



Innovative Applications to Increase Private Sector Climate Adaptation Finance

September 2024



Adaptation Financing Conundrum

The continued loss and damage of critical infrastructure and livelihoods due to multiple, recurring climate hazards underscores the urgent need to build a resilient future especially in vulnerable and underserved countries. Developing countries require an estimated 12-fold increase of current adaptation spending, or roughly \$387 billion annually to reduce climate change vulnerability.¹ However, additional debt adds significant burden to fragile economies that may already struggle to rebuild critical infrastructure that has been devastated from prior climate events. Today, fifty-four developing countries, many on the front lines of climate disruptions, face crushing debt burdens² which they have little hope of addressing. These governments are facing critical decisions on pressing future climate concerns such as water sanitation systems, flood protection systems, or heat mitigation. For climate vulnerable countries, the consequence of additional debt highlights the necessity for innovative instruments and knowledge sharing to (1) unlock private sector financing, (2) incentivize investment from private actors, and (3) promote partnerships to overcome financing

barriers. United States Agency for International Development (USAID) Administrator Samantha Power, in her January 2024 keynote speech “The End of Climate Shocks” suggested that the historic pathway to increase funding for adaptation may sit with lessons learned from mitigation activities. Policymakers and private sector investors have already navigated complex global financing environment to achieve real benefits and the mechanisms and results can be shared as lessons learned for adaptation project financing. Unlocking private financing to complement public funding would provide governments with the fiscal space necessary to support the most vulnerable communities. The application of successful mitigation financing models can help reduce reliance on public debt for adaptation needs especially in low- and middle-income countries (LMIC) while also achieving strategic, forward facing adaptation goals. This paper looks beyond conventional debt financing to discuss recognized mechanisms applied in innovative ways to drive capital market investment towards adaptation, freeing up public funds for public operations.

Adaptation Investment Challenges

Private equity, pension funds, insurance companies, and impact investors among others possess ample resources, sophistication, and the patience to invest in adaptation projects but are dissuaded from doing so due to the following.

¹UN Adaptation Gap Report. <https://www.unep.org/resources/adaptation-gap-report-2023>

²According to the UN Report debt is trading for more than one third of developing economies issuing dollar debt in international markets, with 19 countries paying more than 1,000 basis points over US Treasury bonds. Similarly, one third of developing economies with a sovereign credit rating are now rated either ‘substantial risk, extremely speculative or default’. Given the current global outlook of low growth and high interest rates, these economies are facing increased contraction.

³Power, Samantha. “The End of Climate Shocks.” January 30, 2024. <https://www.usaid.gov/news-information/speeches/jan-30-2024-administrator-samantha-power-end-climate-shocks>.

- **Return Expectations Are Not Met**

There is a misalignment between equity investors and adaptation returns especially related to the complexities of monetizing avoided costs for return on investment⁴. Commercial lenders and pension funds, for example, expect market rate returns while private equity looks for markets that can scale rather than bespoke “one-off” project solutions, which often require significant time and expense to develop.

- **Lack of Data to Perform Appropriate Investment Analysis**

Lack of investment interest usually begins with a dearth of available country level climate risk and vulnerability data. This includes accurate hazard risk maps, information on flood risk, or even state climate strategies and priorities. Limited information prevents investors from targeting solutions, guiding investment decision-making, and accurate risk assessment.

- **Complexities Determining Valuation of Benefits and Avoided Costs**

Mitigation, unlike adaptation, can be measured with the quantifiable metric of tons CO2 equivalent reduced. This clearly communicates a result, demonstrating progress toward a strategic

goal. Adaptation value proposition functions on a different criteria for assessing effectiveness which makes identifying and quantifying benefits challenging. For example, the value of catastrophe insurance is not easily understood until a catastrophic event requires reimbursement or property replacement payout.

- **Heterogeneity of Solutions Prevents Scale**

Climate impacts, vulnerabilities, and adaptation needs vary by place and circumstance, making the assessment of relative need difficult. An adaptive solution that functions appropriately in one location may not present an appropriate solution in another location. Furthermore, the functioning solution may not be effective over time as the environment and climatic impacts evolve with changes in weather patterns, geography, and human impacts. The complexity of identifying, evaluating, monitoring, and verifying such solutions additionally complicates state policy design, access to funding, or the ability to attract private finance, which relies on predictable solutions and cash flows to generate returns.

Private Sector Incentive for Adaption Investment

Despite these challenges, there are still broad, interlinked benefits for private sector investment.

Supply Chain Resilience

The private sector invests in adaptation to improve supply chain resilience to costly disruptions brought on by climate shocks and stresses. This often goes underreported as adaptation since it is a commercial endeavor and can be characterized as risk management and business continuity planning (BCP), an effective resilience tool.

