Mobilising a Trillion Dollars for Climate Mitigation in Poor Countries:

A Proposal for a New Finance Facility against Climate Change

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April 2024

Centre for Sustainable Finance

SOAS University of London

Suggested citation

Kraemer, Moritz and Ulrich Volz (2024), *Mobilising A Trillion Dollars for Climate Mitigation in Poor Countries: A Proposal for a New Finance Facility against Climate Change*, London: Centre for Sustainable Finance, SOAS, University of London.

Free download

https://doi.org/10.25501/SOAS.00041709

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Network for Strengthening Macrofinancial Resilience to Climate and Environmental Change, co-chair of the Global Research Alliance for Sustainable Finance and Investment, co-chair of the T20 Brazil Task Force on Reforming the International Financial Architecture, and a member of the CEPR Sustainable Finance Research and Policy Network. Ulrich was appointed by the Brazilian G20 Presidency to the Group of Experts of the G20 Taskforce on a Global Mobilization against Climate Change (TF-CLIMA). He also serves on the Sustainable Finance Advisory Committee of the German Federal Government, the Economic Advisory Network of the German Federal Ministry for Economic Cooperation and Development, the advisory panel of the Glasgow Financial Alliance for Net Zero (GFANZ), the International Advisory Committee for the Climate/SDGs Debt Swap Mechanism of the UN Economic and Social Commission for Western Asia (UN ESCWA), and the Alliance for Financial Inclusion's Research Advisory Council for Inclusive Green Finance. Ulrich was Banque de France Chair at the École des Hautes Études en Sciences Sociales (EHESS) in Paris, and taught at Peking University, Kobe University, Hertie School of Governance, Freie Universität Berlin, Central University of Finance and Economics, and the Institute of Developing Economies (IDE-JETRO). He spent stints working at the European Central Bank and European Bank for Reconstruction and Development and held visiting positions at the University of Oxford, University of Birmingham, Aoyama Gakuin University, ECB, Bank Indonesia, Bank Negara Malaysia and the Asian Development Bank Institute, where he previously served on the Advisory Council. Ulrich was part of the UN Inquiry into the Design of a Sustainable Financial System and a member of the NGFS-INSPIRE Study Group on Biodiversity and Financial Stability. He has acted as an advisor to several governments, central banks, international organisations and development agencies on matters of macroeconomic policy, climate risk and sustainable finance, and financial sector development. Ulrich holds a PhD from Freie Universität Berlin and was a Fox International Fellow and Max Kade Scholar at Yale University.

Abbreviations

CBAM	Climate border adjustment mechanism
CO_2	Carbon dioxide
COP28	2023 United Nations Climate Change Conference or Conference of the Parties of the United Nations Framework Convention on Climate Change
EU	European Union
F2C2	Finance Facility against Climate Change
GDP	Gross domestic product
IDA	International Development Association
IFFIm	International Finance Facility for Immunisation
IMF	International Monetary Fund
LICs	Low-income countries
LMICs	Lower-middle-income countries
NDCs	Nationally Determined Contributions
NGEU	NextGenerationEU
ODA	Official development assistance
UK	United Kingdom

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Executive summary

Many developing countries are struggling under a high sovereign debt burden and rising interest rates that leave little fiscal space to meet their Nationally Determined Contributions under the Paris Climate Accord.

While the 80 economies designated by the World Bank as low-income countries (LICs) or lower-middle-income countries (LMICs) – home to over half the world population – were contributing just a little bit more than 17 percent of total world carbon emissions in 2021, and much less in terms of historical emissions, global population growth will be entirely driven by these countries in the coming decades. Their future contribution to global emissions is set to grow substantially if we do not lay the foundations for low-carbon development pathways now.

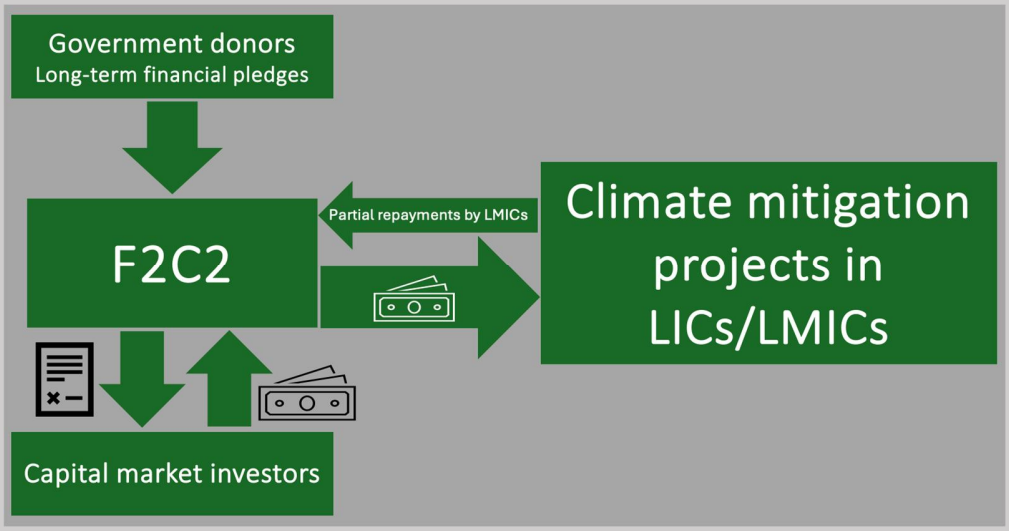
If poor countries were to embark on a fossil-fuelled growth process along the lines of the high-income countries, the globally available carbon budget would soon be fully consumed. Poorer countries must therefore be enabled to make the necessary investments to not only lift their people out of poverty, but doing so in a way that is compatible with global climate aspirations.

