

Task Force 1: Development and Economic Prosperity



Toward Accelerating Climate Finance: Forging a New Partnership between the Global South and the Global North

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Abstract

Economywide decarbonization is essential for achieving the climate goals set in the Paris Agreement. This will require deploying and scaling up green infrastructure and technologies. While finance flows toward climate action—both mitigation and adaptation—have been increasing, the rate of increase has been much slower compared to the rate of growth of required investment, leading to a growing climate finance gap. Emerging market and developing economies (EMDEs) and least developed countries (LDCs), in particular, have seen significant gaps in both mitigation and adaptation. Further, in a majority of developing countries, public finances are strained, inflation is high, and debt is mounting due to the pandemic and volatile geopolitical conditions. This compounds the problem, especially in light of the fact that EMDEs and LDCs will witness rapid growth and need increased investments. The policy brief looks at ways to address this gap and the role of Group of Seven countries in supporting this journey.

Background

The Paris Agreement set an ambitious target of keeping the global temperature rise at “well below 2 degrees, preferably 1.5 degrees Celsius” above pre-industrial levels. A Climate Policy Initiative (CPI) report (Naran et al. 2022) estimates that to do so, at least \$4.3 trillion is required annually by 2030 (compound annual growth rate of 21%). The last decade (2011–2020) saw a near doubling of climate finance with cumulative flows totaling \$4.8 trillion. However, this is insufficient to meet a 1.5C global warming target. The report suggests that private investment is increasing but not at the scale necessary for this transition. It is, therefore, necessary to identify new ways to leverage public capital to crowd in greater private investments.

To reach the climate goals set in the Paris Agreement, economy-wide decarbonization is essential. This will require deploying and scaling up green infrastructure and technologies. The Organisation for Economic Co-operation and Development (OECD) estimates that \$6.9 trillion is needed annually up to 2050 for investment in infrastructure to meet development goals as well as transition to a low-carbon and climate-resilient future (OECD, 2018). Similarly, there is a significant shortfall in financing for adapting to climate change, with annual adaptation needs estimated between \$160 billion and \$340 billion by 2030, and up to \$565 billion by 2050. Emerging market and developing economies (EMDEs) and least developed countries (LDCs), in particular, have seen significant adaptation financing gaps (UNEP, 2022). These challenges will need to be addressed for finance flows to increase to developing economies.

A large part of this investment will need to be directed toward EMDEs, which are likely to see the highest growth in demand for infrastructure and services. Currently, in a majority of developing countries, public finances are strained, inflation is high, and debt is mounting due to the pandemic and volatile geopolitical conditions. Additionally, the bulk of international investments is currently being directed at advanced economies and the People’s Republic of China because of the high cost of capital in EMDE economies. The high cost of capital is generally attributed to the higher perceived risk associated with EDMs. This makes it difficult for EMDEs to meet their climate financing needs.

For climate investments to scale in EMDEs, crowding-in of additional private capital is important. This can be done through de-risking instruments and blending public or philanthropic capital with non-concessional private capital.

Blended finance approaches can play a pivotal role in increasing the flows of private climate finance. According to a report by Convergence (2022a), even though climate change has accounted for about 50% of the annual deals involving blended finance since 2011, the total amount invested in the period 2019–2021 fell by almost 50% to a mere \$14 billion vis-à-vis the amount invested in the period 2016–2018.

Three key challenges are preventing blended finance from mobilizing finance on the scale needed in LDCs—lack of participation of investors, lack of strategic focus, and inefficient catalytic use of public capital. The underlying issue of balancing return expectations against the risk appetite of investors continues to hamper the adoption of blended finance toward climate-oriented investments. With the increased focus on and need for climate finance, the Group of Seven (G7) can play a pivotal role in increasing climate finance flows through blended finance and de-risking instruments, especially in the LDCs, where it is most needed.

Increasing Finance for Climate Action

Developing countries need to make large investments in green technologies and infrastructure to ensure a timely, smooth, and just transition to low-carbon economies. For the investments to increase, continued efforts by the G7, and strong partnerships between G7 and G13 countries are crucial. While the Paris Agreement laid a strong base for funds to flow, actual flows have long remained muted.

