



Financial instruments and mechanisms for climate change programs in Latin America and the Caribbean

A guide for Ministries of Finance

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**Inter-American
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**Climate Change and
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POLICY BRIEF

Key Messages:

- Developing countries could receive international climate financing through diverse resource streams (private investment, traditional development aid, dedicated national funds, carbon markets, etc.), but it is fragmented both in terms of its source as well as its destination (various line ministries, general budget support, national implementing agencies, private sector, etc.). Additionally, application processes vary both in length and requirements.
- It is more effective and politically tenable for countries to centralize their climate change portfolios, both financially within the Ministries of Finance, and policy wise in a national climate change program.
- There are a handful of financial instruments and mechanisms (traditional loans, grants, debt swaps, national climate funds, carbon markets, and insurance instruments) that Ministries of Finance can use to kick start their national climate change programs and begin to centralize and mainstream the country's climate financing related to both mitigation and adaptation.
- Aside from these innovative mechanisms, countries should look into clarifying and strengthening traditional line item spending for climate change, as that is how it appears the spending will continue into the future. Even beginning to include a definition for "climate change" as a category in the budget would be a useful way for countries to begin.
- The "best" mechanism should be tailored to the country's economic circumstances and specific climate challenges, but the most successful mechanisms emphasize economic efficiency, work outside the political system, and have a minimal fiscal impact.



Financial instruments and mechanisms for climate change programs in Latin America and the Caribbean

A GUIDE FOR MINISTRIES OF FINANCE¹

Introduction

There has been an undeniable increased focus on climate finance in recent years. The international community has agreed that it will be absolutely necessary to channel funds to developing countries to help them mitigate the effects of and adapt to climate change. Recent studies estimate the world's annual climate flows in 2010/2011 account for approximately US\$343-385 billion, only US\$16-23 billion correspond to governmental contributions while 74% of the total climate finance provides from the private sector, and only US\$14 billion target adaptation.ⁱ Given the nature of the climate challenges of the future, developing countries will be recipients of a majority of these flows. Developing country governments receive climate related-financial flows, however, through a wide variety of channels, including: official development assistance, private investment, carbon markets, etc. Nonetheless it is important to mention that the amount of resources needed for climate change adaptation is much higher than international funds available. For example, a report published jointly by the Inter-American Development Bank (IDB), the UN Economic Commission for Latin America and the Caribbean (ECLAC) and the World Wildlife Fund (WWF) estimates that the impacts of climate change for Latin America and the Caribbean (LAC) will cost around US\$100 billion by 2050 while it will only require US\$17-27 billion to adapt to the unavoidable physical impacts. The implication is that adaptation action is clearly cost-effective.ⁱⁱ

Little research has been conducted on the receiving end of these financial flows. How could developing country governments organize their national climate change programs? How can they best use international climate flows to maximize their domestic climate, energy, and environmental goals? Which financial tools will be the most useful for this process? With an eye toward the Latin American and Caribbean (LAC) region, this policy brief outlines the financial mechanisms and instruments that could potentially be used to channel resources into countries' climate change programs. It then offers lessons learned and policy recommendations given LAC countries' experience with different versions of these mechanisms.

¹ More information regarding financial mechanisms for Climate Change in LAC can be found in the Technical Note: Financial Mechanisms for Climate Change Programs in Latin America and the Caribbean. A Case Study, Inter-American Development Bank, Washington D.C., 2012.

The Mechanisms and Financial Instruments

The following section describes some of the new financial mechanisms as well as the instruments, aside from the programs and project specific mechanisms already in use, that could help countries adapt their national financial architecture and reach their country's climate change goals.

The Mechanismsⁱⁱⁱ

(1.) *National Climate Funds*

This long-standing macroeconomic tool has recently been revived to serve climate change goals. A national climate fund is a financial mechanism that allows countries to collect, blend, and manage all the incoming revenue streams, both international and national, related to climate change into one, centralized fund. This, in turn, competitively allocates through a variety of instruments (see below) resources to a variety of “green” projects in the country. These increasingly popular national entities have been playing a crucial role as an interlocutor between the national policies for pursuing low carbon development and the international mechanisms that deliver this aid.

