

Issue

Brief

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Bridging the Gaps in Public Finance for Climate Adaptation

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The current gap in global adaptation finance for developing countries is estimated at US\$194-366 billion per year. This brief highlights the critical role of domestic public funding in driving adaptation initiatives. While international climate finance mechanisms exist, their effectiveness is limited by slow disbursement processes and regional disparities in fund distribution. Public finance management systems can act as catalysts for mobilising private finance for climate action. In the context of fiscal constraints and elevated debt levels after the COVID-19 pandemic, the brief explores alternative financing solutions, including parametric insurance and regulatory reforms. The integration of climate-responsive budgeting in public finance systems emerges as a crucial tool for reflecting government accountability and priorities. The brief also examines innovative approaches to expand adaptation finance beyond traditional public funding, particularly in developing countries, where climate vulnerabilities are highest.

Article 7.1 of the Paris Agreement highlights the global goal on adaptation.¹ To support the work towards this goal, signatories to the agreement created the Glasgow-Sharm El-Sheikh work programme at COP26.² The two-year work programme was carried out by two technical bodies that support the Meeting of Parties to the Paris Agreement CMA—the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation.³ While the work programme highlighted that adaptation action has a time-bound goal, the adoption of the global goal at COP28 fell short due to a lack of quantified targets and financial support.⁴

Previous attempts to define the targets of adaptation have had limited success, as adaptation actions have been local and context specific.⁵ While these challenges may persist, there are ongoing efforts to create indicators to measure success and collect data to support adaptation planning. Finance remains the key challenge. The COP28 decision reiterates that, by 2025, Parties need to double their collective climate finance for adaptation to developing countries from 2019 levels.⁶

Efforts to address climate change risks have largely focused on mitigation, resulting in a shortfall in adaptation action. Consequently, the COP28 decision advocates for a balance between mitigation and adaptation.⁷ According to a 2023 United Nations Environment Programme report, the financing gap for adaptation is anywhere between US\$194 billion and US\$366 billion per year, with developing countries requiring 10-18 times the current global public adaptation financial flows.⁸

At the international level, the number of adaptation actions supported by the Green Climate Fund (GCF), Global Environment Facility's Least Developed Countries Fund, Special Climate Change Fund, and Adaptation Fund was lower in 2022 than 2021, despite a rise in total funding.⁹ The Organisation for Economic Co-operation and Development (OECD) estimates that, between 2016 and 2021, only 25 percent of climate finance, amounting to an average of US\$19 billion per year, was mobilised by developed countries for climate adaptation action in developing countries.¹⁰ Within developing countries, adaptation finance prioritised middle-income countries with large populations. Multilateral Development Banks were the largest source of public climate finance for adaptation, providing 89 percent of funding during the 2016-21 period, followed by bilateral arrangements. Financial flows were concentrated in

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three sectors: water supply and sanitation (21 percent), agriculture (19 percent), and transport and storage (10 percent). Loans were the most frequently used instrument, although concessional finance was also sought.¹¹

Initiatives such as the 2021 Glasgow Climate Pact have attempted to remedy the shortfall in finance. The OECD Development Assistance Committee (DAC) also declared that it would strengthen support for climate adaptation and resilience in developing countries.¹² Whether these will materialise into enhanced financial support for countries in need of adaptation finance remains to be seen.

Key Challenges

Although international public finance has been emphasised as the primary support mechanism for adaptation funding, the current state of flows is sobering. The bulk of adaptation flows are concentrated in East Asia and the Pacific. While public finance is predominant in Sub-Saharan Africa (88 percent) and the East Asia Pacific (60 percent),¹³ private finance comprises the biggest share in Western Europe (54 percent), the Middle East and North Africa (56 percent), and the United States (US) and Canada (81 percent). Among public finance funders, multilateral DFIs contribute to about 63 percent of the funds.¹⁴

The qualitative elements of financial flows, i.e., the extent of debt and the contributions of developed countries, are also important factors. For example, there are limits to scaling up MDB finance, and deviating from business-as-usual requires a shift in shareholder expectations. Therefore, domestic resources will be key to ensuring that adaptation needs are met.

