CONCESSIONAL CLIMATE FINANCE:

MDB EXPERIENCE AND OPPORTUNITIES

FY11 ENV Knowledge Product

May 31, 2011

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I. EXECUTIVE SUMMARY

A. The need and role for MDB concessional climate finance

The need for climate financing is great and urgent. Stabilizing greenhouse gas (GHG) concentrations below levels considered dangerous will require low-carbon investment in developing countries of some $139-175 billion per annum by 2030. In addition, between $70-100 billion could be needed annually over the next 40 years to finance adaptation to the inevitable impacts of climate change in developing countries. The need is urgent: the cost of adaptation to climate change, including disaster response, will increase the longer investment in mitigation is postponed.

The MDBs are committed to mainstreaming climate change mitigation and adaptation in development finance. Addressing climate change is core to the MDBs’ mission. MDB support to developing member countries in helping them mitigate and adapt to climate change is substantial and growing, primarily through knowledge/advisory services, investment, risk mitigation, and other tools.

MDBs have the experience and capacity to help fill the climate financing gap. The MDBs have been called upon to play a greater role in tackling climate change through strengthened contributions to financing the transition to a green economy. This has been reinforced at the Copenhagen and Cancun COPs which resulted in the decision to create a Green (Climate) Fund with MDB involvement.

This study covers the experience of six major MDBs with concessional climate finance and is an input to the design of the Green Fund. Specifically, it provides an overview of the climate finance challenge and the background of this study (Section II), reviews the conventional and innovative instruments used by the MDBs to deliver concessional climate finance (Section III), assesses the potential for these instruments to help close the financing gap (Section IV), and identifies issues and options for moving forward (Section V).
B. How MDBs deliver concessional climate finance

The MDBs use an array of instruments, often in combination, to support their clients’ climate investment needs. These include conventional instruments as well as innovative financial instruments developed specifically to address climate change.

Conventional instruments include:

- **Knowledge services**, which provide the analytical underpinnings that inform government strategy and identify potential investments, including those supported by MDB operations;
- **Financing operations**, including investment and development policy lending; and
- **Risk-mitigation instruments**, including political risk insurance and guarantees, help facilitate the flow of investment to sectors and countries considered risky by the private sector.

Innovative climate finance instruments and mechanisms include:

- **Grant facilities and concessional lending instruments** which target climate change mitigation and adaptation by reducing barriers to, and buying down the cost of, climate investment;
- **Climate-specific risk management instruments** to transfer risk and provide emergency liquidity;
- **Carbon funds and asset development facilities** that promote low-carbon investment by assigning a value to carbon;
- **Other results-based payment schemes** which pay for environmental services; and
- **Targeted funding instruments** to mobilize funding for climate investment.

These interventions are interrelated: investment and development policy operations spring from long-term country dialogue and careful analytical work; increased availability of funding for operations drives demand for knowledge products; an improved investment climate, combined with the availability of risk mitigation and co-financing from MDBs creates opportunities for private-sector investment. Private-sector investment also benefits from knowledge products and other grant-financed support. This is addressed elsewhere [cite forthcoming EBRD and IFC papers], and is therefore addressed only tangentially here.

**MDBs bring a set of comparative advantages when they provide concessional climate finance.** These include:

- Access to global good practice combined with an ability to tailor this knowledge to local circumstances;
• Opportunities to align climate investment with national development priorities, investment programs and long-term follow-up;
• The capacity to convene top global expertise and resources;
• An ability to mobilize and combine the full menu of instruments and mechanisms required to address specific barriers/issues;
• The power to leverage internal financing as well as external private and public investment; and
• The application of international standards for financial management, procurement, and environmental and social safeguards.

C. Considerations for increasing MDB concessional climate finance

A range of factors may be considered when assessing whether and how to increase the mobilization of concessional climate finance through the MDBs. These include:

• The capacity to leverage investment, in order to make the most of donor funding;
• The ability to mobilize appropriate instruments (and combinations of instruments) to overcome the range of barriers that limit climate investment flows;
• The capacity to facilitate monitoring, reporting and verification (MRV), and to be scaled up; and
• Client country conditions that may affect its ability to access different types of concessional climate finance.