The exact design of a national climate fund will depend on its stated objectives, which areas of the climate change problem focuses on, its scope, how it is capitalized, how projects are funded, and its management structure. The common structure for a national climate fund should include funding sources, governing bodies (both technical and administrative), a trustee, and implementing agents. Experience in the Latin American region with these funds indicates that the governance of the national climate fund should be connected to the government, but autonomous in its investment decisions, allowing it to be more agile and independent from political pressures. While there are certainly lessons learned from similar funds in the region, there cannot be a one size fits all approach to designing a national climate fund in general. Some of the questions a policy maker should take into account when weighing the adoption of this type of mechanism are whether there are already national funds in the country that can incorporate the climate change agenda or a new fund needs to be created and whether this fund will be receiving international resources with associated fiduciary procedures to which the fund will need to comply or will it be funded mainly through domestic resources. Latin American countries have adopted different options depending on their own circumstances. Mexico has a created a new fund under the Climate Change Law of 2012 while El Salvador is redesigning an existing fund (FONAES) to address this need.^{iv}

(2.) *Domestic/National Carbon Markets^v*

Carbon markets were the first international climate finance mechanism that attempted to use a market mechanism to reduce global greenhouse gas (GHG) emissions by putting a price on those emissions. Once they have been created, national and sub-national governments had an oversight and have a smaller level of involvement in these mechanisms as they should function as a private market. While this means the carbon markets revenues are private and cannot be geared towards national priorities, it also maximizes economic efficiency and minimizes corruption.



Currently, carbon offset flows accounted for around USD 4.7 billion in 2011, these markets operate at the international level (through the Development Mechanism (CDM)), the national level (through Europe's Emissions Trading Scheme (ETS), Japan's Emissions Trading System (JETS), and Australia's and New Zealand's more nascent carbon trading schemes), and the state level (through markets like the BM&F Bovespa in Sao Paulo). Carbon markets can be both compulsory and voluntary.

The international carbon market's mechanism, the CDM, has been notoriously difficult to access for most LAC countries, with only 13.5% of total CDM registered and main representation of Brazil and Mexico. As a result, Latin American countries have begun to create voluntary markets, where the currency is not the Certified Emission Reductions (CERS) bonds but the Voluntary Emission Reduction bonds (VERs), such as Chile's Santiago Climate Exchange and the Brazilian Carbon Market. These markets rose out of a desire to stimulate national private industry as well as from frustration with the backlog of actionable projects in the CDM pipeline. Due to a lack of regulation, high transaction costs, and diminished incentives for private sector involvement, however, very little trade has occurred in these local exchanges.

A new trend has developed in the last two years with national carbon markets beginning to take root. Chile, Costa Rica and Mexico are pursuing an emissions trading system similar to the European Emission Trading Scheme, targeted either at a specific sector –energy- or at comply with a specific target (30% emission reductions). These initiatives are at initial stages. Following these developments will allow policy makers to identify lessons to other countries in the region.

The Instruments^{vi}

(3.) *Non-concessional and Concessional Loans*

The private sector is the main source of non-concessional loans, corresponding to USD 262 billion; nonetheless development finance institutions (DFI) -national or international- also enhance investments through concessional loans, characterized by longer repayment terms and lower interest rates, among other terms preferable to market rate loans and equity. This instrument represents 60% of national DFI's finance flow and is estimated to USD \$53.5 billion annually.^{vii} This dominance is not likely to change in the near future, so countries need to think critically about how to use the current loan streams to meet climate change goals.