Since adaptation action is aimed at safeguarding societies and economies from the adverse impacts of climate change, it is considered to be the government's responsibility.¹⁵ However, government expenditures are dictated by fiscal discipline. As countries work within prescribed fiscal limits, enhanced spending can only come from higher tax collections or higher borrowing for the purpose of adaptation, although the latter is less likely due to increased government debt; two years after the COVID-19 pandemic, debt levels have remained elevated, at 238 percent of global GDP,¹⁶ despite economic rebounds and continuing inflation. Additionally, climate change has worsened the debt burden in the Global South.¹⁷ The IMF has found that, in the aftermath of 11 natural disasters that hit developing countries between 1992 and 2016, public debt levels increased significantly and stayed elevated for three years afterwards.¹⁸

Therefore, countries may find it challenging to scale up finance. The alternative is reforming tax systems and/or expenditures. The reform of tax systems is dependent on a myriad of administrative, compliance, and policy factors. In many developing countries, which experience sharp economic slowdowns and resource/capacity constraints, the ability to raise taxes may be limited. The United Nations Development Programme's financing SDGs program provides a framework for tax reforms.¹⁹ In the short term, better fiscal management, i.e., assessment of expenditures and tagging of adaptation spend, may be more effective. State governments in India, including those of Maharashtra, Assam,

Key Challenges

Chhattisgarh, Bihar, Odisha, and Kerala, have incorporated climate budgeting in the public finance management,²⁰ with Odisha being the first Indian state to disclose sector-wise budgetary requirements and the climate sensitivity of the budget.²¹

Recent efforts have aimed to ensure corporate and private-sector support for adaptation action. For example, the ACT Adaptation methodology provides a framework for physical climate risk assessments.²² Another way for scaling private finance in a space that is largely considered the domain of public finance is through the proliferation of insurance-based products. The OECD provides a useful framework for sectors where commercial finance may be more suitable. Table 1 provides a list of adaptation-related activities and potential sources of finance. The shaded boxes represent the kind of finance available for a particular activity. Commercially viable capital may be available for credit and insurance, consultancy services, afforestation and reforestation, water-efficient irrigation, changes in production towards better adapted crops, and disaster-resilient infrastructure spend. A large share of adaptation-related activities require either public funding or below-market financial returns. Therefore, it is imperative to devise instruments to scale public finance.

Key Challenges

Table 1: Adaptation Activities and Expected Financial Returns

Adaptation activity	Examples of activities	Usually publicly funded	Mixed (Below-market)	Commercially viable
Enabling environments	Development of national adaptation plans and strategies			
	Provision of climate-related data and risk maps			
	Implementing early warning systems covering climate-related events			
	Development of new technologies and services for adaptation			
	Development of financial services to support adaptation (e.g., credit and insurance)			
	Consultancy services for adaptation			
Agriculture	Afforestation and reforestation			
	Changing production towards better-adapted crops and varieties			
	Installing water-efficient irrigation			

Key Challenges

Adaptation activity	Examples of activities	Usually publicly funded	Mixed (Below-market)	Commercially viable
Coastal zones	Restoration of coastal wetlands			
	Relocation of properties from high-risk areas			
	Beach nourishment			
	Flood defences			
Infrastructure	Integrating climate resilience into new infrastructure			
	Increasing backup systems in infrastructure networks			
	Making existing infrastructure resilient			
Water	Expanding water storage capacity			
	Desalination			
	Reducing leaks in existing infrastructure			
	Protecting watersheds			
	Improving water efficiency of major water users			

Source: OECD²³

Despite growing pressure on developed countries to pay their fair share of the required adaptation finance, a more pragmatic approach may be to acknowledge that domestic resources will be the first, if not only, source of capital. Responding to urgent adaptation needs would require emergency access to funds. The GCF has been a crucial source of emergency relief funds. Launched in 2021 to shield clean energy companies in developing countries from COVID-19 shocks,²⁴ the GCF has been accessed by countries such as India,²⁵ although the provision has been slow and the process complex.²⁶ Moreover, even as we approach the deadline for a new collective quantified goal, there is less agreement on the appropriate share of finance from developed countries. Although the loss and damage fund at COP28²⁷ holds promise, more strategic ways to tap into funds beyond pure play budgetary allocation are required.