Enterprise Risk Reduction

As Nike wrote in their 2019 Impact report; “If there is no planet, there is no sport⁵. Shareholders are recognizing and holding corporate leaders responsible for a lack of investment in adaptation and resilience due to the significant risk climate events present to operations and revenue. Risks include premature destruction and degradation

⁴ ibid.

⁵ Nike's Impact report went further; “from marathon start times moving into pre-dawn hours to players and fans suffering heat exhaustion due to extreme weather conditions, climate change is already affecting the athletes we serve and poses challenges to the future of sport. This suggests that Nike is keenly aware of how climate change is a direct risk to their products.

of physical assets, workforce upset, and even a reduction in interest in products, which negatively impact financial returns.

New or Expanded Market Offerings

products and services into the development and sale of climate adaptation goods, technologies, and services, such as engineering and/or construction approaches that protect against or mitigate the impacts of climate-driven disasters. Services might include flood protection services⁶ and designs, development of drought-resistant crop seeds, and engineering services that climate harden and/or retrofit existing infrastructure. It can also include

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Innovative Application of Existing Financing Instruments to Mobilize Private Sector Investment

Established mitigation financing mechanisms can serve as examples to attract private finance for climate adaptation, while also providing flexible financial tools and market-based approaches to drive sustainable and resilient projects. The versatility of these proven mechanisms makes them valuable instruments to address the challenges posed by climate change while attracting alternative financing for adaptation. Such instruments may prove more accessible and more effective than the complexities of public-private partnerships, allowing investments and projects to become operational faster. In addition, supported by development organizations providing technical assistance to design appropriate policy, model impacts of reduced tax revenue, and conduct scenario planning, vulnerable nations may be able to identify alternatives to debt for adaptation financing.

Investment Tax Credits (ITCs)

ITCs were first introduced in 1962, and were designed to reduce US federal income tax liability by providing a credit equivalent to a percentage of the total investment cost.⁸ Notable examples

include the 1962 Investment Tax Credit which stimulated economic growth by providing a seven percent credit for tangible personal and real estate property, and the Solar Investment Tax Credit, put in place in 2006, which has attracted more than

⁶After Super Storm Sandy there was a significant increase in house lifting services along the Jersey Shore.

\$60 billion of private investment. More recently, the US Inflation Reduction Act (IRA) modified the ITC by allowing the transfer of tax credits to non-project parties, thereby enabling developers to immediately monetize the credit for direct investment in the project rather than engaging in lengthy and complex structuring for an applicable tax equity partner. ITCs could be used to provide tax credits to adaptation project investors or third parties such as the current IRA. This could increase investment by allowing a reduction of tax obligation to either the project investor or project company.

In addition, if the ITC was transferable, then it could be traded or sold on the secondary market similar to a carbon credit within the issuing tax jurisdiction. Their original design could serve as an example of enterprise risk reduction or expansion of new market offerings leveraging the potential strength of ITC to stimulate investment. leveraging the potential strength of ITC to stimulate investment.

Modified Accelerated Cost Recovery System (MACRS)

The establishment of the Modified Accelerated Cost Recovery System (MACRS) incentivized private investment by allowing for the accelerated recovery of an asset's capitalized cost over a specified period through annual tax deductions, with a focus on enhancing project Net Present Value (NPV). Bonus depreciation, a component of MACRS, permits businesses to immediately write off a significant percentage of eligible asset costs. For adaptation initiatives, MACRS could also provide a financial incentive for companies to invest in climate-resilient infrastructure, fostering innovation and risk mitigation⁹ while allowing for the investor to recover the capitalized cost of the asset over a predefined and potentially accelerated schedule of tax deductions.

United State Investment Tax Credit

The ITC became one of the most consequential federal policy mechanisms to directly increase clean energy in the United States. Solar deployment grew quickly across the U.S. due to the stability of the policy, which drove down costs and increased investor benefit. The ITC resulted in \$66 Billion dollars invested, 170,000 job created, and a 200X growth in the solar PV industry.⁷

Carbon Markets

Traditionally, carbon markets are aligned to mobilizing investment for mitigation projects. However, the application of these mechanisms for climate adaptation could involve applying such funding to the emission reduction aspect of an adaptation project. For example, adaptation projects which improve and protect drinking water could also include installation of solar PV pumping. Carbon credits could then be used to finance the solar PV component of the project. Green-gray infrastructure projects are a hybrid approach which combines restoration and conservation with conventional infrastructure projects and can benefit from carbon credits. Green- grey infrastructure mixes conservation and restoration of nature with conventional approaches (such as concrete dams and seawalls).¹⁰ The adaptive services are a result of the ecosystems itself or as protective qualities.¹¹