MDB financing offers substantial leveraging of donor funds, enabling each unit of donor funding to mobilize many times as much total financing from other public and private sources. MDBs are able to do this by leveraging donor funds internally—by borrowing against donor commitments to fund their operations—and externally—whereby their participation in operations catalyzes investment by outside parties. Both types of leveraging will be important in meeting the climate financing gap. According to the UN Secretary-General’s High-Level Advisory Group on Climate Financing, “for every US$10 billion in additional resources, multilateral development banks could deliver US$30 billion to US$40 billion in gross capital flows and significantly more by fostering private flows.” The supply of MDB climate finance is constrained by “balance sheet headroom (and the resulting sustainable level of lending), the availability of concessional/grant funds for climate (e.g. CIF-type mechanisms) and the MDB’s own organisational capacity/ability to design and deliver good disbursement channels for climate projects and programmes.”
MDBs deliver a range of instruments that can address many of the barriers that inhibit increased investment in mitigation and adaptation. Table 1.1 maps a range of MDB concessional finance instruments against a range of investment barriers, illustrating that the MDBs offer instruments covering each of the major barriers identified. It also suggests that efficiently addressing barriers to climate change requires the use of appropriate instruments and, in many cases, the combination of a number of different instruments.

### TABLE 1.1: MDB Instruments as Tools for Addressing Climate Change Issues

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Interventions to Address Barrier</th>
<th>Knowledge Services</th>
<th>Financing and Revenue Support</th>
<th>Risk Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Domestic policy reforms</td>
<td>Technical Assistance</td>
<td>Domestic Public Info. Programs</td>
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<tr>
<td>Inadequate returns:</td>
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<td>Carbon externality</td>
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<tr>
<td>Domestic externalities</td>
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<tr>
<td>Country-level climate vulnerability</td>
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<tr>
<td>Public goods associated with technology commercialization</td>
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<tr>
<td>Agency and inter-temporal problems</td>
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<tr>
<td>Energy or fossil subsidies</td>
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<tr>
<td>Risk management issues</td>
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<tr>
<td>Project-related risks (e.g. technology performance)</td>
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<tr>
<td>Lack of information about investment opportunities and climate risks</td>
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<tr>
<td>Country-related risks (e.g. policy inconsistency, expropriation, forex)</td>
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<td></td>
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<tr>
<td>Inadequate access to finance</td>
<td></td>
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<tr>
<td>Incomplete or weak domestic capital markets</td>
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<tr>
<td>Start up barriers (lack of local economies of scale; inertia)</td>
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</tbody>
</table>


Climate-specific characteristics will also determine how MDB concessional finance can be increased. These characteristics include: a) whether the instrument is suited to adaptation, mitigation or both; b) the potential for monitoring, reporting and verifying climate outcomes; c) the potential for an instrument or mechanism to absorb new financing in relation to the availability of investment opportunities; and d) the ease by which a particular type of concessional finance can be scaled up. A summary of these characteristics is presented in Table 1.2.
TABLE 1.2: Selected Characteristics of MDB Climate Finance Instruments