Existing multilateral development bank (MDB) and G7 initiatives include the following:

1. 2011 saw the formation of the Partnership for Market Readiness, which since its launch has helped 23 countries establish the necessary building blocks to implement carbon pricing, while the World Bank launched the Partnership for Market Implementation in 2021 with the goal of putting carbon pricing policies and programs in place in at least 30 countries by 2025.
2. Just Energy Transition Partnership (JETP): The first JETP was established between G7 members and South Africa at COP26 in Glasgow in 2021, followed by Indonesia and Viet Nam in 2022. Discussions are underway with India and Senegal.
3. Partnership for Global Infrastructure and Investment (PGII): Launched at the 2022 G7 summit in Germany, the PGII seeks to mobilize \$600 billion in global infrastructure investments from public and private sources by 2027, with \$200 billion pledged by the United States already.
4. Energy transition mechanism (ETM): To accelerate the energy transition in Asia and the Pacific, ADB is working with regional and international partners to support, study, and pilot a scalable ETM.

Building on the above initiatives, G7 can further facilitate an increase in green finance flows essential for EDMES' transition to low-carbon economies by:

1. Assisting in **restructuring and managing developing countries' debt to make** headroom for climate investments;
2. **Devising risk mitigation mechanisms** to reduce the cost of capital and attract private investments; and
3. **Expanding funding** for climate action through MDB reforms.

Restructuring and Managing Debt for Climate Action

Economic conditions continue to be volatile in the wake of the pandemic and given the current geopolitical instability. Governments are struggling with rising import prices and debt. According to IMF, 41 countries are at high risk of debt distress (Guillaume Chabert, 2022). In these extenuating circumstances, restructuring debt becomes an important lever to make headroom for green investment. One such lever is debt-for-climate (DFC) swaps.¹ The success of DFC swaps depends on two factors—clear definition of use of funds, and the quantum of debt relief offered.

Risk Mitigation: Socializing Risk for a Global Cause

Most of the investments in green technologies (such as renewable energy) require high upfront investments and are perceived as risky, leading to a high cost of capital. Compounded with sovereign risk premiums, it becomes almost impossible to mobilize private investments in climate action in developing countries, especially in LDCs. Table 1 presents the expected returns on solar projects in different countries.

To reduce risk premiums for climate projects in emerging markets, there is a need for an unbundled risk mitigation facility. Unbundling risk would imply that risk is transferred to different entities—for example, political risk can be transferred to the Multilateral Investment Guarantee Agency (MIGA). The G7 could take concentrated steps to set up a global risk mitigation facility to divert flows to developing countries and reduce the cost of capital. Such a facility would be backed by callable capital/guarantees provided by G7 countries and would focus on managing credit risk (sovereign and off-taker). An example of such a facility is presented in Figure 1