Concessional loans can, however, be adjusted in the way they are integrated into the budget. In this sense, it may make sense to move beyond the one to one ratio of loan to project funding toward either general budget support or a more programmatic approach, utilizing for example budget support loan from international DFI.^{viii} This allows the financed projects to have a coherent, unified, and domestically-driven focus. Donor institutions can then support the broader climate change goals of the recipient country rather than dispersed projects across various ministries. In this case, clear processes need to be created for how the aid will be allocated to ensure they are actually diverted to climate change objectives, where ministries of finance play a key role. Recipient countries can facilitate this by creating national climate change plans with an associated portfolio of projects and clear, transparent budget mechanisms for allocating the international aid to those projects. The IDB has utilized concessional climate change loans in the form of budgetary support provided to Mexico, Peru, Colombia, Guatemala, Trinidad and Tobago and El Salvador, among others, totaling USD 2 billion in the period of 2008-2013.

(4.) Multilateral and Bilateral Grants

Grants also play an integral role in multilateral and bilateral financing and represent 3.5% climate finance flows, US\$13 billion annually. In the climate and environmental space, grants are normally provided for non-revenue generating activities in recipient countries, such as knowledge management programs, capacity building programs, ongoing activities that do not generate financial return, and technical and costing plans, among other projects. Given that these studies and efforts are necessary pre-cursors to designing sustainable and effective financial mechanisms, governments should look to leverage these grants for capacity and technical needs in the short-term. In the medium and longer-term, grants can be used to help capitalize the financial mechanisms related to adaptation, forestry, and environmental preservation, which are all areas grants have been directed in the past in the LAC region.

Overwhelmingly, the largest source for climate-related grants has been bilateral institutions and international financial institutions. Dedicated climate funds, however, channel a growing portion of the climate grants.^{ix}

(5.) Debt Swaps

Debt swaps involves the sale of foreign currency-denominated debt by creditor nation to an investor (either a non-profit organization or a central bank) who buys the debt at a price that enables a profit margin. The investor can then swap this debt with the debtor nation, in local currency, for shares in a national company or for a wide variety of development projects.^x Debt for environment swaps cover swaps that typically focus on conservation and other “green” projects. Only very recently have debt swaps been expanded to include climate change programs.^{xi} Debt swaps are financed at no extra fiscal cost to the recipient government because, with *swap as you pay* transactions, payments are rerouted to domestic project coffers rather than creditor coffers.

Debt swaps are normally executed from bilateral debt, given political constraints around multilateral swaps. In targeting loans that may be viable to for a swap, it is important to maximize the net present value of the debt selected so that the monthly payments are large enough to solidify a climate change program.

As long as the same staff is around to manage the financial structure of swap, the technical details may not be as important as the design of the expenditure program that the swap will finance. It is important that these expenditure programs contain realistic, well-organized projects in line with both creditor and debtor priorities and housed within institutions with the necessary capacity to ensure their completion.

(6.) Guarantees

Some investments entail inadequate risk-adjusted returns to investors or governments. These conditions prevent project developer from attracting capital through debt on terms that could ensure the feasibility of the project. Guarantees help to mitigate or manage such risks. Guarantee instruments are commitments in which a guarantor undertakes to fulfill the obligations of a borrower to a lender in the event of non-performance or default of its obligations by the borrower, in exchange for a fee. Guarantees can cover the entire investment or just a portion of it.

Guarantees can assume resource, regulatory, off-taker credit, or perceived technology risks that prevent private sector investment at affordable rates. For example, a performance guarantee could reduce the risk that a renewable resource is lower than expected or of construction cost overruns or technology under-performance. Credit guarantees can cover the risk of a contracted power off taker or fuel purchaser going out of business. Both performance and credit guarantees can be valuable for financing energy efficiency investments through Energy Service Company performance contracts. Regulatory guarantees can insure against the loss of supportive tax credits or feed-in-tariffs provided by a host country government or utility.