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Mitigation Potential</th>
<th>Adaptation Potential</th>
<th>MRV Potential</th>
<th>Absorptive Potential</th>
<th>Scalability</th>
<th>Cost to MIC Borrower</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conventional Instruments</strong></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Knowledge Services</td>
<td>Mod</td>
<td>High</td>
<td>n.a.</td>
<td>High</td>
<td>Moderate</td>
<td>Below-market</td>
<td>Limited</td>
</tr>
<tr>
<td>Sector Investment Loans</td>
<td>High</td>
<td>High</td>
<td>Mod</td>
<td>High</td>
<td>Moderate</td>
<td>Below-market</td>
<td>Limited</td>
</tr>
<tr>
<td>Development Policy Operations</td>
<td>Mod</td>
<td>High</td>
<td>Lower</td>
<td>High</td>
<td>Rapid</td>
<td>Below-market</td>
<td>Limited</td>
</tr>
<tr>
<td>Guarantees, insurance</td>
<td>High</td>
<td>Moderate</td>
<td>High</td>
<td>Moderate</td>
<td>Commercial</td>
<td>Below-market</td>
<td>Limited</td>
</tr>
<tr>
<td><strong>Climate-Specific Instruments</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Environment Facility</td>
<td>Mod</td>
<td>High</td>
<td>Mod</td>
<td>High</td>
<td>Moderate</td>
<td>Concessional</td>
<td>Limited</td>
</tr>
<tr>
<td>Climate Investment Funds</td>
<td>High</td>
<td>High</td>
<td>Lower</td>
<td>High</td>
<td>Moderate</td>
<td>Grant</td>
<td>Limited</td>
</tr>
<tr>
<td>Adaptation Fund</td>
<td>High</td>
<td>High</td>
<td>Lower</td>
<td>High</td>
<td>Moderate</td>
<td>Grant</td>
<td>Limited</td>
</tr>
<tr>
<td>DPO-Deferred Drawdown Option</td>
<td>High</td>
<td>High</td>
<td>Lower</td>
<td>High</td>
<td>Rapid</td>
<td>Below-market</td>
<td>Limited</td>
</tr>
<tr>
<td>Cat-Deferred Drawdown Option</td>
<td>High</td>
<td>Moderate</td>
<td>High</td>
<td>Rapid</td>
<td>Commercial</td>
<td>Below-market</td>
<td>Limited</td>
</tr>
<tr>
<td>Carbon finance</td>
<td>High</td>
<td>Moderate</td>
<td>High</td>
<td>Low</td>
<td>Commercial</td>
<td>Limited</td>
<td>Unlimited</td>
</tr>
<tr>
<td><strong>Other Instruments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output-based aid</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Rapid?</td>
<td>Concessional</td>
<td>Grant</td>
<td>Limited</td>
</tr>
<tr>
<td>Green Bonds</td>
<td>Variable</td>
<td>Moderate</td>
<td>High</td>
<td>Rapid</td>
<td>Commercial</td>
<td>Unlimited</td>
<td></td>
</tr>
<tr>
<td>Private investment</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
<td>Commercial</td>
<td>Commercial</td>
<td>Unlimited</td>
<td>Unlimited</td>
</tr>
</tbody>
</table>

Conditions in client countries also affect the ability to access and benefit from concessional climate finance. Whether a given instrument can be applied in a particular country will usually depend on a number of country-specific conditions that vary from client to client; these are summarized in Table 4.6 of the study.

D. Opportunities and options

MDBs could increase concessional climate finance through conventional and/or climate-specific approaches. The knowledge base on climate change emerging from a growing portfolio of climate-related interventions is driving client demand for climate finance. These can be supported through existing channels and/or through incremental, innovative finance.

Increased knowledge of climate change-related opportunities and risks is spurring demand from client countries, for more knowledge and more investment. MDBs use their cross-country and sectoral knowledge base to help to identify and scope out interventions. This takes considerable effort, especially in the case of investments in resilience, because such investments require a labor- and data-intensive process of (a) identifying hazards, (b) quantifying risk, and (c) appropriately scoping out investments that reduce exposure and mitigate residual risk. MDBs are well-positioned to support these...
interventions through their conventional operations: investment, policy and risk mitigation, combined with knowledge services through which they convene global expertise and share best practice. Recent MDB capital increases can facilitate this climate-focused financing. Climate-specific funding and operations can also leverage significant additional private investment and increase the focus on climate change within the broader development dialogue.

**Innovative financing instruments can be further developed to expand MDB capacity.** Carbon finance and forest climate financing present opportunities to apply results-based payments for environmental services. Targeted funding mechanisms can be mobilized through the private sector, as demonstrated for example by Green Bonds and MDB support for private-sector investment. Additional capital for both conventional and innovative MDB climate financing could be mobilized through challenge and cornerstone funds.

**MDB concessional climate finance presents certain constraints.** For example, funding for the Adaptation Fund and the potential for programmatic approaches to carbon finance are constrained by the lack of clarity and certainty about the post-2012 carbon market. Donor-funded instruments are constrained by the limited volume of funding pledged. The CIFs, for example, have already fully committed the funding allocated to clean technologies (through CTF and SREP, see below) due to rapid uptake from client countries through the implementing MDBs. Given these constraints, there is increasing interest in instruments that use alternative funding mechanisms, such as Green Bonds and instruments for risk reduction.