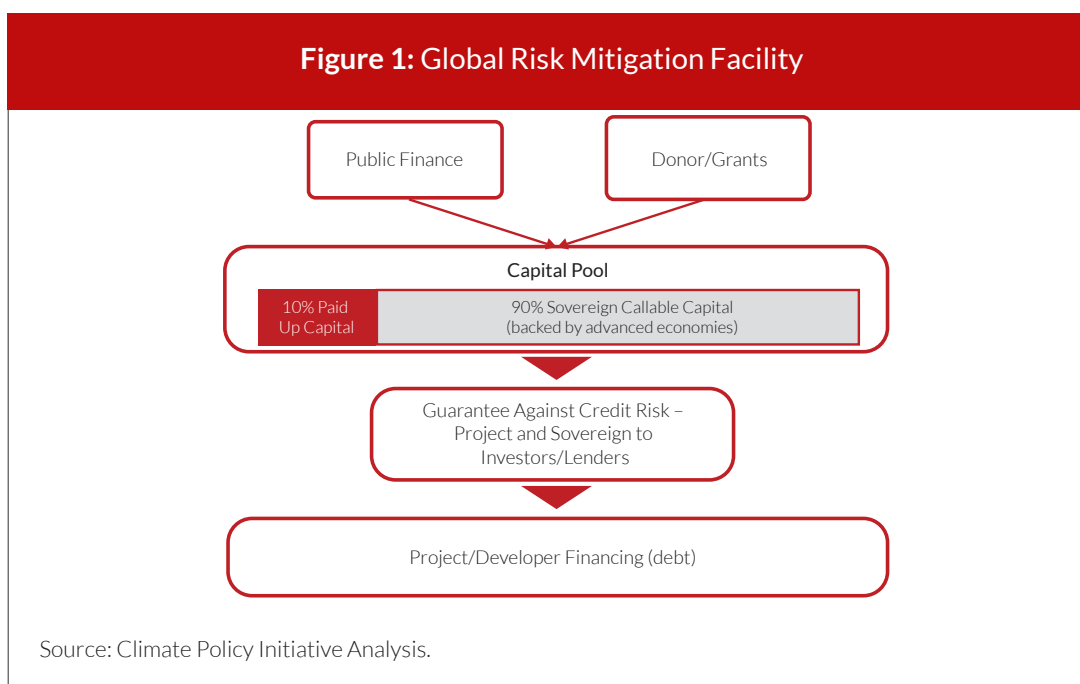
¹ DFC swaps are a type of debt swap in which the debtor nation, instead of continuing to make external debt payments in a foreign currency, makes payments in the local currency to finance climate projects domestically.

Table 1: Expected Return on Investment in Solar Projects in Different Countries

Country	S&P Rating	Required Return from Solar Projects (%)
Germany	AAA	7
United States	AA+	9
United Arab Emirates	AA	10
Saudi Arabia	A-	12
Chile	A	12
Morocco	BBB-	15
India	BBB-	17
Algeria	BBB-	18
Oman	BB-	18
Peru	BBB-	20
Costa Rica	B	21
Namibia	BB-	21
Ghana	B-	22
Brazil	BB-	22
Nigeria	B+	22
Bolivia	B+	24
Tanzania	B	24
Egypt	B	28
Zambia	CCC-	38
Argentina	CCC+	52

Source: Climate Policy Initiative (forthcoming).

Figure 1: Global Risk Mitigation Facility



Source: Climate Policy Initiative Analysis.

Expand and Accelerate Lending through MDB Reforms

MDBs have made significant contributions to progress on the Sustainable Development Goals (SDGs) through concessional and non-concessional lending to developing countries. Reforms targeted at increasing risk appetite based on the capital adequacy ratio and callable capital will provide headroom for additional lending (Sustainable Financing Working Group, 2022). The Independent High-Level Expert Group on Climate Finance (IHLEG) in their report suggest that MDB incentives should aim to leverage external finance as opposed to lending volumes (High-Level Expert Group on Climate Finance, 2022). This can be done by extending guarantees to help developing economies crowd-in private finance and obtain financing at better terms. This can help leverage external resources beyond the lending capacity of MDBs. Finally, process reforms are also needed to reflect contemporary realities. This could include greater transparency in decision-making and non-representative voting rights.

Boosting Blended Finance for Climate Action, Especially in LDCs

The United Nations Secretary-General's SDG Stimulus to Deliver Agenda 2030 includes a call for increasing and improving the use of blended finance approaches to mobilize more private climate and SDG finance (United Nations 2023). Leading up to the UN SDG Summit and the UN Climate Ambition Summit in September 2023, and the Summit of the Future in 2024, G7 members could consider pursuing three key actions to enhance the use of blended approaches to mobilize private climate finance, especially in LDCs where needs are the greatest and private finance remains extremely scarce.²

1. Boost the Inclusion and Effectiveness of Blended Finance Approaches in Overseas Development Assistance

The current overseas development assistance (ODA) is not sufficiently geared to respond to the urgent need for catalyzing finance for structural transformation toward inclusive green economies and addressing the climate crisis. A two-pronged approach³ could be pursued to further align ODA strategies with a greater focus on mobilizing private sector finance:

- i. Strengthen and mainstream climate considerations and use of blended finance vehicles:
 - Redirect a greater portion of development and climate finance to be used as catalytic capital with the explicit aim of unlocking private climate finance.
 - Focus on approaches that can mobilize private finance at scale and that have the highest sustainable development impact in line with the Addis Ababa Action Agenda and the SDGs. This would entail a greater emphasis on the standardization of blended finance vehicles to reduce complexity and transaction costs, which prevents many mainstream investors from placing capital in blended finance

² Between 2012 and 2018, only 6% of private finance mobilized by development finance interventions was in LDCs (OECD/UNCDF 2020).

³ The proposed two-fold revision of the ODA outlook directly responds to the priority set by the LDCs in the Doha Programme of Action for the Decade 2022-2031 (Resolution A/76/L.47) (para 257).

vehicles.⁴ For riskier and smaller LDC markets, adopting portfolio approaches, as opposed to a deal-by-deal practice, may allow for aggregation and risk pooling (Ghosh, Arunabha, and Nandini Harihar 2021) across projects, sectors, and countries.⁵

- Deploy blended climate finance approaches that help develop domestic financial sectors and capital markets that can introduce commercial finance over time, e.g., by investing in domestic financial intermediation, and seeking the involvement of local investors, such as sovereign wealth funds and pension funds.⁶
- ii. Base climate and blended finance interventions on clearly defined national and local priorities to ensure scalable impact:
 - Focus blended finance interventions on climate and green growth priorities identified in the nationally determined contributions and integrated national financing frameworks (INFFs).⁷
 - Climate adaptation and resilience building, alongside increased energy access⁸ are critical priorities in most LDCs. G7 members could champion approaches that mobilize private capital into climate-resilient infrastructure investments, such as blended finance equity funds⁹ and green and municipal bonds, and portfolio-based approaches for financing small and medium-sized enterprises that are often the main providers of decentralized clean/renewable energy solutions in LDCs.

2. Support the Development of Enabling Environments and Build Capacities for Blended Finance and the Development of Bankable Projects

On a demand basis, G7 countries could provide capacity and technical support to promote sound, enabling policy and regulatory frameworks that help attract private sector investments. To drive ownership of policy changes, the G7 could support triangular cooperation mechanisms that connect LDCs with G7 members and other developing countries to exchange experiences of policy reforms that contribute to enabling blended finance transactions and private sector investments.

In addition, the G7 could provide catalytic “bridge” financing to de-risk early-stage investments and growth enterprises and develop a pipeline of bankable assets. The lack of viable sustainable investment opportunities in many frontier markets is a main constraint

⁴ For example, structured funds with senior tranches of debt with a lower risk and return that may attract sovereign wealth funds and private pension funds, and junior tranches with a higher risk and return, which donors, national development banks, and MDBs may pick up (see GISD Alliance (2021)).

⁵ The One Planet Lab (2021), in its report on blended finance for scaling up climate and nature investments, provides additional suggestions for delivering climate investments through portfolio-level approaches for project development and mobilizing finance downstream.

⁶ Similarly, Convergence (2022b) highlights strengthening of local capital markets and financial institutions in emerging markets and developing economies as a way to access local savings and direct cross-border investment toward climate action.

⁷ INFFs provide a framework for financing national sustainable development priorities and the SDGs at the country level (<https://inff.org>).

⁸ The United Nations Conference on Trade and Development (UNCTAD 2021) estimated that in 2019, some 570 million people living in LDCs lacked access to electricity.