In the Latin American region, guarantees have been only recently studied and applied for the area of climate change. Chile, Mexico, Brazil, and Colombia are the front-runners in this regard. The IDB is supporting the development of this instrument for geothermal development in Chile and Mexico where one of the main enabling factors has been the availability of highly concessional resources from the Climate Investment Funds. Given the complexity of this instrument, decision makers should evaluate the need for such option based on the overall development goals, the type of projects that respond to those goals and information available in the country that will allow carrying out the financial risk studies for the designing and implementation of guarantees.

(7.) Insurance Instruments

The best approach to mitigating the risk from weather-related disasters is a combination of risk prevention and risk transfer mechanisms. Risk prevention mechanisms should be used by the government for low to medium loss events that happen relatively frequently; lower probability hazards with high-costs and potentially devastating consequences are better covered by risk financing instruments. Low to medium loss events should be mitigated by budget expenditures that reduce vulnerability and create reserve funds.^{xii} When it comes to lower probability events, country governments have historically financed their post-disaster expenses by reallocating budget resources and relying on both loan and grant assistance from the international community.^{xiii}

Economically, it is more efficient to create risk transfer mechanisms that can provide the resources for these types of climate-related disasters and shift loss responsibilities from the sovereign government to the capital market investors. Recent developments in insurance analysis and modeling have resulted in instruments that compensate for some of the market failures that have prevented governments from using these instruments in the past. There are a wide array of these types of mechanisms, ranging in financial complexity, specificity, and management, used by country governments and private sector entities around the world. The following instruments present viable options for financing the type of risk that Latin American and Caribbean countries face in the future:

- Insurance linked securities,
- Contingent capital,
- Contingent credit and loans, and
- Multi-country risk facilities.

PROS

CONS

National Climate Funds	<p>Systematizes and centralizes a country's climate change agenda. Fosters competition among project developers. Allows a more transparent assessment of funding associated with climate change. Portrays an attractive portfolio of projects for international donors. Allows for national ownership of a country's climate change agenda. Serves as a seed for piloting new ideas.</p>	<p>Susceptible to clientilism and corruption. National climate funds remain largely in their pilot stages. National climate funds create another level of bureaucracy and require human capacity.</p>
Domestic/National Carbon Markets	<p>Stimulates the private sector and promotes economic growth. Less government involvement, so projects are more economically efficient.</p>	<p>International sustainability Relatively little national capacity is built as a result of carbon markets. Carbon markets fail to reduce emissions at scale There are high transaction costs for participants.</p>
Concessional and Non-Concessional Loans	<p>Tried and true process that Ministries of Finance are accustomed to and have experience managing. Loans will likely continue to be the bulk of international funding in the region.</p>	<p>Donor overcrowding and lack of strategic organization in the climate change portfolio. Unpredictability of donor flows disrupts budgetary planning capacity. Tightened fiscal environment makes new climate change focused loans unlikely.</p>
Multilateral & Bilateral Grants	<p>Grants present no fiscal cost to the government. Technical and economic studies associated with the mitigation and adaptation to climate change are ideal candidates for grant assistance.</p>	<p>There is a difficult political economy of grant giving in donor countries. It is difficult to guarantee the funds will be spent on climate priorities.</p>
Debt Swaps	<p>Debt swaps present no fiscal cost to the government. Debt for environment swaps can help kick start the development of long term project pipelines.</p>	<p>The viability of a debt swap is contingent upon the availability of appropriate bilateral debt. Debt swaps employ a centralized decision making process on the nature of the expenditure program.</p>
Guarantees	<p>Promotes project development in high risk sectors that might be critical for climate change goals. Potentially Ministry of Finance could access to international resources to ameliorate contingent liability.</p>	<p>Increases contingent liabilities as a result of guarantees. It may impact fiscal deficit. Need highly specialized information about new market (geothermal) and technical capacity that may not be in place.</p>
Insurance Instruments	<p>Provides short-term liquidity for government spending in the face of immediate need. Defends against long-term fiscal insolvency.</p>	<p>High premiums are hard to justify in times of fiscal austerity. Difficulty of incorporating cost uncertainties into budgets and fiscal frameworks. Insurance mechanisms are inherently reactive.</p>



