



SUSTAINABLE
FINANCE
LAB

THE CLIMATE TRILLIONS WE NEED

Proposals for a new global financial architecture to end poverty and save the planet

Three main messages

Limiting climate change requires annual investments in emerging and developing countries, excluding China, to grow by around USD 4.5 trillion by 2030.

That means commitments are needed to the field of Multilateral Development Banks, rechanneling Special Drawing Rights, global taxes and a debt pause.

A discussion is needed on new issuances of Special Drawing Rights, expansion of the global safety net, democratizing global governance, debt contracts and a global carbon coin.

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POLICY
PAPER

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The Sustainable Finance Lab (SFL) is an academic think tank whose members are mostly professors from different universities in the Netherlands. The aim of the SFL is a stable and robust financial sector that contributes to an economy that serves humanity without depleting its environment. To this end the SFL develops ideas and provides a platform to discuss them, thus bridging science and practice.

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Policy Paper

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GLOSSARY

BRICS	Brazil, Russia, India, China, South Africa
CDM	Clean Development Mechanism
COP	Conference of the Parties
CRDC	Climate Resilient Debt Clauses
DSA	Debt Sustainability Analysis
ECB	European Central Bank
EMDEs	Emerging Market and Developing Economies
EU	European Union
FX	Foreign Exchange
G20	Group of 20
G7	Group of 7
GCI	General Capital Increase
GDP	Gross Domestic Product
GFSN	Global Financial Safety Net
GHG	Greenhouse Gas
GRQ	General Review of Quotas
IHLEG	Independent High-Level Expert Group on Climate Finance
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
LDC	Least Developed Countries
LICs	Low Income Countries
LSA	Liquidity Support Agreement
MDB	Multilateral Development Bank
NCQG	New Collective Quantified Goal
NGFS	Network for Greening the Financial System
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
PRGT	Poverty Reduction and Growth Trust
RST	Resilience and Sustainability Trust
SDG	Sustainable Development Goals
SDR	Special Drawing Rights
TIWB	Tax Inspectors Without Borders
UAE	United Arab Emirates

UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
USD	United States Dollar

SUMMARY

The stakes could not be higher when the world meets in Dubai for the 28th Conference of the Parties (COP28) of the United Nations Framework Convention on Climate Change (UNFCCC). The world is on fire – literally – with a year full of heat records, wildfires and wars. And it is set to get worse, with global average temperature increases due to climate change now at 1.1 degrees, and not set to stabilize before reaching 2.4-2.6 degrees.

Fortunately, the tide can still be turned. The Intergovernmental Panel on Climate Change (IPCC) speaks of a 'rapidly closing window of opportunity to secure a livable and sustainable future for all'. Since the Paris Accord in 2015 great strides have been made. Before that, the expected temperature rise was modeled to be 3.7 degrees. Since then, the price of solar and wind energy has fallen sharply, making them now the cheapest sources of energy available in most places.

But more is needed. The first stock-take shows that almost all countries of the world need to do better. Emerging and development economies (EMDEs) need to accelerate the most. However, they find themselves in a perfect storm of rising interest rates and rising prices for food and energy. Countries are spending more on interest payments than on education and health. On important Sustainable Development Goals (SDGs) such as poverty the progress of previous years has been reversed. 60 per cent of low-income countries are in or at high risk of debt distress.

Recently the G20 declared that "no country should have to choose between fighting poverty and fighting for our planet". With the current agenda it is impossible to keep this promise. Currently the climate investment gap for EMDEs only, excluding China, stands at USD 1 trillion and is set to rise to USD 2.4 trillion in 2030. By 2030 climate adaptation and loss and damage add almost another trillion USD to this uncovered bill and realizing the SDGs another USD 1.2 trillion.

Getting this USD 4.5 trillion on the table by 2030 from both private and public financial sources requires nothing less than the ‘transformation of the financial system’ that was called for at COP27. To build trust and to enable EMDEs to make the necessary investments in climate mitigation, adaptation and economic development, a more ambitious agenda is needed, including alternative sources of finance which can be controversial. We simply do not have the luxury to ignore them anymore.

This short paper explores which reforms of the global financial architecture are needed to enable a fair green transition across the globe, living up to past and present promises and commitments. We do this by confronting the agendas of the EU, G7 and G20 with more ambitious agendas such as the Bridgetown Agenda, the African Union and the United Nations. What emerges is a picture of what is currently lacking in terms of financial proposals on the global climate negotiations.

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COP28 can already make commitments to:

- Increase the lending capacity of multilateral development banks both by using their capital more efficiently and by increasing their capital
- Rechannel more of the existing Special Drawing Rights to the IMF and MDBs as hybrid capital
- Share macro risks between private and public finance and adjust credit ratings of EMDEs accordingly
- Integrate climate into supervision and monetary policy through mandatory transition plans, capital add-ons and concentration limits for climate risks and adjusting the collateral framework
- Mobilise resources through global taxes on shipping, aviation, wealth, financial transactions and/or (digital) profits
- Pause interest and debt repayment for the countries most in need

These measures can, in the short term, almost add up to the trillions required to both limit climate change and realize the Sustainable Development Goals. However, more is needed to make the international financial architecture future-proof. This means an international financial architecture that is able to withstand shocks and be more

inclusive, reflecting the multipolar geopolitical reality. This is a precondition for the kind of global cooperation that is needed to preserve our global common goods.

