capital from some of the largest global, strategic, and financial investors.

## Raising Funds for Climate Finance

Trillions of dollars of climate finance have to flow from the Global North to the Global South to accelerate climate action in the immediate future. The challenge is particularly daunting for mobilising adaptation finance. As noted by the IMF in 2022, “despite its [adaptation finance's] significant benefits for society, it often does not generate sufficient private financial returns” (IMF 2022). Under the various climate agreements, there has been no concrete commitment from the Global North on the share of individual contributions, while no standard or formula delineates the fair share that a country must pay. Commitments and pledges to provide finance have largely been voluntary. Therefore, mobilising climate finance flows for the Global South has been challenging and subject to various geopolitical constraints. Owing to a lack of clear demarcation of responsibility, climate action has been trapped in a stalemate: the Global South does not commit to stricter climate action citing lack of climate finance, while the Global North does not commit to climate finance citing absence of commitments from the Global South countries. The GCA is designed to break this stalemate. In the paper on the foundational structures of the GCA, we noted that the incentives for Global North treasuries to make budgetary contributions toward risk financing must be as strong as the incentives to solicit emissions-reduction commitments from the Global South. The GCA relies on the leveraging/rechannelling power of the multilateral institution ecosystem to do the heavy lifting on climate finance flows. As a first step, the requirement of relatively modest budgetary contribution tied to climate action serves as a strong incentive to provide climate finance. What can be a way this burden is shared?

To ensure that, it is necessary to outline various fair and objective methods for raising funds for climate finance, particularly from the countries of the Global North. Various mechanisms have been proposed. These include the Global Carbon Incentive (GCI) – as proposed by Professor Raghuram Rajan in (Rajan 2021) – ODAs and concessional loans as well as additional financing through MDBs. All of these and other, similar mechanisms will have to be revitalised to meet the needs of climate finance.

## Global Carbon Incentive Program

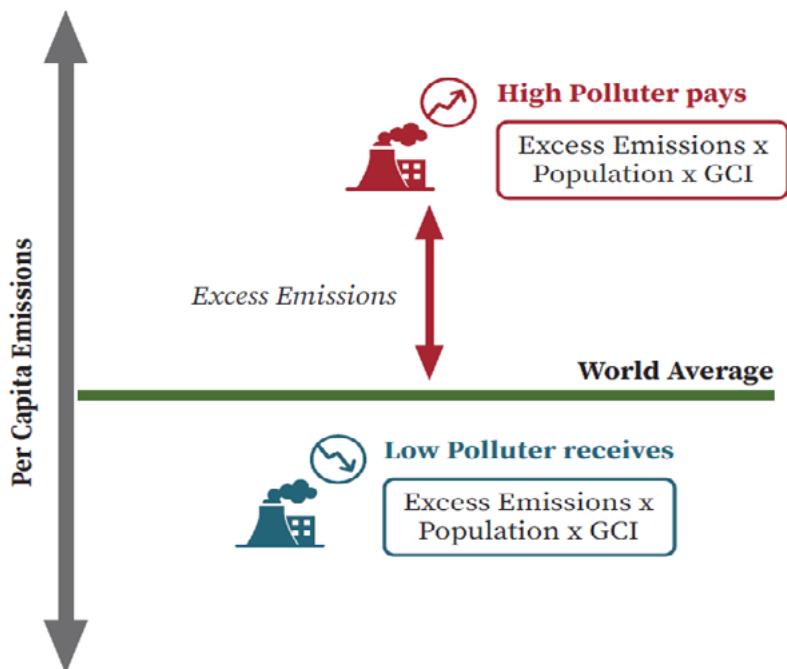
The GCI offers a mechanism for mobilising funds through a fair and objective calculation. Through this, each country that emits more than the global average per capita emissions, which is around five tonnes, would pay annually into a global incentive fund. The amount to be paid would be calculated by multiplying the excess emissions per capita by the country's population – above the global average – by the GCI, a predetermined 'price' per ton of emissions. Using the same calculation, a country that emits lesser than the per

capita global average would be entitled to receive a corresponding volume of financial flows.

Illustration: Say the Global Carbon Incentive is fixed (agreed upon by all countries) at \$10 per ton of carbon. Then the USA in 2019 would have had to pay \$37.65 billion (population of 328 million and per capita emissions of 15.97 tons). India, by the same measure, would be entitled to receive \$35.2 billion (population of 1.36 billion and per capita emissions of 1.92 tons).