Key findings

Each of the financial instruments discussed in this document is only appropriate in specific economic and country contexts. There can be no one size fits all approach to creating these instruments. It merits to the time to think carefully about which instrument is most appropriate, why the instrument is the best fit, and how to design the mechanism and instrument to ensure incentives are aligned. New financial instruments can be promising, but if not understood fully and regulated properly, could potentially have an unforeseen negative impact on the economy. Therefore, investing time at the outset of creating the mechanism or adopting an instrument to fully understand their design and the implications of their impact is extremely important. Furthermore, staff consistency during the design and implementation of mechanisms and instruments is helpful to ensuring the policies can actually meet their original goals.

Given the characteristics of the LAC region and the constraints created by the fiscal and political situation currently associated with climate change finance, the following lessons learned can help guide policymakers contemplating which climate finance mechanism may be “right” for their country context.

- The decision about which financial mechanism and instrument is most appropriate should proceed from a clear understanding of the exact nature and magnitude of the climate challenges that a country will face, consequently there is a need for more information on mitigation and adaptation scenarios and their associated costs as well as the potential benefits of acting in a low carbon and resilient manner.
- Countries that have created and successfully capitalized climate finance instruments normally have done so in tandem with a national policy plan for climate change. A complementary national climate change plan facilitates the execution of the financing mechanism.
- Create a portfolio of viable, well-vetted climate change projects will not only create a channel factor for international investors, but it will also help Ministries of Finance evaluate its country's climate change portfolios as a whole.
- Coordination between the Ministry of Finance (especially the Office of Public Credit) and Ministry of the Environment is essential for the identification, design and utilization of financial mechanisms for climate change actions. Without a clear understanding and communication between the two ministries the process of creating the instrument can stagnate.
- Since some financial mechanisms redirect funding to the Ministries of Environment it needs to strengthen its ability to design, execute and monitor projects in an efficient and timely manner.
- Financial instruments are more successful when they are set in a conducive regulatory and legal environment.

- Government efforts to mitigate the risk/return ratio for the private sector will increase financing flows for the government by leveraging private investment.
- It is critical to develop a strategy within the Ministry of Finance for contingent liabilities, including those related to extreme adverse weather events.
- Given the level of specificity and technical expertise required, creating a climate change unit within the Ministry of Finance will better equip it to understand, manage, and finance climate change priorities.
- Create a group or designate an individual within the executive branch that can oversee all of the climate change mechanisms supported by the government.
- Climate change capacity building should not only be focused on the government, but also on civil society organizations; the Ministries of Finance should work to build relationships with national civil society organizations.

Policy Recommendations:

The aforementioned lessons learned feed directly into the following policy recommendations for decision makers in public finance regarding climate change and public finance.

- Given the fact that Ministries of Finance face competing demands for fiscal resources in most Latin American and Caribbean countries, the most economically appropriate mechanisms will likely be ones that have a reduced fiscal impact on the countries' budgets and/or are revenue neutral, at least at the beginning.
- Given the diversified streams of incoming financial flows related to climate change, it will behoove countries in the region to flesh out their climate change project portfolios by organizing them both politically, into national climate change action plans, and, economically, into national climate funds.
 - With the crosscutting nature of climate change, related projects tend to be stretched across ministries and levels of government, more so than other national issues; therefore, climate change projects require a concerted effort to centralize.
 - Having this portfolio will make it easier for the Ministry of Finance to prioritize projects by cost and urgency as well as monitor its implementation.
 - Having this portfolio will attract international donors and new revenue streams.
- Comprehensive technical, economic, environmental, and political studies need to be undertaken to understand a country's exact climate change priorities and the potential implications of before any financial and/or fiscal mechanisms and instruments are created.