To enable these countries to invest in climate mitigation, this report proposes the establishment of a Finance Facility against Climate Change (F2C2) that would raise $1 trillion – around a fifth of the total estimated cost of financing the Nationally Determined Contributions (NDCs) for the 80 LICs and LMICs that would be eligible to receive funding from F2C2. The facility would mobilise funding with a substantial grant element through the issuance of green bonds earmarked for emission reduction programmes in the eighty countries classified by the World Bank as low-income or lower-middle-income.

The F2C2 bonds would be backed by rich nations' future commitments of official development assistance, which cover the green bonds' debt service

obligations. This would allow the necessary frontloading of climate spending in poor countries, while minimising the short-term impact on donor countries' stressed budgets.

Figure E1: Finance Facility against Climate Change



Source: Compiled by authors.

F2C2 would emulate the successful example of the International Finance Facility for Immunisation (IFFIm), which was established in 2006 to raise funds through the issuance of vaccine bonds earmarked for immunisation programmes in poor countries. As in the case of IFFIm, F2C2's green bond issuances could be managed by the World Bank, but on a much larger scale.

We envisage an annual issuance of $100 billion of F2C2 bonds over the next decade, providing a liquid market. This period reflects the limited absorption capacity of receiving countries. Of the $1 trillion raised through F2C2, a minimum of $100 billion would be reserved for LICs.

F2C2 bonds would be structured to reflect the different stages of development of recipient countries. LICs will receive the funds as grants with no cofinancing requirement. LMICs would be expected to provide a 10 percent cofinancing contribution, but also receive highly concessionary conditions by applying a 50 percent "discount" on the most concessionary terms currently offered by the World Bank's International Development Association, with a repayment period of 50 years including a ten-year grace period. This would result in a very low net present value of the recipient LMICs' payment obligation with annual principal repayment of 1.25 percent of the total from year 11 to 50. F2C2 would be expected to enjoy preferred creditor status for the partial principal payments LMICs will have to make after the grace period lapses.

Within the LMIC and LIC buckets (up to $900 million and at least $100 million, respectively) allotment will come at a first come, first served basis for qualifying NDC-projects of eligible countries. This will provide an incentive for advancing project preparation and implementation as recipient countries will aim to receive as large a slice of the F2C2 grants and subsidies as possible, as delays could lead to F2C2 funds running out. To support poor countries in developing F2C2-eligible projects, accompanying technical assistance should be provided by international development cooperation to ensure a growing project pipeline and effective implementation.

In order to prevent that a few better prepared countries absorb a disproportionate share of the financial support afforded by F2C2, we propose a country-specific limit of two times of an LMIC's share in the joint LIC/LMIC GDP in 2023. For LICs, this limit would be higher, at five times its individual share in joint GDP.

As demonstrated through their past practice in the case of IFFIm and NextGenerationEU, the rating agencies will treat the commitments of donor countries to support F2C2 on par with the full faith and credit of the

sovereigns making that promise. As a result, F2C2 bonds will carry ratings in the AA or even AAA range. The exact rating will depend on the size and composition of rich countries' commitments for future funding and possible overcollateralisation of pledges.

F2C2 will make it possible to generate the funds necessary for frontloading climate mitigation investments in poor countries where emissions are otherwise poised to rise very quickly in the coming decades. Using this tried and tested concept of financial engineering to fund climate investments in the Global South sidesteps the challenges that come about by currently tight fiscal positions in donor and recipient countries alike.

F2C2 effectively pushes the financial burden of fighting climate change to future generations of rich-country taxpayers. We consider this fair as they would be among the main beneficiaries if we were able to arrest global warming. But whatever our sense of intergenerational fairness may be, there are no good alternatives that would permit poor countries' climate investments on the necessary scale. We need to use all practical solutions at our disposal and F2C2 is such a financial solution. As the Paris climate objectives start to slip from our grasp, time is of the essence. We cannot afford to wait until public finances miraculously improve in rich and poor countries alike.

Confronting climate change has become a make-or-break priority requiring decisive collective action. F2C2 provides a framework that brings us closer towards securing a viable future.