The concept represents a simple self-financing mechanism that creates uniform incentives for all countries to take climate action. The Global North will have an incentive to reduce emissions, as they would have to commit a lower volume of funds. The Global South, meanwhile, would be de-incentivised to increase emissions, as their share of receivable funds would decrease. The emission calculations would, however, need to be adjusted for carbon emissions embedded in a country's imports.

### Illustration 1: Global Carbon Incentive Program



Source: Illustration based on Raghuram Rajan, 'Reducing Global Emissions can be Simple and Self-financing,' *Financial Times*, November 2, 2021

The GCI would also be equitable, as those countries that have been historic polluters will also have high per capita emissions. The global principle of common but differentiated responsibilities (CBDR) would also be respected. Meanwhile, those countries that will have to bear the costs of climate change, but have not been significant polluters, will receive compensation to help adapt to climate change.

The mechanism is also consistent with the 'polluter pays' principle. In addition, the mechanism does not impinge on the sovereignty of countries – how a country raises its financing is left to its domestic laws and policies. The volume of funds to be contributed would depend on the agreed-upon GCI. A low price of US\$10 per tonne would not mobilise the trillions needed, but countries would also be wary of committing to a high GCI. However, the mechanism would be useful for mobilising funds for adaptation and scaling the balance sheets of MDBs.

## Alternative Sources to raise Climate Finance

Akin to the GCI, there are several alternative proposals for raising finance. Such finance must be mostly grants-based as, unlike certain mitigation activities that can be profitable, it does not generate any returns.

**1. ODAs and Concessional Loans:** The Official Development Assistance (ODA) target has been “the best-known international target in the aid field” since the 1970s, where economically-advanced countries have committed to meet a target of “a minimum net amount of 0.7% of its GNP at market prices”. As of 2021, net ODA flows from Development Assistance Committee (DAC) members of the OECD were at around US\$170 billion.<sup>xxi</sup> The United Nations Conference on Trade and Development (UNCTAD) reports that “if the G7 countries [alone] had met the 0.7% ODA target in 2020, an additional US\$155 billion would have been available to meet development goals”. The OECD reports that “no other DAC country has met the target since it was established, and the weighted average of DAC members’ ODA has never exceeded 0.4% of GNP.”

An ODA outflow, by nature, is concessional, as it must convey a grant element of at least 25%. This DAC criteria also require that ODA flows must be “administered with the promotion of the economic development and welfare of developing countries as its main objective”. The definition implies that a lot of the money flows towards other measures such as food aid and social infrastructure creation. But adaptation measures such as building climate resilient infrastructure clearly fit within this definition. These flows are either given bilaterally to DAC list of ODA recipients, or to multilateral institutions. Bilateral finance can be targeted at Just Energy Transition Partnerships (JETPs) where the engagement is primarily bilateral. By raising ODA commitments or committing a portion of ODA flows to adaptation, the Global North can substantially improve the finances of the Global South countries for adaptation measures.

**2. Innovative financing through MDBs:** High-income countries receive 67% of the IMF’s special drawing rights (SDRs), but these lie idle because they do not need them as much as developing countries do. The global financial community mooted the idea of ‘recycling’ these SDRs, lending them back to the IMF or to MDBs, which can then repurpose them for climate change. The G20, under the Italian Presidency, pledged almost US\$45 billion from their recent SDRs allocation toward vulnerable countries.<sup>xxii</sup> One report reads, “the G7 has asked finance ministers and central bank governors to develop and review proposals for a voluntary US\$100 billion reallocation of SDRs from countries with excess reserves” (Bhattacharya, et al. 2022). While the details are still being negotiated, the report mentions that SDR financing would open fiscal space for countries to invest in adaptation measures. This proposal would be channelled through the IMF’s recently-approved Resilience and Sustainability Trust.

As of October 2022, the IMF reports that contributions amounting to US\$20 billion have been signed with six members, while progress on contributions worth US\$37 billion is underway. (Plant and Andrews 2021) of Center for Global Development instead recommend that SDRs be channelled through MDBs. Allowing MDBs to have more lenient gearing ratios would afford them more space to make grants and concessional loans. Together with the ODA, (Bhattacharya, et al. 2022) estimate that multilateral finance, excluding MDB disbursements, could be increased by 50% in 2025 from 2019 levels. These would

contribute about US\$96 billion or more toward development goals. Irrespective of the mechanism employed, SDR recycling appears to be a viable source for contributions toward climate finance.