Insurance

Insurance emerged as a preferred instrument after developed countries expressed their discomfort over the use of the term ‘compensation’ in the Paris Agreement.²⁸ At COP21, loss and damage was a highly debated topic, with developed countries refusing public international climate liability or any reference to compensation.²⁹ The Agreement was then modified to include terms such as “Comprehensive Assessment and Management” and “Risk Insurance facilities, climate risk pooling and other insurance solutions”.³⁰

There have been multiple efforts to fund insurance in vulnerable countries. The US announced US\$30 million³¹ for a climate risk insurance initiative, and the G7 announced public funds to support the InsuResilience initiative.³² The InsuResilience Global Partnership supports programmes and projects related to the Climate and Disaster Risk Finance and Insurance (CDRFI), with 324 projects in 108 countries. The Global Shield Program launched at Sharm El-Sheikh by the G7 aims to support the most vulnerable countries. In its initial phase, it supported Bangladesh, Costa Rica, Jamaica, Malawi, Pakistan, the Philippines, Senegal, and the Pacific countries.

Insurance, unlike other international funding facilities, ensures fast access to funds. A notable example is the CCRIF PCS,³³ which assists Caribbean countries in the case of natural disasters that include hurricanes and excess rainfall. This is a parametric insurance facility that helps subsidise insurance policies. For example, in 2023, the European Union (EU) provided CCRIF with US\$4.7 million to support 12 Official Development Assistance-eligible Caribbean members.³⁴ It is estimated that, through the World Bank-administered programme, the EU enabled discounts of 14 percent on gross premium.³⁵


Parametric insurance—which is insurance against the probability or threshold of an event as against the occurrence of the event—can help insure against disruptions to business-as-usual. However, countries seeking to use this as a funding option need to consider the fact that the premium and the terms and conditions are not fixed and can contextually differ. Such a product can be useful not just for the flow of international finance but may also be used at the national or subnational levels with potential for public-private partnerships. Examples in India include pilot crop-based insurance in 50 districts during 2007-16 and Nagaland’s financial protection against excess rainfall.³⁶ Given the potential for risk sharing, it is possible to explore the potential for supporting vulnerable communities and disaster management by pooling public funds with private funds.

Regulatory changes

Public funding has limited fiscal space to implement insurance-based schemes on a wider scale. Therefore, private finance may still be necessary to fund adaptation, though it may not be easily available. To nudge private capital to move into adaptation activities, it may be important to demonstrate the risks from inaction to businesses. This would ensure that economic activity is organised so that risks arising from extreme weather events may be mitigated to some extent. In countries such as India, which place greater reliance on bank-based financing, it is expected that the flow of funds to higher risk activities can be moderated. The disclosure of physical risks to central banks is one of the ways in which banks can compel businesses to change their investment and operations. While existing business disclosures such as ACT are already addressing adaptation, a shift in banking-sector disclosure requirements may enable debt-based financial flows to better align with adaptation goals.

Conclusion

Public finance is considered to be the mainstay for adaptation finance at the international and national levels. However, given the slow global growth and debt buildup, there is need to rethink ways of funding the gap between the required adaptation finance and what public finance can provide. While the global goal for adaptation has received widespread support, the commitment on finance remains unclear.

In these circumstances, countries can pursue the long-term goal of revenue and expenditure reforms. However, time is limited as costs for adaptation continue to accumulate. In this context, practices such as budget tagging and the climate risk assessment of budgets provide a way forward. More importantly, the use of instruments such as parametric insurance, which is a form of concessional international public finance, may be a viable option for financing adaptation, as has been the case in the Caribbean countries. Lastly, reforming business-as-usual would necessitate regulatory changes such as the disclosure of physical risks. 

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