The point of departure: Insufficient climate finance for poorer countries

The COP28 climate summit in Dubai made some progress on several fronts when it comes to international cooperation to combat climate change. Most of the attention was drawn to the first explicit mentioning of the need to exit fossil fuels in the path to a sustainable planet. While well overdue, this statement deserves praise, even if we recognise that making it happen will be immeasurably harder than agreeing on a few lines in a communiqué. And even the latter was already not easy at all.

Where Dubai also made progress is the commitment of funds to poorer countries to support their own efforts to contribute to a global climate strategy. A significant amount of financing commitments was made at COP 28 including nearly $800 million for the new Loss and Damage Fund for vulnerable countries and an array of new multilateral and national vehicles and other platforms. COP28 also mobilised $3.5 billion to replenish the Green Climate Fund (increasing the second replenishment to a $12.8 billion total) and almost $188 million toward the Adaptation Fund. The summit also saw the emergence of the world's largest private market climate investment fund with $30 billion (COP28 UAE 2023).

Despite progress on these fronts, substantial gaps remain especially in financial support for developing countries to progress new finance for adaptation and make the transition away from fossil fuels and achieve their Nationally Determined Contributions (NDCs). The Climate Policy Initiative estimates that African countries alone require $277 billion dollars annually to implement their NDCs and meet their 2030 climate goals – almost ten times the current amount of climate finance for Africa, which stands at $30 billion (Meattle 2022).

Even worse, a debt crisis looms in the Global South as interest rates have risen and the medium-term global growth outlook is the weakest in

decades. In this context, international private finance will not fill the investment gap. Cash-strapped developing countries will fail to meet their NDCs under the Paris Climate Accord (Zucker-Marques et al. 2024). Given many pressing and immediate social needs, it would be naïve to expect that poor nations will be able to meaningfully contribute to mitigating an impending climate disaster, which was fundamentally caused by much richer countries.

In this report, we propose the establishment of a Finance Facility against Climate Change (F2C2) that would raise $1 trillion. The facility would mobilise grant funding through the issuance of green bonds earmarked for emission reduction programmes in the eighty countries classified by the World Bank as low-income or lower-middle-income. The bonds would be backed by rich nations' future commitments of official development assistance, which cover the green bonds' debt service obligations. This would allow the necessary frontloading of climate spending in poor countries, while minimising the short-term impact on donor countries' stressed budgets.

The report is structured as follows. We first highlight the urgent need for supporting poor countries to invest in climate mitigation and allow them to lay the foundations for low-carbon development pathways. We subsequently make the case for frontloading climate investment in poor countries, followed by our proposal to establish F2C2 to raise funding for climate mitigation in these countries, considerations regarding the treatment of green bonds issued by F2C2 by credit rating agencies, and calculations regarding the sizing of F2C2. The final section concludes.

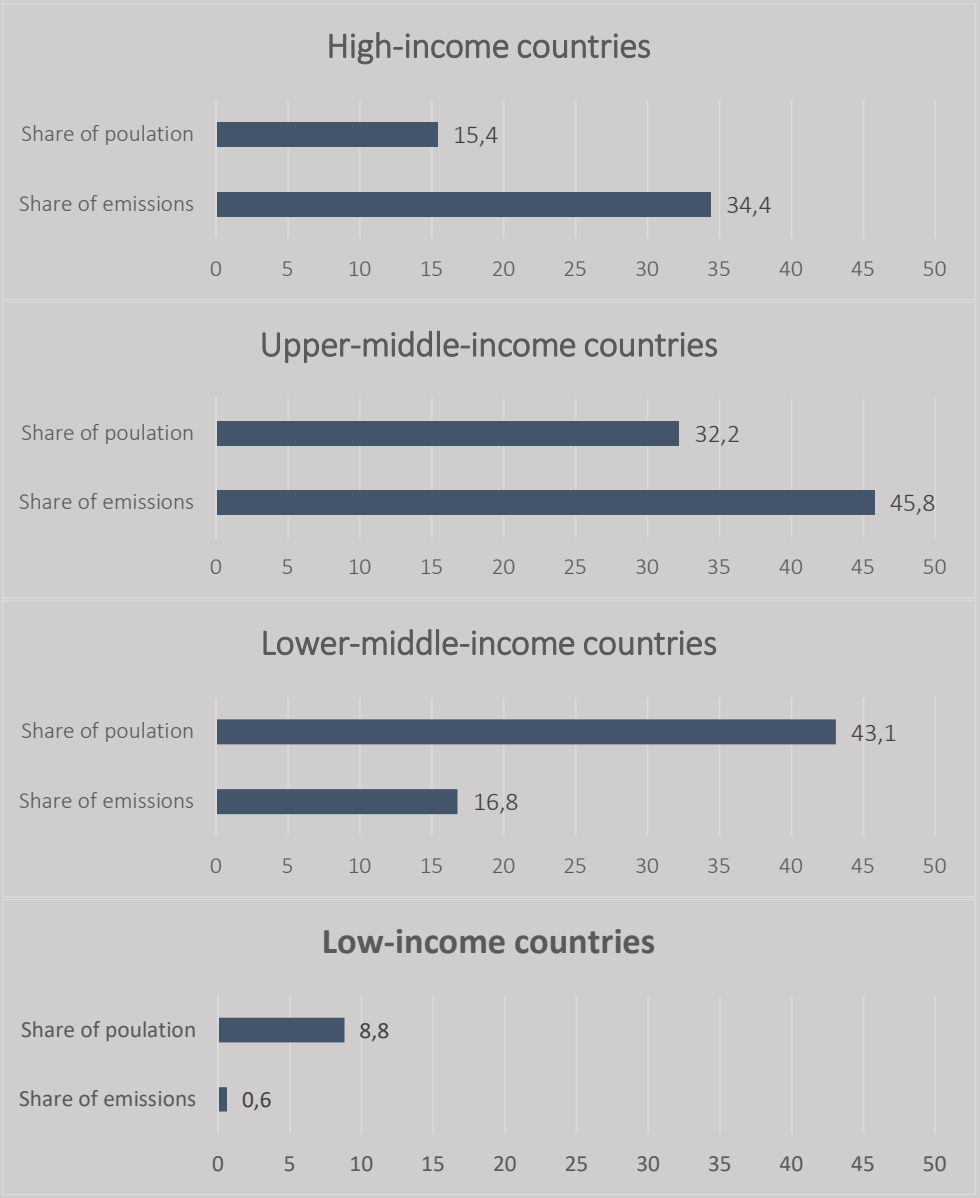
Climate finance for low-income countries gradually becomes a priority