⁷ [The Case for the Solar Investment Tax Credit \(ITC\) | SEIA](#) Solar Energy Industry Associations

⁸ <https://www.energy.gov/eere/solar/federal-solar-tax-credits-businesses>

⁹ <https://www.investopedia.com/terms/m/macrs.asp>

¹⁰ <https://www.conservation.org/projects/green-gray-infrastructure#:~:text=%E2%80%9CGreen%2Dgray%E2%80%9D%20infrastructure%20mixes,as%20concrete%20dams%20and%20seawalls.>

¹¹ Green-Gray Community of Practice (2022). Green-Gray Infrastructure Funding and Finance Playbook. Available at: <https://www.conservation.org/projects/globalgreen-gray-community-of-practice>

Barranquilla – Santa Marta Highway Colombia

A carbon credit co-benefit financing example is the Barranquilla-Santa Marta highway which crosses the Ciénega Grande de Santa Marta, a coastal wetland in the Colombia Caribbean. The area has significant mangrove forests, a variety of flora and fauna, and is significant for commercial fishing activity. The Colombian government tendered out several projects to increase the size of the highway and address coastal erosion. While conventional infrastructure was originally considered, the Non-Governmental Organization (NGO) Conservation International worked with partners to compare the conventional approach with a grey/green approach, which would sequester carbon, secure carbon credit investment, and rely on a public private partnership. Their approach modeled a reduction of nearly 50 percent capital and annual operating cost assumptions from a conventional approach.

Insurance Products

The insurance sector may be a source of both change and investment. According to a report produced by the Wharton Risk Center in support of the National Science Foundation, insurance can improve post disaster recovery, protect coastal ecosystems, support community fiscal needs and increase investment in risk reduction.¹² While certain insurance products can support protection and recovery of investment in assets, innovating around insurance sector investment in adaptation projects may provide benefits to both consumers and insurance providers. For example, as the effects of climate change increase, asset owners will see insurance costs increase, eventually rising to unsustainable levels as is occurring in California, Texas, and Florida. Often insurers transfer such unmanageable risks to reinsurers, and then to insurance-linked securities such as catastrophe bonds. While the bonds cover payouts in excess of the insurance coverage, they do not address the underlying risk or support development of adaptive measures.¹³

A further linkage between the insurance industry and adaptation efforts can be found in resilience-based products. While siloed from broader climate and adaptation practices, the insurance and reinsurance industry have provided leadership to support policy holders recovering from climate events through products that protect vulnerable sectors and populations. For example, the investment arms of insurance companies investing in large infrastructure may seek to include climate hardening, climate change engineering, or other climate related design to protect the long-term sustainability of an infrastructure asset. Climate considerations are often driven by the need to protect the investment but result in additional benefits of sustainability for users in the event of climate related events.

¹² Kousky Carolyn, and Wiley Helen, March 2020, The Role of Insurance in Coastal Adaptation, Wharton university of Pennsylvania, Risk Management and Decision Processes Center

¹³ Carter, Lauren, January 2021, Can Insurance linked Securities mobilize investment in climate adaptation? UNDP Geneva

What Can Development Organizations Do?

Established and effective mitigation solutions such as ITCs, MACRS, insurance investment, and carbon market finance have proven successful in developed markets and can be deployed in developing markets given the right enabling environment. Implementers supporting programs such as those designed by USAID can aid with the design and implementation of these solutions through actions such as:

- Supporting the design and adoption of policies such as ITCs and MACRS to promote private sector investment through tax credits and depreciation. While this may initially erode the state's tax revenue, the benefits may outweigh the additional burden of climate impact recovery expenses.
- Financial modeling and scenario planning to evaluate sensitivity to tax revenue loss, especially as compared to the reduction or elimination of infrastructure reconstruction liabilities and subsequent economic recovery liabilities from climate upsets.
- Improving the availability of data and information needed by the private sector for investment decisions, such as development and dissemination of climate strategies, vulnerability data, hazard risk mapping, and identification of current and future flood risk among others.
- Supporting the valuation of avoided costs and benefits of resilience investments, to better showcase the cost benefit of private equity for adaptation needs.
- Identifying and quantifying mitigation co-benefits, where appropriate, to assess the opportunity for project revenue stacking from carbon finance.

Coupled with fiscal engineering, strong local leadership, and effective stakeholder engagement, the private sector can be attracted to invest in adaptation projects, offsetting or supplementing public funds. A coordinated effort can align public good projects, private sector investment, and strategic ambitions to meet development outcomes. While this is not the panacea for all adaptation projects and all nations, it can attract private sector investment to contribute to the significant needs for climate adaptation investment.

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