⁹ For example, the International Municipal Investment Fund, established by the United Nations Capital Development Fund and the United Cities and Local Governments in collaboration with the Global Fund for Cities Development, was designed as a municipal support fund to increase the capacity of local governments to access capital markets and through intermediaries.

to attracting private capital, especially in LDCs, including **in the climate space**. Where the lack of a pipeline of investable projects is a main constraint, the G7 could consider working more closely with the support of specialized partners, including the United Nations and MDBs to:

- i. Strengthen technical assistance and project preparation facilities to accelerate the development of bankable projects.
- ii. Allocate catalytic “bridge” funding for promising enterprises and projects that are not yet ready to attract risk-averse, market rate investors. Capital in the form of catalytic grants and low-interest concessional loans and guarantees can help de-risk and build financial capacity and credit history so that over time, additional capital providers can be brought in. Such catalytic financing can be especially important for small and medium-sized growth enterprises.¹⁰

3. Fostering Impact Measurement, Accountability, and Transparency of the Development Impacts of Blended Finance Transactions

To ensure that private investments reach the intended development goals and deliver positive climate and development outcomes, the G7 could prioritize the promotion of impact measurement, accountability, and transparency to crowd-in interest and deployment of blended finance in the last mile. This is critical to:

- i. Benchmark and establish common expectations of feasible impact and returns.
- ii. Understand efficient levels of blending/concessional capital and design vehicles, accordingly.
- iii. Ensure accountability and a results-based management approach and avoid impact-washing.

This encompasses concrete measures that promote the accountability and transparency of blended finance transactions, including:

- i. **The standardization of impact measurement systems to allow** for consistent and predictable measurement and reporting on the development outcomes of blended finance transactions.¹¹ Adopting standard impact metrics to collect and analyze data would help set clear expectations and requirements for all parties involved, avoid impact-washing, and allow for cross-learning and referencing among interested stakeholders
- ii. **Increase transparency of the impacts of investments** through greater documentation and dissemination of impacts that are publicly available (e.g., through detailed reports on the social, environmental, and economic outcomes, as well as any challenges, risks, and lessons learned from blended finance transactions).

Both measures would help counter the perceived risks of private investors that often limit their participation in these markets, as well as build trust among stakeholders on the value of pursuing blended finance instruments and deals.

¹⁰ For instance, the UNCDF’s Bridge Facility aims to bridge the development finance gap in the Least Developed Countries (<https://www.uncdf.org/article/7015/the-bridge-facility-a-dedicated-financing-facility-for-the-lDCs>).

¹¹ The Donor Committee for Enterprise Development Standard, the International Finance Corporation-hosted Operating Principles for Impact Management, and the Global Impact Investing Network’s Impact Reporting and Investments Standards are promising examples of key efforts to harmonize impact measurement across investors.

Other Tools and Means to Improve Climate Finance

1. **Harmonizing G7 Industrial, Trade, and Climate Policies and Promoting Technology Diffusion to Developing Countries**

The need to scale up climate finance coincides, unfortunately, with a paradigm shift in international trade toward fragmentation and protectionism. Although developed countries have a moral obligation to massively direct climate finance toward developing countries to help them decarbonize quickly and adapt, not nearly sufficient progress has been made in catalyzing the tripling of financial flows necessary to achieve global climate goals by 2030. The G7 still falls well short of its collective goal. Developed countries must put forward solutions that complement concessional finance by reducing barriers to trade and increasing technology diffusion.

Governments, including the United States (US) and its Inflation Reduction Act, are turning to subsidies and domestic sourcing provisions to concurrently address climate change and meet economic and geopolitical objectives. These incentives are expected to reduce the cost of nascent clean energy technologies and hasten the migration from fossil fuels. However, without global cooperation and coordination, these subsidies risk a race to the bottom where (i) clean energy investment and technological capacity will accumulate in high-income countries able to provide the most subsidies and (ii) developing countries, without such resources, will respond by enacting further barriers like export bans or tariffs to inhibit the flow of clean energy finance and technology.

i. **Coordinate Rules of the Road on Green Industrial Policy**

These potential challenges require developed countries and developing countries to coordinate rules of the road when doling out green subsidies. Developed country groupings like the G7, European Union, and OECD, along with relevant developing countries like Indonesia, South Africa, Brazil, and India, and organizations like the African Union and Association of Southeast Asian Nations are prime candidates who could carry out this coordination. This coordination must account for the dual objectives of these subsidies: concerted global decarbonization and increasing domestic economic competitiveness.