More fundamental reforms that need to be considered are:

- New regular or automated SDR-issuances
- Democratizing the IMF and World Bank
- Expansion of the global safety net
- A debt workout mechanism, platform and ultimately authority
- Introduction of a global carbon coin

1. COP28: THE CLIMATE FINANCE SUMMIT

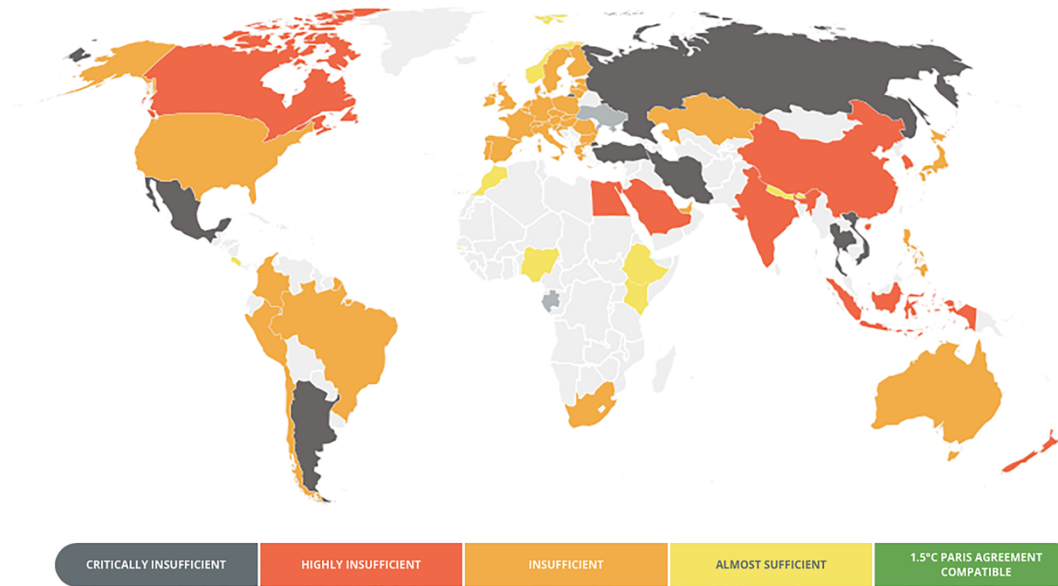
A rapidly closing window of opportunity

The stakes cannot be higher when the world meets in Dubai on November 30 for the 28th Conference of the Parties (COP28) of the United Nations Framework Convention on Climate Change (UNFCCC). The world is on fire – literally – with a year full of heat records, wildfires and wars. Disasters that are killing tens of thousands of people, displacing millions (Ritchie et al., 2022; UNHCR, 2023). And it is set to get worse, with climate change now at 1.1 degrees, set to stabilize not before 2.4-2.6 degrees if all current policies are implemented (Hausfather, 2023; Tollefson, 2023; UNEP, 2022). Global heating is set to lead to more geopolitical instability, conflict and migration (UNFCCC, 2022b).

But the tide can still be turned. The Intergovernmental Panel on Climate Change (IPCC) speaks of a 'rapidly closing window of opportunity to secure a liveable and sustainable future for all' (IPCC, 2023). Since the Paris Accord in 2015 great strides have been made. Before that, the expected temperature rise was modeled to be 3.7 degrees (Choudhury, 2013). The renewable energy capacity has grown from 1500GW in 2012 to more than 3500GW in 2022, with around one gigawatt per day projected to be installed in 2023 (IEA, 2022). The price of solar energy has fallen from more than 100 USD/Watt in 1975 to less than 0.5 USD/Watt in 2020, making it now the cheapest source of energy available in most places (Roser, 2020).

More is needed. At COP28, the first so called stock-take will show that almost all countries of the world need to do better. Whereas climate action in the rich countries of the US and EU is still deemed as merely insufficient, the powerhouses of the coming years, such as India and China, are labeled highly insufficient (see Figure 1 below). Currently no single country's climate action plan is compatible with preserving the global common good of a stable climate.

Figure 1. Global climate action compared to Paris Climate Agreement.



Source: Climate Action Tracker (2023).

The unfunded climate bill

At COP28 an acceleration of climate policies needs to be negotiated. The global North countries, united in the G7, call on major economies to revisit and strengthen the 2030 ‘Nationally Determined Contributions’ (NDCs) targets and to publish or update their ‘Long Term low GHG emission development Strategies’ (LTSs), to commit to net zero by 2050 at the latest and to peak global GHG emissions immediately and by no later than 2025 (G7, 2023). The EU calls for global phase out of unabated fossil fuels and a peak in their consumption this decade, the tripling of installed renewable energy capacity to 11 terawatt and doubling of the rate of energy efficiency improvements by 2030 (European Commission, 2023).

Important and science based as these calls are, there is a real danger that they will not be met by emerging and developing economies (EMDEs). One year ago in Egypt, at COP27, the tensions between North and South almost reached a breaking point. The promise of a fund for ‘Loss and Damage’, a long-held wish by the South, saved the day (UNFCCC, 2022c). However, the current outline for this fund has left many EMDEs disappointed: the expected initial size is USD 500 million (Gelles, 2023), developed countries are only “urged” to become key contributors to the fund, no hard commitments were made (Harvey, 2023b), and it remains unclear which “vulnerable” countries are eligible for the fund (Beer, 2023). The fund will be hosted at the World Bank, much to the discontent of many EMDEs who argue that the Bank has traditionally been dominated by developed countries (Vanhala, 2023). Also, the promise made in 2009 to raise USD 100 billion for the

climate fund has not been realized (Oxfam, 2023). Of the USD 100 billion pledged in 2021 for SDRs to be rechanneled to low-income countries less than one billion has actually been disbursed through the IMF's Resilience and Sustainability Trust (RST) (ONE, 2023). The world is still far from realizing the goals stated in article 2.1c of the Paris Accord to 'make financial flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development' (UNFCCC, 2015).

Meanwhile, low-income countries struggle with high prices of food and energy, rising interest rates and dollar exchange rate. Progress made on important Sustainable Development Goals such as poverty, hunger and access to health and clean drinking water has been reversed (UN, 2022). 60 per cent of low-income countries are at high risk of, or in, debt distress (Chamon et al., 2023). Today, 19 countries spend more on interest than on education and 45 spend more on interest than on health (UNCTAD, 2023a).

While in many of these low income countries climate change already is having a devastating impact it is here that climate investments need to grow the most. Developing and emerging countries now need to invest USD 1 trillion more each year in climate mitigation, growing to USD 2.4 trillion in 2030 (Bhattacharya et al., 2022). The cost of climate adaptation and loss and damage adds almost another trillion by 2030 (Chapagain et al., 2020; Markandya & González-Eguino, 2019; UNEP, 2021). And this is only climate. The non climate and nature related SDG financing gap stands at USD 1.2 trillion for the EMDEs, excluding China (G20, 2023b).