Lastly, in addition to these measures several reports also call for channelising private philanthropy<sup>xxiii</sup> for supplementing climate adaptation through:<sup>xxiv</sup>

**a Sustainability-linked or Development Impact Bonds<sup>xxv</sup>** that are specifically targeted at projects where predetermined social outcomes are the major criteria for providing finance. The issuer receives a bonus, if the sustainability target agreed upon in advance is met, and pays a penalty if it is missed; and

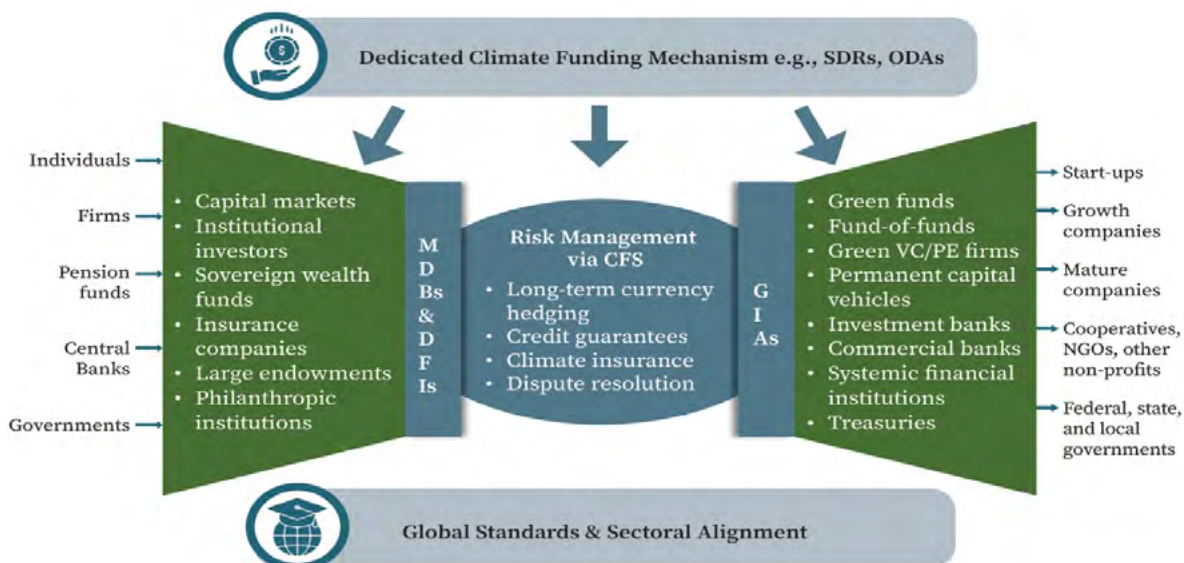
**b Pay-for-success’ private financing** where third-party investors – including private investors – provide the initial investment and develop a public sector project. The public sector then purchases the project for an amount commensurate with the project’s sustainability performance on pre-agreed parameters.

Climate financing for adaptation and scaling MDBs could be successfully delivered through a combination of these instruments. These methods of raising finance could also be augmented by several other financial agreements developed either bilaterally or multilaterally. It would be in the interest of developed countries to finance climate action and lose a few billions because – in the words of Raghuram Rajan in his Per Jacobsson lecture – “If you fail on both mitigation and adaptation, what is left is migration.”

## CONCLUSION

Modelling studies indicate that the Global South’s emissions are likely to continue growing indefinitely, reaching around 80% of global emissions by the end of the century. There are several reasons for continued emissions growth in the Global South. Firstly, negative externalities associated with global warming, air pollution and import dependency that are associated with usage of fossil fuels have not been priced in. Secondly, today’s policies are inadequate for forcing industries to transition away from fossil fuels. Thirdly, global capital markets are reluctant to invest in the Global South given sovereign risks, policy instability, lack of confidence in payments and contract enforcement, along with weak dispute resolution mechanisms.

### Illustration 2: Climate Finance System to be supported by GCA



Source: As conceptualised by the authors

Breaking this cycle needs a comprehensive approach that addresses policy risk and financial inadequacy. The global financial system will need to be reengineered to mobilise trillions of dollars of climate finance from the Global North to the Global South. This needs substantial grant capital for climate adaptation; a new regulatory and disclosure framework for accelerating private capital flows; and revamped MDBs capable of issuing blended capital instruments and leading innovative climate finance. Lastly, it needs stable and transparent climate approaches to financing from the Global North.



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- xxv (Wharton School 2016) talks about other bonds and private sector innovative financing which can also supplement public financing on the adaptation front.





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