Basing coordination on existing global trade institutions or any new trade agreement is unlikely to succeed in the near term. Institutions like the World Trade Organization (WTO) are ill-equipped to balance domestic investments and the international trade system. Investments that address geopolitical and strategic domestic concerns may run counter to international trade rules, triggering lengthy disputes at the WTO or outright ignorance of its rulings. It may be the case for many democracies, including the US, that most ambitious, politically durable climate strategies run counter to WTO rules. Preventing protectionism without consideration for the climate crisis provides little incentive for major countries to adhere to the old system. The WTO must find ways to update itself to fit the times, lest major countries ignore them completely. Reform might not be a near-term prospect, but the G7 could start with a so-called “climate peace clause,” under which governments would refrain from invoking the dispute settlement mechanisms to challenge each other’s climate plans. The G7 could then build on its climate club proposal to develop a follow-on agreement setting out rules for climate

and trade that create realistic expectations that countries will pursue domestically popular trade measures to advance climate action while still encouraging guardrails against a vicious circle of tariffs and protectionism that penalize developing countries most of all.

ii. Reduce Trade Barriers and Promote Concessional Finance for Net-Zero-Enabling Technologies

Paired with green subsidy coordination, the G7 should pool and increase two components necessary for low- and middle-income countries to deploy emerging clean technologies: concessional finance and technical assistance. The components, moreover, should take a sectoral focus for transformative emissions reductions to account for the respective geoeconomic features, e.g., decarbonizing steel is fundamentally different from decarbonizing residential electricity.

While the need for pooled concessional finance is well understood for capital-constrained countries to decarbonize, technical assistance and technology transfer remain an underappreciated aspect. Adequate exchange of new net-zero-enabling technologies will spur economic development in respective countries by incorporating developing countries into growing global supply chains for clean energy manufacturing. This will increase the resilience of these supply chains by creating nodes or hubs of regional clean energy supply chains to prevent concentration and dependence on a single country or region.

Moreover, these efforts can minimize the replication of present patterns of global energy trade where many developing countries serve as sources of raw materials but are subject to the external price volatility of manufactured products. Doing so would require that low- and middle-income countries occupy higher value, intermediate, and finished product portions of new clean energy supply chains. One way the G7 can reduce trade barriers would be to pair technology transfer efforts with concessional finance. For example, concessional finance agreements or projects depending on this finance could prefer joint ventures between developed and developing country companies. These efforts need not be only bilateral, but plurilateral to overcome any constraints in resource availability. Development finance agencies such as the US Development Finance Corporation or the Japan Bank for International Cooperation are prime candidates to carry out this policy.

Another way G7 governments could increase technical assistance would be to pair largely domestic research and development efforts with development assistance offered to foreign countries. For example, the network of national laboratories overseen by the US Department of Energy already works on clean energy projects with the US Agency for International Development in South Asia and through the Net-Zero World Initiative, which develops net-zero energy systems plans with partner governments. These efforts are largely government-to-government and research-oriented but could be extended to further parts of the technology commercialization process that focus on deployment and the private sector. Another future example could be the US' recent Hydrogen Hubs to develop regional hydrogen production hubs and the National Green Hydrogen Mission in India. Each offers opportunities for the exchange of learnings and business development but will require these largely domestic programs to have concerted international components and engagement.

2. Universal Disaster Index Insurance to Reduce Poverty and Vulnerability in Emerging Economies

Changes in extreme weather and climate events could have catastrophic impacts on human health and cause wealth losses. Communities are increasingly vulnerable to these natural hazards, especially those in developing countries characterized by poverty and limited coping capacity. Reducing these risks (i.e., risk transfers) even as climate events and the potential for climate-related disasters increase, requires risk financing by international organizations and governments. This type of risk financing should be considered an integral part of climate financing (Linnerooth-Bayer and Hochrainer-Stigler 2015).

Index-based insurance has emerged as a new type of financial risk transfer product. Since the insurance payout is based on a pre-determined index and threshold, an individual claim is not necessary. Also, the model helps to overcome issues commonly identified under traditional insurance policies, namely moral hazard and adverse selection. More importantly, this product is better positioned to manage covariate weather risk (Barrett et al. 2007). This risk transfer instrument initially started in agriculture to insure against weather shocks but has since been expanded to act as disaster insurance. It can speed up rebuilding and recovery processes by providing post-disaster funding and liquidity soon after a disaster.