The need for a new global financial architecture

The G20 recently declared that “no country should have to choose between fighting poverty and fighting for our planet” (G20, 2023a) echoing the Paris Pact for People and the Planet (The Paris Pact for People and the Planet, 2023). According to last year's Sharm el-Sheikh Implementation Plan, no less than a 'transformation of the financial system' is needed (UNFCCC, 2022a) supported by calls for a new global financial architecture (African Union, 2023; Barbados Ministry of Foreign Affairs and Foreign Trade, 2022). To make COP28 a success the high-income countries need to deliver nothing short of that new financial architecture — something they do seem to be realizing. The G20 concluded that the international finance system must deliver significantly more financing to help EMDEs to fight poverty, tackle global challenges and maximize development impact (G20, 2023a). The EU has proposed setting a new dedicated agenda at COP28 to 'realise the goal of making finance flows consistent with a pathway towards low GHG emissions and climate-resilient development' (Council of the European Union, 2023a, 2023b).

To actually realise this, much more is needed than what has thus far been proposed - and more than what they have thus far seen as within scope of the COP negotiations. At COP28 the Independent High Level Expert Group on Climate Finance will present recommendations on a new framework for international climate finance that will include addressing debt distress in vulnerable countries (COP28, 2023).

This short paper explores which reforms of the global financial architecture are needed to enable a fair green transition across the globe, living up to past and present promises and commitments. We do this by comparing the agenda of the EU, G7 and G20 to more ambitious agendas such as the previously mentioned Bridgetown Agenda and that of the African Union and the United Nations (African Union, 2023; HLAB, 2023; UN, 2023). A picture then emerges of what is currently lacking in terms of financial proposals in the global climate negotiations to truly transform the financial system.

To this end, Section 2 provides an assessment of the climate funding gap in low income and emerging economies. Section 3 follows with an overview of the measures that the Global North could commit to at COP28. In the last section, Section 4, we will outline more fundamental changes to the global financial architecture that may be necessary to do what is needed to preserve the global common good of a relatively stable climate and nature restoration.

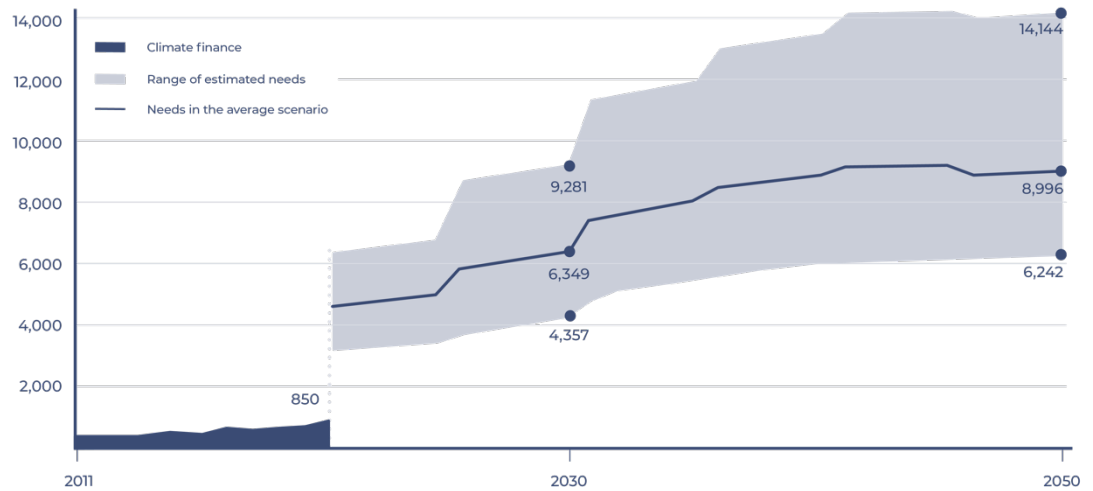
2. THE DANGEROUSLY OPTIMISTIC GLOBAL CLIMATE FINANCE AGENDA

In this section we discuss the climate finance gap for EMDEs as well as the official agenda on how to bridge this. We show that the current global climate finance agenda is falling short. In particular, expectations with respect to the role that blended finance and domestic resource mobilization can play seem wildly optimistic. Dangerously so, as this prevents us from considering additional, more innovative— and sometimes more controversial — sources of finance. We simply do not have the luxury to ignore such sources of finance if we are serious about providing climate investments with the necessary urgency and at the required scale. A more ambitious agenda that delves into alternative funding sources is essential.

The climate finance gap

Investments in climate mitigation and adaptation globally remain far below levels necessary to achieve the stated climate goals. The Climate Policy Initiative puts the global funding gap around USD 3.5 trillion in 2022, rising to USD 5.5 trillion in 2030 (Climate Policy Initiative, 2022).

Figure 2. Current finance flows and the total financing need until 2050.



Source: Climate Policy Initiative (2022)

Climate investments need to increase substantially in Europe and North America, by 2 to 4 times and 3 to 6 times respectively. The challenge is even greater in lower-income regions such as South Asia and Africa, which require 7 to 14 times and 5 to 12 times more investment respectively.

It is estimated that, only for climate mitigation, EMDEs (excluding China) will need to invest an extra USD 1 trillion per year by 2025, growing to USD 2.4 trillion in 2030 (Songwe et al., 2022). On top of that, EMDEs alone will require up to USD 200-300 billion a year by 2030 for climate adaptation (Chapagain et al., 2020; UNEP, 2021). In addition, the costs of loss and damage could run up to USD 600 billion in 2030 (Markandya & González-Eguino, 2019).