For the time being, the 80 economies designated by the World Bank as low-income countries (LIC) or lower-middle-income countries (LMIC) (cf. Annex 1) – home to just over half the world population – were contributing in 2021 just a little bit more than 17 percent of total world carbon dioxide (CO_2) emissions (Figure 1, Ritchie 2023). This gap is particularly stark for LICs where 8.8 percent of the world's population accounted for a mere 0.6 percent of emissions. One might therefore be tempted to dismiss climate mitigation in poor countries as a negligible side-show. But that would be a mistake.

Over the coming decades, global population growth will be entirely driven by LICs and LMICs, which are expected to add a billion people to the world population by around 2037 and another billion by 2058 (Zeifman et al. 2022). Their future contribution to global emissions is set to grow substantially if we do not lay the foundations for low-carbon development pathways now. If poor countries were to embark on a fossil-fuelled growth process along the lines of the high-income countries, the globally available carbon budget would soon be fully consumed. Poorer countries must therefore be enabled to make the necessary investments to not only lift their people out of poverty, but doing so in a way that is compatible with global climate aspirations.

To be clear: limiting global warming to 1.5 degrees Celsius compared to pre-industrial levels (or whatever degree of warming below 2 degrees Celsius that is still achievable) depends first and foremost on more systemically relevant countries taking appropriate actions in line with the principle of common but differentiated responsibilities. And for poor countries, adaptation to climate change tends to be a more immediate concern than mitigation.

Figure 1: Share of global CO_2 emissions and population (in percent), 2021



Note: CO_2 emissions from fossil fuels and industry. Land-use change is not included.

Source: Compiled with data from OurWorldinData (Ritchie 2023).

But to limit future emissions and build competitive economies, it is critical that they can achieve the often-ambitious emission-reduction targets they have set themselves in their nationally determined contributions. The pressing investment needs in low-carbon, resilient infrastructure of poorer countries will not be met by private international capital, which has largely bypassed poorer countries and gone into economies, which offer more commercially viable opportunities on a broader scale.

The case for frontloading climate investment in poor countries

Climate mitigation in poor countries matters not only for the global climate – for which every ton of carbon that is not emitted into the atmosphere helps – it matters also greatly for the competitiveness of these economies. At a time when the European Union – the world's largest trading block – introduces a climate border adjustment mechanism (CBAM), a countries' emissions profile has a direct impact on its trade competitiveness. Moreover, if poor countries continue investing in fossil infrastructure now because they cannot afford the high upfront cost of renewable energy investment, this is creating lock-in effects and enhances the risk of future stranded assets.

Renewable energy has high up-front investment cost compared to conventional sources of energy. But once in place, ongoing costs for fuel or maintenance are low. It is because of this heavily front-loaded investment cost that the rich world needs to financially support poorer countries to make more progress on both climate adaptation and mitigation. Unfortunately, and despite the progress made in Dubai, the political will to increase international climate finance at sufficient scale is still lacking in rich countries, despite the rhetoric.