However, the market for such insurance has been characterized by demand constraints, especially among poor households (Leblois, Cotty, and Maitre d'Hotel 2020). Root causes include basis risk, trust in government, and land property rights. The three root causes are interrelated. Basis risk arises because the index measurements do not match actual losses. This could stem, for example, from poor measurement methods or a lack of accurate data.¹² Also, start-up costs are high (Collier, Skees, and Barnett 2009). Emerging countries' governments must address these issues to enable universal disaster insurance.

In order to strengthen the demand for disaster insurance, it is essential for emerging countries to cooperate with the G7. This includes two aspects.

First, transfer of technology, so that emerging economies can implement a more precise measure of disaster impact—for example, technologies to measure extreme rainfall in all areas of an emerging economy or the use of remote sensing data combined with hydrological modelling (Adbi et al. 2022). This would reduce basis risk.

Second, support and guidance for emerging economies to establish and uphold a transparent land property rights scheme. If these two aspects are met, then trust in the government may increase.

Emerging economies also need knowledge transfer from the G7 on contract design and regulations so that universal disaster insurance can be sustainably implemented through a partnership between the government and private sector. This may be a government-led initiative through regulations and subsidies, although the specific intervention would depend on the various contexts different countries face. Also, the regulations need to

¹² <https://www.indexinsuranceforum.org/faq/what-basis-risk>

specify a clear division on the coverage by private and government insurance providers. Finally, ODA from G7 countries could fund the start-up of the implementation of universal disaster insurance.

Conclusion

Climate finance flows need to increase significantly in developing countries, especially in the LDCs. The G7 can play a major role in channeling greater capital flows to frontier economies by boosting the use of blended finance to mitigate risk and attract additional private finance. The G7 can also help developing countries, especially LDCs, restructure their debt to make headroom for climate investments, e.g., through debt-for-climate swaps. Finally, the G7 can spearhead the MDB reform agenda to increase their risk appetite and place greater focus on leveraging private climate finance. In parallel, the G7 should support developing countries, especially LDCs, in the development of enabling environments for private investments and the development of pipelines of bankable climate mitigation and adaptation projects. Finally, the G7 can support capacity building on blended climate finance approaches and promote a greater focus on impact measurement, accountability, and transparency to drive greater effectiveness, efficiency, and use of blended finance.

Additional ways to enhance finance and investments for climate in developing countries include better alignment of G7 industrial, trade, and climate policies and promoting universal disaster index insurance.