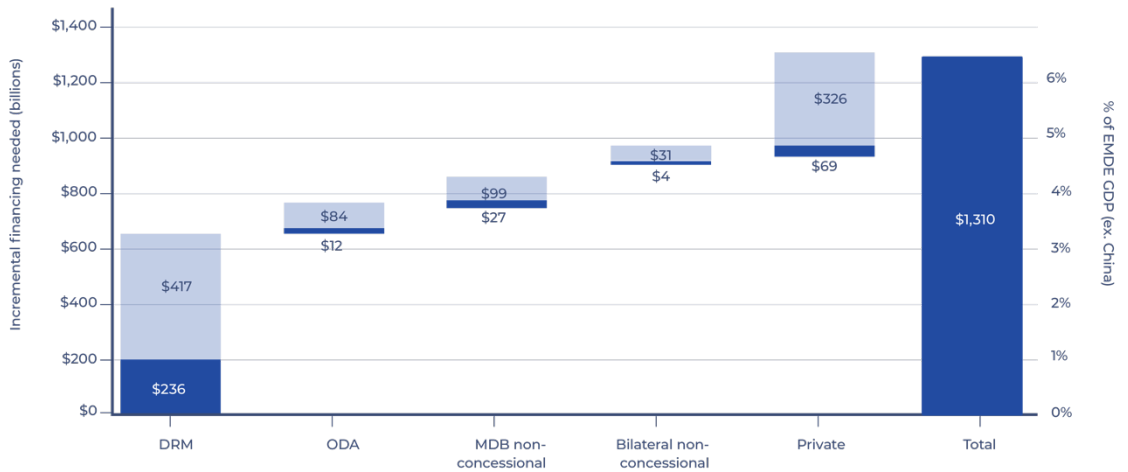
To reach broader Sustainable Development Goals by 2030 that include social and nature goals EMDEs, excluding China, need to make additional annual investments of USD 3 trillion until 2030. Of this USD 1800 billion is needed for the green goals of climate and nature (around 15% nature) and USD 1200 billion for the social goals ('other SDGs') (G20, 2023b).

The plan to bridge the USD 1 trillion EMDEs climate mitigation investment gap

During COP27 the Independent High Level Expert Group (HLEG) on Climate Finance published its 'Grand Match finance strategy' to close the climate finance gap by 2025. As Figure 3 below shows, the main financial sources are expected to come from domestic resource mobilisation (an additional USD 417 billion) and private finance (USD 326 billion additionally), where private finance should be

understood as part of blended finance (blending public and private finance) (Bhattacharya et al., 2022; Songwe et al., 2022).

Figure 3. The Grand Match financing strategy to close the climate finance gap between 2019-2025 (2019 USD)



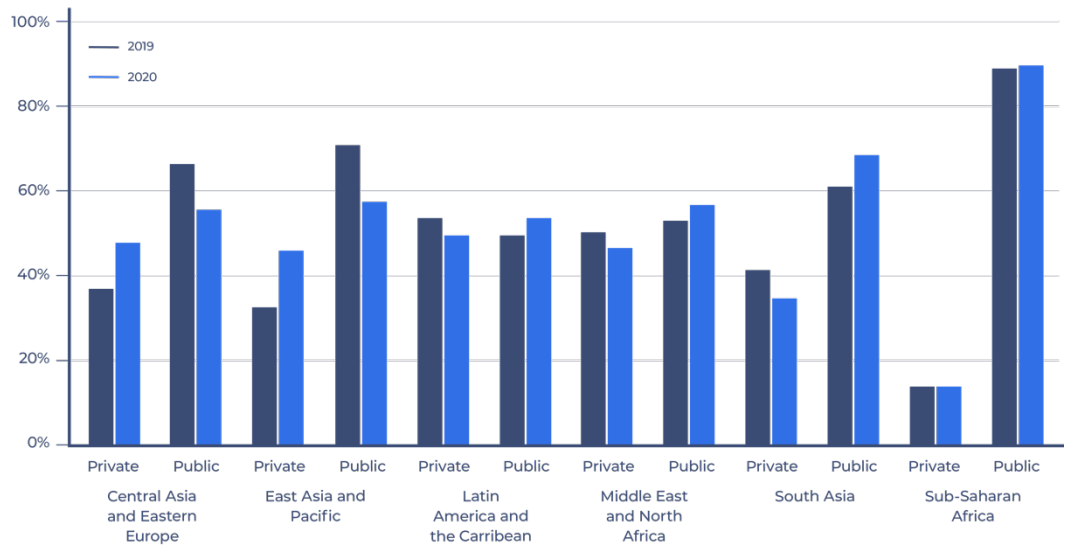
Source: Songwe et al. (2022)

The blending multiplier

Blended finance has gained the status of a silver bullet. The assumption is that public capital investments lever private investments according to a certain ratio of the “blend”. However, the ratios of private to public money assumed are often quite high. The IMF, for instance, expects every public dollar to draw in nine private dollars. In reality total private finance in 2020 constituted only around 50% of global climate finance (Prasad et al., 2022).

In the low-income regions, where climate investments need to increase most strongly, even a public-private ratio of 1:1 is often not tenable. As Figure 4 below shows in Asia most climate finance comes from public sources. In Sub-Saharan Africa even over 80% of climate finance comes from public sources (African Development Bank Group, 2022).

Figure 4. Private and public finance in EMDEs.



Source: African Development Bank Group (2022).

Over the last years private investments through blended finance actually decreased in EMDEs, from USD 150 billion in 2012 to less than USD 100 billion in 2019 (Gallagher & Kozul-Wright, 2022). Between 2019 and 2021, there was only USD 14 billion of blended finance deals for low-income countries, less than half the volume seen in the previous three years (Tett, 2022).

Domestic resource mobilization: Can they not pay for it themselves?

The idea is that EMDEs can raise additional taxes by 2025 through increasing their sometimes very low tax rates and cutting down on tax exemptions (Fenochietto & Pessino, 2013). In this context, the IHLEG recommends an incremental tax effort of at least 2.7% of EMDEs' GDP, equal to USD 650 billion, or an additional USD 417 billion by 2025 on top of earlier IMF projections (Bhattacharya et al., 2022).

However, implementing and enforcing these kinds of reforms has proven challenging. EMDEs are renowned for administrative capacity constraints preventing them from addressing tax evasion and keeping avoidance under control (Abdel-Kader & de Mooij, 2020). Studies on the projected development of tax-to-GDP ratios in EMDEs show that their tax revenues are expected to only slightly increase (Hill et al., 2022). Moreover, international support initiatives have already been in place, such as the Tax Inspectors Without Borders (TIWB)

assistance programmes. Between 2012 and 2020 this has helped raise EMDEs' tax revenues by a mere USD 537 million (OECD/UNDP, 2020). A figure far away from the USD 417 billion estimated by the IHLEG.