This is partly because their budget positions are still weak after the extraordinary outlays triggered by the pandemic and the last year's energy crisis. Yet, waiting for rich countries' budgets to come whole again is not an option. This is because in battling climate change, the profile of emissions reductions is more important than much touted 'net zero' dates. Greenhouse gases linger in the atmosphere for decades. What really matters is the long-term stock of greenhouse gases in the atmosphere. A tonne of CO_2 emitted today will contribute more to global heating that a tonne emitted in 2040. Accordingly, aggressively frontloading emissions reduction emissions is of the essence (Fankhauser et al. 2022).

F2C2: How to mobilise the necessary funds

It can be done. The G20 should establish a new Finance Facility against Climate Change (F2C2) to raise funding to finance climate mitigation in poor countries. F2C2 bonds would by definition be green bonds, as they will be earmarked for investments to reduce greenhouse gas emissions.

F2C2 would emulate the successful example of the International Finance Facility for Immunisation (IFFIm). Since 2006, IFFIm operates based on the idea that private investors and government donors can work together to have a greater, more immediate impact on global health (Figure 2). Funds raised through IFFIm's vaccine bond issuance are earmarked for immunisation programmes in poor countries conducted by Gavi, the Vaccine Alliance.[1] Like emissions reduction, vaccinations are a common good where frontloading is the precondition for collective success.

[1] Gavi, the Vaccine Alliance is a global public-private health partnership that was established in 2000 as the Global Alliance for Vaccines and Immunisation with the goal of increasing access to immunisation in poor countries.

Figure 2: The International Finance Facility for Immunisation (IFFIm)

Source: IFFIm (2024a).

The financial management of F2C2's green bonds could be managed by the World Bank, the only truly global development institution. In fact, it already runs the treasury operations for IFFIm. F2C2 bonds can simply follow IFFIm's successful blueprint, but on a much larger scale. Effectively, the bonds are backed by rich nations' commitments of future disbursements of official development assistance (ODA) to cover debt service obligations of the F2C2 bonds. This allows the necessary frontloading of climate spending in poor countries, while minimising the short-term impact on donor countries' stretched budgets.

In line with current practices by multilateral development banks, F2C2 bonds can be structured to reflect the different stages of development of recipient countries.

- Low-income countries: In order to incentivise the pick-up of the climate mitigation funding made available through the F2C2 mechanism, LICs will receive the funds as grants with no cofinancing requirement. This

exceptionally high degree of concessionality reflects the global public good character of the investment as well as their long-term impact.

- Lower middle-income countries: LMICs would be expected to provide a 10 percent cofinancing contribution, but also receive highly concessionary conditions. Interest will be covered by donors' pledges to F2C2. LMICs' principal repayment is to occur by applying a 50 percent "discount" on the most concessionary terms currently offered by the World Bank's International Development Association (IDA) (World Bank 2024a). Under those terms, the repayment period is 50 years, reflecting the long-term nature of the climate mitigation investment, with a ten-year grace period. This results in an annual principal repayment of 2.5 percent of the total from year 11 to 50. Applying the 50 percent "discount", LMICs' instalments will accordingly only be 1.25 percent annually. They will thus repay only half the principal over a very long period and without any interest at all. This schedule leads to a very low net present value of the recipient countries' payment obligation. F2C2 would be expected to enjoy preferred creditor status for the partial principal payments LMICs will have to make after the grace period lapses.

F2C2 bonds will receive very high credit ratings

The rating agencies will treat the commitments to support F2C2 on par with the full faith and credit of the sovereigns making that promise. As a result, F2C2 bonds will carry ratings in the AA or even AAA range. The exact rating will depend on the size and composition of rich countries' commitments for future funding. The rating will also depend on a possible degree of overcollateralisation, where rich countries' pledged ODA

commitments surpass the face value of F2C2's cumulative debt service obligation.

We know the way rating agencies will analyse F2C2, because that is how they have rated securities issued by IFFIm (IFFIm 2023) and, on a much larger scale, also by assigning AAA ratings to vast amounts of NextGenerationEU (NGEU) bonds (AA+ for S&P Global Ratings). The EU's NGEU bonds are fundamentally supported only by EU member states' promises to make payments many years down the road to cover the debt service of the bonds issued by the EU. The top-notch AAA rating on the EU bonds indicates that the rating agencies are putting a lot of store in promises of rich countries' governments. At AAA, the bonds are rated even higher than the weighted average of the ratings of member states' governments. Since the promises are not enforceable guarantees, let alone joint and several ones, and since no cross-default clauses exist with the sovereign bonds of EU member states, the rating agencies do believe that there is a strong element of solidarity across those governments making the promises. Should one or several member states not be able or willing to make the promised payment to the EU budget to support the debt service, others would step in. The assumed likelihood of members collectively falling short is low. It is in fact extremely low. In financial market parlance, it is considered to be 'AAA-remote'. That means its occurrence should be as unlikely as a AAA issuer defaulting, which, according to Moody's, a rating agency, is about 0.1 percent (Moody's 2019).