References

- Abdi, M. J., N. Raffar, Z. Zulkafli, K. Nurulhuda, B. M. Rehan, F. M. Muharam, N. A. Khosim, and F. Tangang. 2022. Index-Based Insurance and Hydroclimatic Risk Management in Agriculture: A Systematic Review of Index Selection and Yield-Index Modelling Methods. *International Journal of Disaster Risk Reduction* 67: 102653.
- Barrett, C. B., B. J. Barnett, M. R. Carter, S. Chantarat, J. W. Hansen, A. G. Mude, D. E. Osgood, J. R. Skees, C. G. Turvey, and M. N. Ward. 2007. *Poverty Traps and Climate Risk: Limitations and Opportunities of Index-Based Risk Financing*. IRI Technical Report 07-02. Palisades, NY: The International Research Institute for Climate and Society at Columbia University.
- Collier, B., J. Skees, and B. Barnett. 2009. Weather Index Insurance and Climate Change: Opportunities and Challenges in Lower Income Countries. *The Geneva Papers on Risk and Insurance – Issues and Practice* 34: 401–424.
- Convergence 2022a. *State of Blended Finance 2022: Climate Edition*. <https://www.convergence.finance/api/file/45395a09df1b4cf6ad5ea30a9f92641f:56e36aaef1ad5ee0e4025f1ab1a733e25da096007d409a9758701531edaa6d0861874ad2f6fb735c3ffccb17c6800e46580cd7b23de3b64bba37fa9deb30323e2bad6e8908b8c7b570c9b32e148c8bbca24636590ded96e82ccf7b23775646299e338677aac7df47d9d13d34bef32fe3382bd2fd3933deb5b9fb9af7197eae948c43dad72c0180a53ee70b84c3e9384>
- Convergence. 2022b. *The Action Plan for Climate & SDG Investment Mobilization: For Emerging Markets & Developing Economies*. <https://www.convergence.finance/api/file/8f180a9d9c2bd2fdaa66661f03382bae:6acdf66f6fe4f00d620a6832fa13967b8cab4a65f5dc6115bf0b17d88d338f136198af8e764eb01396b4658945c64a12850af64eb9cb6bba1f86a4f1e0c5d75b91bdc03ce585d11b8b771763b364e86ac8a0deb0743d062e7f7c2f5897f0847eff8860af82e17e537e90a5bdc023ea44f1927c5cc0ab2d691d191db12d8fe911>
- Ghosh, A., and N. Harihar. 2021. *Coordinating Global Risk Mitigation for Exponential Climate Finance*. A GCF-CEEW Report. Stockholm: Global Challenges Foundation. <https://www.ceew.in/publications/mitigating-climate-change-and-clean-energy-finance-risks-for-developing-nations>
- GISD Alliance. 2021. *Increasing Private Finance Mobilization – Recommendations for Development Banks and the Global Development Community*. https://gisdalliance.org/sites/default/files/2021-10/GISD%20Position%20Paper%20-%20DC%20Recommendations%20Private%20Finance%20Mobilization_18%20Oct_0.pdf
- Guillaume Chabert, M. C. (2022, April 22). *IMF Blog*. From <https://www.imf.org/en/Blogs/Articles/2022/04/07/restructuring-debt-of-poorer-nations-requires-more-efficient-coordination>
- High-Level Expert Group on Climate Finance. (2022). *Finance for Climate Action: Scaling Up Investments for Climate and Development*.
- Leblois, A., T. Le Cotty, and E. Maitre d’Hotel. (2020). How Might Climate Change Influence Farmer’s Demand for Index-Based Insurance? *Ecological Economics* 176: 106716.
- Linnerooth-Bayer, J., and S. Hochrainer-Stigler. 2015. Financial Instruments for Disaster Risk Management and Climate Change Adaptation. *Climatic Change*, 133: 85–100.

- Naran, B., J. Connolly, P. Rosane, D. Wignarajah, E. Wakaba, B. Buchner. 2022. *Global Landscape of Climate Finance: A Decade of Data 2011-2020*. Climate Policy Initiative. <https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-a-decade-of-data/>
- OECD, T. W. (2018). *Financing Climate Futures: Rethinking Infrastructure*. OECD, The World Bank, UN Environment.
- Organisation for Economic Co-operation and Development/United Nations Capital Development Fund (OECD/UNCDF). 2020. *Blended Finance in the Least Developed Countries 2020: Supporting a Resilient COVID-19 Recovery*. Paris: OECD Publishing. <https://doi.org/10.1787/57620d04-en>
- One Planet Lab. 2021. *Blended Finance for Scaling Up Climate and Nature Investments*. <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/11/Blended-Finance-for-Scaling-Up-Climate-and-Nature-Investments-1.pdf>
- Sustainable Financing Working Group. (2022). *2022 G20 Sustainable Finance Report*.
- United Nations. 2023. *United Nations Secretary-General's SDG Stimulus to Deliver Agenda 2030*. <https://www.un.org/sustainabledevelopment/wp-content/uploads/2023/02/SDG-Stimulus-to-Deliver-Agenda-2030.pdf>
- United Nations Conference on Trade and Development (UNCTAD). 2021. Over Half of the People in Least Developed Countries Lack Access to Electricity. 1 July. <https://unctad.org/topic/least-developed-countries/chart-july-2021>
- UNEP. (2022). *Emissions Gap Report 2022*. UNEP.

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