Making matters worse, in response to the Russian invasion of Ukraine and the subsequent spike in inflation levels, global monetary and fiscal policies have tightened (World Bank, 2023). This has resulted in private sector capital outflows from EMDEs and is bound to substantially hinder these countries' economic growth (UNCTAD, 2023b). This adds to the already high cost of debt. Despite their lower debt to GDP ratios, LDCs pay on average 14 percent of their domestic revenue in interest payments, compared to only around 3.5 percent in developed countries (Spiegel & Schwank, 2022). Of the low-income countries eligible for special IMF support 10 are currently in debt distress, while 26 are at high risk, 26 countries at moderate risk and 7 countries are at low risk (IMF, 2023).

Conclusion

COP27 and the subsequent international meetings have acknowledged that it will not be possible to save the planet without eradicating poverty. Excluding China, the EMDE climate mitigation gap currently stands at USD 1 trillion and is set to grow to USD 2.4 trillion in 2030. Adaptation and loss and damage can add almost USD 1 trillion in 2030 and realizing the social SDG goals adds another USD 1.2 trillion, bringing the total for annual extra investments needed by 2030 to around USD 4.5 trillion.

This is an entirely different order of magnitude from the current discussions over a USD 100 billion commitment made in 2009. COP28 needs to acknowledge that the discussion about climate finance for EMDEs is in trillions not billions.

And whereas the expectations for private finance and domestic resource mobilization have always been (wildly) optimistic, the current economic and geopolitical landscape means they are clearly impossible to attain. If COP28 is to have any chance of success new sources of public funding must be found. What these may be we will explore in the next two sections.

3. WHAT COP28 COULD DELIVER

The climate finance discussion must urgently move from billions of dollars to the trillions required to end poverty and save the planet. Nothing less will do. As we showed in the previous section, the current agenda for climate finance does not go far enough. For developing and emerging economies to take on the climate obligations needed to stabilize the global climate they need more financial assistance.

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Policymakers in the global North need to leave their comfort zone and adopt policies they have so far rejected as unnecessary or even outright impossible. Only then can we get the necessary trillions on the table within the required timespan. This section discusses what decisions can be taken at COP28 to sharply increase available climate finance. Doing so will build trust and allow EMDEs to develop their economies sustainably.

New climate finance goal: from billions to trillions

First of all, the existing pledges need to be realized at COP28: the 2009 commitment to bring USD 100 billion to the table annually from 2020 onwards, the doubling of adaptation finance by 2025, a strong replenishment of the Green Climate Fund for its upcoming 2024-2027 programming period and agreement on the funding arrangements for loss and damage (GCF, 2023; UNFCCC, 2009, 2021, 2022). Donor countries must meet their long-standing commitments — dating from 1970 — of 0.7 percent of national income for ODA (OECD, 2016).

These numbers however pale next to the required financing for climate, let alone for making good on the G20 promise that no country should have to choose between poverty and planet. The current ambition for available public and private funds needs to be brought in line with the real need. To replace the current USD 100 billion pledge from 2025 onwards, the G20 has called for setting ‘an ambitious, transparent and trackable New Collective Quantified Goal (NCQG) of climate

finance in 2024, from a floor of USD 100 billion a year' (G20, 2023a). Rather than this low floor, we suggest a shift in thinking from billions to the 4.5 trillions that are needed by 2030 to realize all the SDGs. This must be made explicit in the conclusions of COP28 — raising the bar for climate finance for the coming years.

Bigger, better, bolder MDBs

There is already agreement to increase the lending capacity of Multilateral Development Banks (MDB's). They have a long track record of financing in emerging economies and have an organization in place. Their lending capacity can be increased through more efficient use of their current capital, balance sheet optimization through the use of new guarantees, through callable capital and the use of hybrid capital, including recycled SDRs. In this way, suggests the G20 Capital Adequacy Frameworks report, an additional USD 80 billion can be lent each year (G20, 2023b).

More capital is also needed. Such a General Capital Increase (GCI) makes it reasonably possible, according to the Independent Experts Group, to leverage each dollar of new equity to support at least USD 15 of additional external financing for sustainable investments: USD 7 in direct MDB lending and USD 8 in additional direct and indirect mobilization of external private capital. In this way MDB lending can be tripled from its current USD 130 billion to USD 390 billion each year (G20, 2023b). Note that this still falls short of African Union demands for USD 500 billion per year and the UN ambition for USD 500-1000 billion more in MDB lending (African Union, 2023; UN, 2023).

Rechannel Special Drawing Rights to MDBs

A rarely used source of finance for EMDEs that has nevertheless increased since 2021 is the IMF's Special Drawing Rights (SDRs). At the height of the pandemic the IMF created USD 650 billion worth of SDRs (IMF, 2021). Developing countries were able to trade these for the much-needed dollars and euros to invest in their health and social support systems. The USD 53 billion of SDRs that went to lower-middle-income countries and USD 9 billion to low-income countries have quickly been spent (Schoenmaker & Van Tilburg, 2023).

The G20 has committed to reallocate another USD 100 billion of SDRs, around 20% of its stock, to EMDEs (G20, 2023a). Up to around USD 60 billion of this can be absorbed by two IMF-trusts: the already existing Poverty Reduction and Growth Trust (PRGT) and the newly created Resilience and Sustainability Trust (RST). However, up to now, only around USD 700 million has been disbursed through these two facilities (Plant & Camps Adrogué, 2023). And while the USD 60 billion limit for the combined IMF trusts is not set in stone, it is also not easy to expand due to limited capacity to distribute the funds and due to the real money needed to provide loans on concessional terms (Schoenmaker & Van Tilburg, 2023).

Given the limitations of the IMF trusts, proposals have been made to rechannel SDRs through Multilateral Development Banks (MDBs). MDBs have the infrastructure and experience to deal with development and climate finance in EMDEs. One option is for MDBs to issue 'SDR-bonds' (Setser & Paduano, 2023). An even more effective use of SDRs is as hybrid capital — which can be leveraged at the rate of 3 or 4 to 1 — as proposed by the African- and the Inter American Development Banks (Plant, 2023). On the basis of estimates that there is USD 300-400 billion in unused SDRs on the balance sheets of high income countries this hybrid capital proposal means that USD 1200 billion in lending could become available (Ravenscroft, 2022). For this to materialize all current pledges for rechanneling SDRs first need to be increased. France and Japan have already increased their pledge to 40% (Lawder, 2023; Le Maire, 2023).