The same rating agency generosity is not afforded to IFFIm. Its ratings are slightly lower at AA- (Fitch Ratings), AA (S&P Global Ratings), and Aa1 (Moody's Investor Service) (IFFIm 2024). These different ratings are a direct reflection of the sovereign rating of the United Kingdom (UK), IFFIm's by far most important donor, responsible for 44 percent of pledges). Thus, IFFIm's ratings are between one to three notches below NGEU's AAA, on a 23-rung ratings scale. In terms of historical default

probabilities, the AAA and AA-categories are almost indistinguishable. Bottom line: they are extremely safe assets.

Arguably, the ties that bind EU members states together are more solid and enduring than the ties created by ad-hoc institutions like IFFIm, or, indeed, F2C2. But we do have a clear and unwavering interpretation by all three agencies that the commitments made under IFFIm are ranked pari-passu with the guarantors' sovereign obligations. Moody's (2021, p.3) for example states that due to "the legally binding and enforceable payment obligations […] we consider these donor obligations as analogous to capital contributions." In plain English, it says that the likelihood of the government of, say, France, of not living up to its IFFIm commitment is identical to the likelihood of France defaulting on its government bonds. This shows that governments can effectively signal to capital markets that their financial commitments can be relied upon.

But it is not only the creditworthiness of the pledges from donor countries that uphold the ratings of IFFIm, and would, by extension support those of F2C2. The involvement of the AAA-rated International Bank for Reconstruction and Development ("World Bank") providing robust treasury and risk management operations is also important. Moody's (2021, p.1) explicitly states that the World Bank "has ample flexibility to adjust leverage and disbursements in the event of negative rating actions on its largest donors, the UK and France".

Whether or not this trust is warranted is not the question here. The point is rather that these examples demonstrate that it is possible to accelerate critical investment activities by issuing financial instruments which are supported solely by trust in the words of governments with strong institutions, credit ratings and developed governance standards. In fact, the link to guarantor governments is so direct that IFFIm's rating moves in lockstep with that of the UK, its by far most important donor.

The IFFIm blueprint exposes one additional wrinkle that might negatively impact creditworthiness. Donors may restrict their pledged payments, if eligible countries receiving funding fall into protracted arrears (defined as longer than six months) with the International Monetary Fund (IMF) (S&P Global Ratings 2023). This happens very rarely and since mid-2021, when Sudan cleared its arrears with the Fund, no member government is behind its payment obligations to the IMF (IMF 2023). This is where the World Bank's Treasury expertise could provide support to overcome potential liquidity constraints. And while an increasing number of low-income countries are classified at in debt distress or close to it, the IMF is generally accepted to be the most senior creditor. That means that defaults towards the IMF are extremely rare, whereas sovereign defaults do happen much more frequently. Accordingly, the rating agencies have so far considered this risk as negligible.

As of April 2024, there were no delays in payments of donors' pledges to IFFIm. There is no reason to assume that agencies, investors, or governments would consider F2C2 any less solid than IFFIm, if it were conceptually similarly designed. On the contrary. Greenhouse gas emissions anywhere in the world have clear and direct spillover effects, adding to climate change in rich and poor countries alike. Out of self-interest alone, rich countries' governments can be counted on putting even stronger support for efforts in poor countries fighting carbon emissions than the spread of locally contained diseases. Chances are that a larger sample of donors would be participating in F2C2, thereby reducing the concentration risk existing in IFFIm, whereas for IFFIm the top-3 donors (UK, Norway and France) account for 75 percent of all pledges.

Sizing the F2C2 issuance

What amounts are at play for F2C2-issuance? We analysed the available estimated implementation cost of the NDCs of 57 LICs and LMICs for which data was available (UNFCC, 2023, complemented by Climate Watch, 2023). The numbers reported by governments, also as a share of gross domestic product (GDP), are patchy and vary widely. We therefore use the median cost of NDC implementation as a percentage of GDP rather than the average share, so as to minimise the impact of outliers. The median estimated NDC implementation cost of this subsample of 57 countries stands at 58 percent of GDP (see Annex 2). When this median percentage is applied to the total GDP of the 80 LICs and LMICs (which stood at $8.7 trillion in 2022), the total cost of NDCs would amount to around $5 trillion. LICs' combined GDP amounted to $530 billion, or 6 percent of the combined total GDP of LIC and LMICs. The estimated cost of NDCs in LICs therefore amounts to $300 billion (or 6 percent of the total).

We expect that only a minority of the required investments are shovel-ready projects – many may be more long-term aspirational rather than short-term practical. And we also consider that over time poor country's contributions should increase as their levels of development rises. This will also help to foster local ownership of the mitigation investments, improving the chances of successful implementation. At this stage we propose to cap F2C2 at $1 trillion – 20 percent of the total estimated NDC cost of $5 trillion for the 80 eligible countries. Of these $1 trillion, a minimum of $100 billion should be reserved for LICs, which is slightly higher than their 6 percent share in GDP, reflecting their weaker alternative funding opportunities, but also their somewhat higher mitigation and adaptation costs as a share of GDP (see Annex 2).