- Countries in the region need to take concrete steps toward incorporating implicit contingent liabilities in the budget. With the increased frequency and severity of adverse weather events due to climate change, there could be serious fiscal repercussions and depressed revenue and growth if the government does not properly incorporate climate liabilities into the budget. In relation to climate change, this should be done in three concrete steps:
 - Understand which public assets, across various sectors, are most vulnerable to climate change impacts, these assets' net present value and valuable life, and which are absolutely necessary to protect in order to keep the economy functioning at an acceptable level.
 - Implement a low cost, risk prevention strategy for high probability, high cost events.
 - Design insurance instruments for low probability, high cost events to pass the risk along to better-equipped international markets.
- Any climate change instrument should emphasize economic efficiency as much as possible so as to create a sustainable path toward a low-carbon future.

REFERENCES

- Buchner, Barbara, et al. "The Landscape of Climate Finance: A CPI Report." (Venice: Climate Policy Initiative, October 2012)
- Chaum, Miriam, et al. "Improving the Effectiveness of Climate Finance: Key Lessons." Overseas Development Institute, Environmental Defense Fund, Climate Policy Initiative, & Brookings. November 2011
- Ruiz, Marta. "Debt Swaps for Development: Creative Solution or Smoke Screen." Eurodad, October 2007.
- Linnerooth-Bayer, Joanne & Reinhard Mechler. "Insurance against Losses from Natural Disasters in Developing Countries" United Nations, Department of Economic and Social Affairs. DESA Working Paper No. 85. ST/ESA/2009/DWP/85. (New York: United Nations, October 2009), 1-35
- Vergara, Walter, et al. *The climate and development challenge for Latin America and the Caribbean : Options for climate-resilient, low-carbon development*. Inter-American Development Bank World Wide Fund for Nature. United Nations Economic Commission for Latin America and the Caribbean. 2013
- World Bank. 2010. "*Economics of Adaptation to Climate Change: Synthesis Report*". Washington, DC: The World Bank.

ⁱ Buchner, Barbara. "The Landscape of Climate Finance 2012" Climate Policy Initiative.

ⁱⁱ Vergara, W et al. 2013, Pg 14.

ⁱⁱⁱ We define mechanisms as policy options, that Ministries of Finance can utilize to enhance climate sensitive actions which may include income-enhancing mechanisms, such as feed-in tariffs, tradable certificates, tax incentives, and clean energy subsidies, which are most commonly, funded domestically, or mechanisms that seek to increase climate flows in a country. This policy brief focuses on the latter. Other mechanisms include the development of NAMAs, NAPAs, LEDs, among others, that may or may not include in their design Ministers of Finance. For that reason, these mechanisms are not included in this policy brief.

^{iv} More information on these cases can be found in the Technical Note: Financial Mechanisms for Climate Change Programs in Latin America. A Case Study, Inter-American Development Bank, Washington D.C., 2012.

^v While *The Landscape of Climate Finance 2012 Report* considers carbon offset flows as a financial instrument, setting up these national markets is a policy decision and therefore here we consider it as mechanisms that policy makers can design for future financial flows.

^{vi} A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity” (IFRS, IAS 32 Financial Instruments)

^{vii} Buchner, Barbara. “The Landscape of Climate Finance 2012” Climate Policy Initiative

^{viii} Chaum, Miriam, et al. “Improving the Effectiveness of Climate Finance: Key Lessons,” 2011, Pg. 2

^{ix} Buchner, Barbara. “The Landscape of Climate Finance: A CPI Report,” 2011, Pg. iii

^x Ruiz, Marta. “Debt Swaps for Development,” 2007, Pg. 6.

^{xi} For examples, please see the Technical Note: Financial Mechanisms for Climate Change Programs in Latin America. A Case Study, Inter-American Development Bank, Washington D.C., 2012.

^{xii} Linnerooth-Bayer & Reinhard, 2007, Pg. 9

^{xiii} Linnerooth-Bayer & Reinhard, 2007, Pg. 9