Legal objections by the ECB have meant that EU countries have so far rechanneled only through the IMF. However, as SDRs preserve the reserve asset status of the rechanneled SDRs and are being used for purposes similar to the IMF, which have been cleared by the ECB, it should be possible to find a construction that is compatible with the EU's legal framework (Paduano, 2023; Schoenmaker & Van Tilburg, 2023; The Rockefeller Foundation, 2023). Both G7 and G20 call for further exploration of viable options for enabling the voluntary channeling of SDRs through MDBs, while respecting national legal frameworks and the need to preserve the reserve assets character and status of SDRs (G7, 2023; G20, 2023a). A step that has been taken by France is to participate in the SDR rechanneling to MDBs through the Liquidity Support Arrangement (LSA) (The Rockefeller Foundation, 2023).

Blended finance

In the previous chapter we argued that the expectations for blended finance in the short run seem wildly optimistic. This does not mean that we should not try to increase also private financial flows for climate investments to EMDEs. First MDBs should implement their peers' best practices in this field. MDBs have tried-and-tested methods of leveraging private finance for development. For instance, the International Bank for Reconstruction and Development has leveraged total paid-in capital by a factor of ten (Humphrey & Prizzon, 2020). MDBs can create safe, investable local currency assets that can attract domestic savings. Domestic savings that are currently exported, to a large extent at low returns, to financial centres in advanced countries (Schoenmaker & Volz, 2022). A good example is also the Dutch ILX fund through which Dutch pension funds have co-financed MDB lending of over one billion dollars (ILX, 2022).

A fine balance needs to be struck in public-private risk sharing when risks are shared through public guarantees, such as macro risks including foreign exchange rates, weather related risks, pandemics and political risks. This would allow credit rating agencies (CRAs) to provide more granular assessments of the risks and hence lower the cost of capital for EMDE countries.

Optimally, CRAs should develop more long-term ratings, viewing countries' efforts to invest in SDGs more favorably. While these investments may increase public debt in the short term, in the long term, they stimulate growth, improve resilience, and productive investment, hence, strengthen countries' ability to repay. Regulators, standard setters, investors and CRAs need to also work together to soften the cliff-edge dichotomy between investment-grade and below-investment-grade issuers (UNDESA, 2022)

Financial regulation, supervision and monetary policy

In 2015 the Bank of England president Mark Carney put climate risks on the agenda of financial supervisors. Now, more than eight years later the ECB has announced it will start to act upon banks not managing these risks adequately (Elderson, 2023). Climate poses both physical and transition risks and these risks are increasingly recognised by supervisors.

Financial institutions are impacted by nature degradation (outside-in) but also contribute to nature degradation (inside-out). This is known as the 'double materiality' concept, where both the financial materiality (outside-in) and environmental materiality (inside-out) are considered. This concept is well-known in literature and central to the European sustainability reporting regulations (Adams et al., 2021; Boissinot et al., 2022; Directive (EU) 2022/2464, 2022).

When central banks as supervisors and monetary policy makers act upon climate risks this creates incentives for financial institutions to bring their investments and lending in line with the Paris agreement. Financial institutions need to make transparent the climate risks to which they are exposed to as well as those they contribute to ('endogenous risk'). A transition plan for this transparency is, for instance, required by EU legislation (CSRD, CRR/CRD) (Dikau et al., 2022; Noguès & Evain, 2022).

Through micro-prudential supervision financial institutions can be required to hold more capital against climate risks — starting with the capital add-ons in the second pillar of the Basel framework for banks. In macroprudential- supervision concentration limits and the systemic risk buffer can be used to reduce the systemic risk (Dafermos & Nikolaidi, 2022; Monnin & Hiebert, 2023). In monetary policy climate risks could form the basis for adjusting the collateral framework as the ECB has done (Dafermos et al., 2021). Both the Coalition of Finance Ministers

for Climate Action and the Network for Greening the Financial System of central banks and supervisors (NGFS) could coordinate such global efforts.

Taxation

In the near future, domestic resource mobilization will not bring what was anti-cipated before Covid and the Ukraine war. EMDEs have for some years faced an uphill battle against the advanced global infrastructure for tax evasion. The Global Tax Evasion report 2023 shows that policies to combat tax evasion can be effective (EU Tax Observatory, 2023). Thanks to the automatic exchange of bank information offshore tax evasion by wealthy individuals has shrunk by a factor of about three over the last 10 years. However, the global minimum tax of 15% on multinationals, which raised high hopes in 2021, has also been dramatically weakened. Also, frequent use of shell companies to avoid income taxation means global billionaires have very low effective tax rates equivalent to 0% to 0.5% of their wealth (EU Tax Observatory, 2023).

The African Union requests more inclusive and effective international tax cooperation at the United Nations to reduce Africa's loss of USD 27 billion annual corporate tax revenue through profit shifting (African Union, 2023). The EU Tax Observatory estimates that a higher global minimum tax on multinational companies, free of loopholes, would raise USD 250 billion per year. It also proposed a global minimum 2% annual tax to be levied on the wealth of the world's 3000 wealthiest individuals. This tax could also raise USD 250 billion a year (EU Tax Observatory, 2023). A global wealth tax has also been supported by French president Macron, in addition to global taxes on shipping and aviation (Kaminski, 2023). African Union-chair and Kenyan president Ruto estimated that a carbon tax, financial transaction tax, and maritime, shipping and aviation levies can raise between USD 1.5 trillion and USD 2 trillion (Mooney & Bryan, 2023).

Debt

Next to fresh funding for investments, the legacy issue of high debts needs to be resolved. Global public debt has reached a record of USD 92 trillion in total, of which almost 30% is owed by EMDEs (mainly China, India and Brazil) (UNCTAD, 2023a). 60 per cent of low-income countries (LICs) are at high risk of, or in, debt distress (Chamon et al., 2023). Today, 19 countries are spending more on interest than on education and 45 more on interest than on health (UNCTAD, 2023a). While high debt related costs impede access to finance for development and climate action and the global economy is facing monetary and fiscal contraction, relieving debt in the short and medium term is essential.