Within the LMIC and LIC buckets (up to $900 million and at least $100 million, respectively) allotment will come at a first come, first served basis for qualifying NDC-projects of eligible countries. This procedure will

provide a further incentive for frontloading of project preparation and implementation as recipient countries will aim to receive a slice of the F2C2 grants and subsidies and delays could lead to F2C2 funds running out. To support poor countries in developing F2C2-eligible projects, accompanying technical assistance should be provided by international development cooperation to ensure a growing project pipeline and effective implementation.

In order to prevent that a few better prepared countries absorb a disproportionate share of the financial support afforded by F2C2, we furthermore propose a country-specific limit of two times of an LMIC's share in the joint LIC/LMIC GDP in 2023. For LICs, this limit would be higher, at five times its individual share in joint GDP. For example, the GDP of Nigeria, an LMIC, stood at $477 billion in 2022. This is 6 percent of the joint GDP of LICs and LMICs combined. With a limit of two times its GDP share, Nigeria could thus draw on a maximum of 12 percent of resources mobilised by F2C2, or $120 billion. Rwanda, a LIC with a GDP of $13 billion (or 0.2 percent of LIC/LMIC GDP), could tap F2C2 with eligible projects of up to a maximum of $10 billion (equivalent to five times its 0.2 percent GDP share).

The proposed size of F2C2 of $1 trillion is a very large. Still, it is only a little more than the €807 billion (or $870 billion) of the commitments made by EU members alone for the NextGenerationEU (NGEU) recovery programme. The total F2C2 issuance of $1 trillion, the repayment of which will be spread over decades, amounts to a mere tenth of global annual sovereign borrowing (estimated at $11.5 trillion in 2024), and less than 1.5 percent of the total commercial sovereign debt stock, estimated at over $71 trillion in 2024 (S&P Global Ratings, 2024).

The implementation period could be spread over ten years. This period reflects the limited absorption capacity of receiving countries. In other words, an average of up to $100 billion a year could be issued by F2C2

green bonds, providing a liquid market. The repayment period will be stretched over fifty years, as described above. If the repayment were to stretch from 2030 to 2080, this would equate to an average annual repayment of $20 billion. This would be equivalent to just less than 10 percent of the official development aid provided by donors in 2022 alone ($211 billion, OECD 2023).

In fact, the amounts that donors will need to mobilise are likely to be smaller still, as some of the repayments will be made by recipient countries in the LMIC category, as outlined above. The annual amounts that donor countries would have to provide during the repayment period are therefore manageable and should not constitute an undue burden on donors' budgets. Even less so, as not all of the funds would be additional. It is fair to assume that at least some climate mitigation investments funded by donors would have been taken place even in the absence of F2C2. But what the facility would do is to leverage private funds and therefore allow an acceleration of climate investments.

F2C2 issuance will be snapped up by investors eager to fill their books with truly green and highly rated financial instruments. Investors with more demanding sustainability ambitions often prefer the green bonds from official multilateral issuers as they deem greenwashing risks less likely to emerge in such organisations with strong governance standards. The bonds issued by F2C2 would, by definition, be allocated 100 percent to green investments in emissions reductions.

Conclusion: Efficiency and fairness

F2C2 green bond issuance will make it possible to generate the funds necessary for frontloading climate mitigation investments in poor countries where emissions are otherwise poised to rise very quickly in the coming decades. Using this tried and tested piece of financial engineering

to fund climate investments in the Global South sidesteps the challenges that come about by currently tight fiscal positions in donor and recipient countries alike.

It is true that F2C2 will push the financial burden of fighting climate change to future generations of rich-country taxpayers. We consider this fair as they would be among the main beneficiaries if we were able to arrest global warming. It is also justifiable because rich countries have, since the onset of the industrial revolution, emitted the lion's share of greenhouse gases that are still floating around in the atmosphere.

But whatever our sense of intergenerational fairness may be, there are few good alternatives, and we need to use all practical solutions at our disposal. As the Paris climate objectives start to slip from our grasp, time is of the essence. We cannot afford to wait until public finances miraculously improve in rich and poor countries alike.

Confronting climate change has become a make-or-break priority requiring decisive collective action. F2C2 provides a framework that brings us closer towards securing a viable future.