As a first step a moratorium on interest and debt repayment is needed for the countries most in need. During the Africa Climate Summit in Nairobi in September, African leaders called for measures that could alleviate high debt levels and costs

in the short run, such as a 10-year grace period, the extension of sovereign debt contracts and a decline of EMDEs' borrowing costs, which tend to be 5-8 times the amount that wealthy countries pay (African Union, 2023). While the World Bank has committed to pausing debt repayments for countries impacted by natural disasters, this will only cover new loans. The UK pledged to a similar debt pause, but limiting itself to 12 countries in Africa and the Caribbean (Harvey, 2023a).

Calls such as from the Nairobi declaration to improve the Common Framework, a debt treatment initiative established by the G20 and supported by the Club of Rome, need to be answered. Implementation of the Common Framework is slow, and only a few countries have applied for debt treatment under the Framework. Currently, the Framework sticks to a case-by-case approach in terms of debt restructuring instead of aiming for a multilateral debt workout mechanism (more on this in chapter 4) (Munevar, 2020). Additionally, the Common Framework should be accessible for middle income countries that have significant official debt and require debt restructuring.

Another proposal that is gaining some traction are debt for nature swaps. They entail debt forgiveness (i.e., a debt discount agreed by the creditor) in exchange for discount. In exchange, the debtor country commits to investing the equivalence of the refinanced debt in climate mitigations and adaptation programs (Qian, 2021; Steele & Patel, 2020). Debt swaps role is still very limited and they have proven hard to scale up. However, they could contribute to more affordable debts while stimulating investments in climate resilience and the attainment of the SDG's. In this spirit, the Common Agenda calls for a "reference framework for debt swaps-for-SDGs" – an idea that could be discussed by COP28 (UN, 2023).

Conclusion

The measures presented in this section would already go a long way towards the numbers required. Estimates are that by 2030 the MDB reforms would allow their lending to grow from the current USD 130 billion tot USD 390 billion annually (G20, 2023b). Rechanneling the remaining SDR's could provide an additional 300 to 1200 billion in total, depending on the leverage realized. The potential income of global taxes is estimated between USD 1.5-2 trillion annually. With these public funds, and supervision discouraging unsustainable investments and encouraging sustainable ones, and the improved growth outlook because of a debt pause, it should be possible to attract more private funding, getting closer to the USD 1 trillion the IEG expects (G20, 2023b).

4. MORE FUNDAMENTAL REFORMS

The measures that countries can commit to at COP28 outlined in the previous section can before 2030 go a long way to the trillions required to both limit climate change and realize the other Sustainable Development Goals. However, by current estimates they will not be enough to get all the required funding on the table. Most likely, they will also not all be implemented at the scale and speed required. Therefore, we need to explore other options as well.

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But more fundamentally more is needed to make the international financial architecture future-proof. To have an international financial architecture that is able to withstand shocks and is more inclusive, reflecting the multipolar geopolitical reality of today and tomorrow. Something that is also a precondition for the kind of global cooperation that is needed to preserve our global common goods. Now already we see a fragmentation of the international monetary system with non-OECD countries increasingly building alternative international financial institutions, from monetary funds and development banks to payment systems (Eichengreen, 2022; Stott, 2023).

Supervision

To fully integrate climate in the supervisory framework it also needs its place in Pillar 1 of the Basel framework. This pillar deals with the models used by banks on a daily basis to price their loans. The Basel committee on supervision needs to revisit the Pillar I framework to make it more forward looking and lengthen its time horizons (CSLN, 2022; Evain et al., 2022). Then higher capital requirements for exposures to climate risks can be introduced by means of an adjustment factor to the models used for capital (Dafermos & Nikolaidi, 2022).

In monetary policy central banks can build on the example given by Japan and China to introduce cheap refinancing for banks if they provide more climate friendly loans (Harding, 2021; PBoC, 2021). Such green dual rates or green targeted-

longer term refinancing operation (TLTROs) are specifically effective in bank based financial systems like those of Europe and EMDEs. They are relevant in every part of the economic cycle. In times of monetary easing they stimulate the economy. In times of monetary tightening they provide a necessary counterweight to the rising interest rates that disproportionately hurt investments in renewable energies due to their high investment costs (higher capex to opex) (Van Tilburg, 2023).

Regular SDR issuance for global common goods

Calls have been made for more automatic and/or regular issuance of SDRs (African Union, 2023; Barbados Ministry of Foreign Affairs and Foreign Trade, 2022; HLAB, 2023). Most recently Nobel prize winning economist Joseph Stiglitz proposed an annual issuance of USD 300 billion to finance LICs' fight against the climate crisis (Elliott, 2023). Another option is to make the SDR issuance automatic based on the occurrence of certain calamities such as wildfires and floods that heavily impact the economy (Paduano, 2022). Ideally also the rechanneling should be automated, incorporating MDB's use of hybrid capital, or the IMF should change its statute to allow for these climate-crisis-SDRs to be distributed only to the countries most in need.

Democratising IMF and World Bank

A new distribution of influence in international financial institutions is also needed with governance reflecting better the current, and future, geopolitical reality. The economic dominance of the US and Europe since the second world war has given way to a more multipolar global order. However, the governance, the chair and the votes, in the IMF and World Bank boards do not yet reflect this new order — as the figure below illustrates. A new weighting of votes based on GDP and population would benefit emerging economies like China, India and Brasil at the expense mostly of European countries.

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Figure 5. The world map resized according to the IMF votes



Source: Bretton Woods Project (2015)

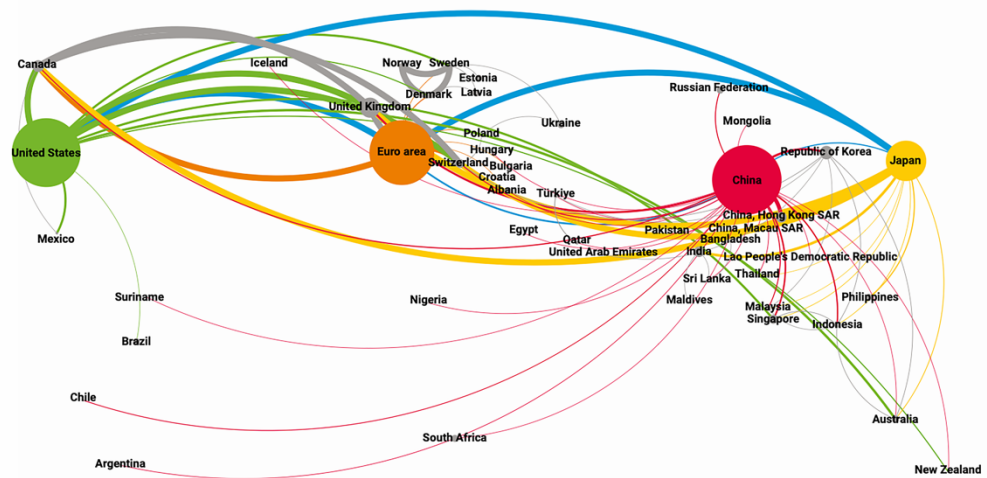
In its 'Our common agenda' the UN proposes that IMF member countries should separate the ability to pay from voting rights and allocations and develop different instruments for different uses (UN, 2023). There is some momentum behind these calls, as evidenced by the recent admission to the G20 of the African Union. And the G20 call to revisit the adequacy of quotas and to continue the process of IMF governance reform under the 16th General Review of Quotas (GRQ) (G20, 2023a).

A true global safety net

In the most recent financial upheavals it was not the global monetary institutions that provided liquidity to the system but rather the bilateral swap lines offered by a few major central banks to selected jurisdictions. A lot of emerging economies, and certainly most low-income countries, have been excluded from this safety net. Making them more vulnerable to crisis which leads to higher borrowing costs even in normal times as these higher macro risks are priced in. Adding to what has been called 'the great financial divide'.

Figure 6. Bilateral swap line networks, 2022

(Scaled by volume)



Source: Department of Economic and Social Affairs based on IMF and the Global Financial Safety Net Tracker.

Note: Colour-coded as follows: United States of America, green; China, red; euro area, orange; Japan, yellow. Swap lines between the aforementioned major central banks are blue. The swap lines between all other countries are grey. The size of each bubble represents the total amount of swap lines in United States dollar terms. Line thickness is scaled by the volume of the bilateral swap line – unlimited bilateral swap lines are set at maximum thickness.

Abbreviation: SAR, Special Administrative Region.

Source: UN (2023)

To reduce this financial divide and improve EMDEs' borrowing terms in markets the global safety net needs to be made more inclusive. This can be done through the more automated SDR issuance in a countercyclical manner or in response to shocks, with allocations based on need. The IMF could also develop a multilateral swap facility, together with major central banks, to achieve greater global scale and

overcome the selectivity and fragmentation posed by today's bilateral central bank swap arrangements. The criteria for drawing on the swap facility should be pre-agreed with the Executive Board to allow for greater automaticity in the case of extreme shocks. A revamped GFSN must provide support with minimal or no conditionality in cases of global shocks as well as climate shocks (Barbados Ministry of Foreign Affairs and Foreign Trade, 2022; HLAB, 2023; UN, 2023).

Debt

Chapter 3 has demonstrated what can be done to address debt problems in the short and medium term. More fundamental reforms are needed to tackle debt more comprehensively, preventing future debt problems and debt crises.

Currently, data on debt is scattered and limited, which hampers comparability of debts and debt contracts, hindering comprehensive and fair debt restructuring on a global scale. To improve debt management, more transparency on debt data is needed including publicly available debt sustainability analyses (DSAs) and credit ratings (UNCTAD, 2023a). DSAs should account for the impact of climate change and the impact of a country's debt on its ability to meet development goals (Munevar, 2020).

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A debt workout mechanism is needed that addresses comparability of treatment between public and private creditors – an important omission in the Common Framework. Such a mechanism is part of the UN's Common Agenda (UN, 2023). The High-Level Advisory Board on Effective Multilateralism, established by the UN's Secretary-General, similarly advocates a global coordination platform for rapid, systemic and reliable debt treatment (HLAB, 2023). As a next step, an inclusive and representative debt authority is needed to coordinate timely, orderly, effective and fair debt resolutions (UN, 2023). Such an authority should take account of the increased complexity of the current creditor base and needs to function independently.

Also needed are debt contracts that take a country's economic situation into account and allow for suspension of debt payments in the case of certain shocks or climate catastrophes – so-called state-contingent debt instruments. The G7 has recently welcomed the development of Climate Resilient Debt Clauses, enhancing the safety net for borrowers confronted with the effects of climate change (G7, 2023). Ideally, these kinds of clauses would be adopted and aligned by the private sector, both bilateral and multilateral lenders, allowing for comprehensive automatic debt standstills for countries that suffer from certain climate events (UNCTAD, 2022).

Global carbon coin

Where SDRs are distributed according to a specific capital key, a new global currency could be created based on the amount of carbon sequestered. Such a 'carbon coin' would provide an economic incentive to leave fossil fuels in the ground and preserve and restore forests.

A commodity-backed currency is nothing new, as throughout most of human history currencies have been backed by predominantly gold or silver. Including the dollar until the early 1970s, the global reserve currency after World War 2. The key difference being that the commodity backing the currency here is not gold, but rather a natural stock of some sort, or the remaining carbon budget. Such carbon coins might be issued by a monetary authority for one ton of carbon dioxide credibly mitigated for a set number of years.

This way a new global reserve currency can emerge. This not only has environmental benefits but also answers a growing call to bring more balance into the now unipolar global monetary system — a call coming clearly from the large emerging BRICS economies. Most recent Brazilian president Lula called for an alternative currency to be used by the countries in this informal block, in seeking more independence from the US dollar and Fed's monetary policy (Savage, 2023). This call echoes earlier calls from China (Zhou, 2009). Similar calls have been voiced by Western central bankers such Mark Carney, then head of the Bank of England (Carney, 2019) and the UN Expert commission on the Reform of the International Monetary System (Stiglitz, 2010). Various designs for a global carbon coin have been proposed (Chen, 2021; van Gansbeke, 2021).

Conclusion

The measures described in this section are by no means easy measures. Some have been debated for decades and will have profound geopolitical consequences. Old powers need to give room. However, not doing so would also have grave consequences. The global common goods of a stable climate, a healthy nature and a world free of poverty, each are indispensable for humanity. Only if we all work together will we be able to safeguard our common goods. It is time to repair the global financial architecture, to make it fit for purpose and so ensure it will bring us the climate trillions we need.

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