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Annex

Annex 1: List of low-income and lower-middle income economies according to World Bank country classification, 2024

Low-income economies ($1,135 or less)	Lower-middle income economies ($1,136 to $4,465)	
Afghanistan	Angola	Lesotho
Burkina Faso	Algeria	Mauritania
Burundi	Bangladesh	Micronesia, Fed. Sts.
Central African Republic	Benin	Mongolia
Chad	Bhutan	Morocco
Congo, Dem. Rep	Bolivia	Myanmar
Eritrea	Cabo Verde	Nepal
Ethiopia	Cambodia	Nicaragua
Gambia, The	Cameroon	Nigeria
Guinea-Bissau	Comoros	Pakistan
Korea, Dem. People's Rep	Congo, Rep.	Papua New Guinea
Liberia	Côte d'Ivoire	Philippines
Madagascar	Djibouti	Samoa
Malawi	Egypt, Arab Rep.	São Tomé and Principe
Mali	Eswatini	Senegal
Mozambique	Ghana	Solomon Islands
Niger	Guinea	Sri Lanka
Rwanda	Haiti	Tanzania
Sierra Leone	Honduras	Tajikistan
Somalia	Jordan	Timor-Leste
South Sudan	India	Tunisia
Sudan	Iran, Islamic Rep	Ukraine
Syrian Arab Republic	Kenya	Uzbekistan
Togo	Kiribati	Vanuatu
Uganda	Kyrgyz Republic	Vietnam
Yemen, Rep.	Lao PDR	Zambia
	Lebanon	Zimbabwe

Source: World Bank (2024b).

Annex 2: Current GDP, total estimated cost of NDC, and cost of NDC/GDP

Countries	World Bank country classification	Current GDP 2022 (in billion USD)	Total estimated cost of NDC (in billion USD)	Cost of NDC/GDP (in percent)
Afghanistan	LIC	14.9	17.4	116
Burkina Faso	LIC	20.8	4.1	20
Burundi	LIC	3.2	1.5	45
Cameroon	LIC	49.3	57.6	117
Central Africa Republic	LIC	2.8	1.8	64
Chad	LIC	12.6	21.2	168
Congo, DR	LIC	67.5	48.7	72
Eritrea	LIC	2.0	5.8	292
Ethiopia	LIC	155.8	316.0	203
Gambia, The	LIC	2.4	0.4	17
Guinea-Bissau	LIC	2.0	0.7	37
Liberia	LIC	4.4	0.5	11
Madagascar	LIC	15.8	42.1	267
Malawi	LIC	13.2	46.3	351
Mali	LIC	21.3	12.3	58
Mozambique	LIC	21.9	7.6	35
Niger	LIC	17.1	9.9	58
Rwanda	LIC	13.9	11.0	79
Sierra Leone	LIC	3.5	2.7	77
Somalia	LIC	11.5	55.5	481
South Sudan	LIC	6.3	10.7	171
Sudan	LIC	25.6	8.2	32
Togo	LIC	9.1	5.5	60
Uganda	LIC	52.4	28.0	53
Median LICs		**13.6**	**10.3**	**68**
Sum LICs		**549**	**716**	
Bangladesh	LMIC	446.4	176.0	39
Benin	LMIC	19.9	10.5	53
Bhutan	LMIC	2.7	3.5	131
Cambodia	LMIC	30.9	7.8	25
Cabo Verde	LMIC	2.6	2.4	91
Comoros	LMIC	1.4	1.3	96
Congo, Republic of	LMIC	14.4	4.4	31
Cote d'Ivoire	LMIC	79.4	22.0	28
Djibouti	LMIC	3.9	6.3	164
Dominica	LMIC	0.3	1.2	390
Ghana	LMIC	76.6	9.3	12
Grenada	LMIC	1.3	1.1	80
Guinea	LMIC	23.2	15.7	68
Guyana	LMIC	16.3	1.6	10
Haiti	LMIC	26.0	25.4	98

Annex 2 continued				
Kenya	LMIC	112.8	61.7	55
Kyrgyz Republic	LMIC	12.7	10.0	79
Lao P.D.R	LMIC	14.2	4.8	33
Lesotho	LMIC	2.4	0.6	25
Mauritania	LMIC	10.4	44.9	433
Micronesia	LMIC	0.5	0.8	170
Moldova	LMIC	16.0	9.2	58
Myanmar	LMIC	74.9	1.2	2
Nepal	LMIC	41.3	28.4	69
Nicaragua	LMIC	17.4	1.7	10
Papua New Guinea	LMIC	31.7	2.0	6
São Tomé and Príncipe	LMIC	0.7	0.2	22
Senegal	LMIC	31.1	13.0	42
Solomon Islands	LMIC	1.7	1.4	81
St. Lucia	LMIC	2.5	0.4	15
Tanzania	LMIC	84.0	19.2	23
Vanuatu	LMIC	1.2	1.0	89
Zimbabwe	LMIC	32.4	4.8	15
Median LMICs		**16.0**	**4.8**	**53**
Sum LMICs		**1,233**	**494**	
Median LICs and LMICs		**14.4**	**7.6**	**58**
Sum LICS und LMICs		**1,782**	**1,209**	

Source: Compiled with data from the World Bank (country classifications, current GDP) and UNFCC (2023) complemented by Climate Watch (2023) (estimated implementation cost of the NDCs).