**MDBs can move the agenda forward by addressing operational opportunities.** There are opportunities to match sources of support for climate-friendly investment (e.g. donor and investor interest) with specific activities. For example, the UN Foundation-supported Global Alliance for Clean Cookstoves is convening partners to deliver cleaner household energy to “100 million households by 2020,” an objective which aligns with the World Bank Group Energy Strategy’s emphasis on household energy. Applying carbon finance to specific programs supported by the GACC would buy down their implementation costs. Institutionally, increased concessional climate finance will have implications for staffing, organizational structure, budgets, and country-level dialogue.
II. BACKGROUND AND INTRODUCTION

KEY MESSAGES

✓ The need for climate financing is great, urgent, diverse, and largely unmet
✓ MDBs are committed to mainstreaming mitigation and adaptation in development finance
✓ MDBs have been asked to scale up climate financing in the transition to a green economy
✓ Public sector climate finance should focus on reducing barriers and risks, and supporting incentives for low-carbon, climate-resilient development

A. Climate financing needs dwarf available resources

The need for climate financing is great and urgent. Stabilizing greenhouse gas (GHG) concentrations below levels considered dangerous will require low-carbon investment in developing countries of some $139-175 billion per annum by 2030. In addition, between $70-100 billion could be needed annually over the next 40 years to finance adaptation to the inevitable impacts of climate change in developing countries. The need is urgent: the cost of adaptation to climate change, including disaster response, will increase the longer investment in mitigation is postponed. These needs vary by economy, sector and circumstances, as indicated in Box 2.1.

BOX 2.1: Climate Financing Needs are Diverse

The climate challenges for MDB borrowers vary by economy and regional circumstance. Low-income countries (LICs), particularly in Africa, face acute financing needs to meet the challenges of adaptation and sustainable, low-carbon growth. Africa in particular is expected to be strongly impacted by climate change, and faces acute energy and infrastructure needs. Moreover, LICs have relatively low levels of domestic resources to finance their development, and so require a greater overall proportion of concessional finance or grant resources relative to richer countries.

Middle-income countries (MICs) also face challenges. To sustain high growth, they need rapid formation of low-carbon infrastructure particularly for energy supply, transport, buildings and sectors underpinning land use change (forestry and agriculture). The potential for increasing energy efficiency of growth is usually very high in MICs, but is also present in LICs. In general, MICs have a relatively strong policy framework to expand the private sector, fiscal space for public capital expenditure and attract larger levels of foreign capital. These differing climate-related circumstances between countries/regions suggest that the challenge for, and focus of, individual Banks will vary (particularly between the RDBs).

Four main sources of climate finance have been identified to address this need: i) public resources from developed countries; ii) funding from development banks; iii) carbon markets; and iv) private capital. However, the resources that have been committed from these sources to date cover only about 5% of the required investment:

- **Developed countries have committed to mobilizing new and additional resources for climate investments** of $30 billion per year during the period 2010-2012. Donor funding targeted to mitigation and adaptation has recently been made available through new, climate-specific instruments.

- **Much of the additional funding to date has been delivered through the MDBs.** This support has directly and indirectly leveraged substantial additional public and private finance—directly through co-financing, and indirectly through the demonstration effect of delivering transformational investments and by helping countries improve the investment climate and lay the groundwork for further climate investment. “MDB climate change mitigation financing… trebled from $5.4 billion in 2006 to $17 billion in 2009 [see Table 2.1]… accompanied by increased advisory and policy services, alongside the work of the UN in this area.”\(^2\) Notably, in clean energy, WBG support increased about fourfold in the past five years, from $1.2 billion in 2005 to $5.5 billion in 2010. This investment has leveraged additional private investment of several times the level of MDB financing. National and bilateral development banks have also provided substantial support for climate-friendly investment. For example, Brazil's BNDES has a long history of financing hydropower in Brazil, including a recent loan agreement with KfW which is providing a US$68 million loan for small hydropower,\(^3\) and is now supporting forest restoration.\(^4\)

- **Carbon markets** deliver revenues to eligible mitigation investments. The Clean Development Mechanism (CDM, the main flexibility mechanism of the Kyoto Protocol) has generated about €2.2 billion of revenues per annum since its inception in 2008. If a new international framework is agreed, purchases of emission offsets by developed countries could generate as much as US$20-40 billion a year by 2020, assuming a carbon price of $20-$25/tCO2e (Source: AGF). But the prospects of such an agreement are in doubt. Moreover, carbon buyers generally pay on delivery of emission reductions, rather than providing the upfront financing required for investment. The potential for these revenues to leverage upfront climate financing depends on the ability of the carbon markets to deliver predictable cash flows against which financial

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\(^2\)Quoted in UN High-level Advisorty Group (AGF) Work Stream 4 report on “Joint MD B Climate Finance Report” for the AsDB, AfDB, EBRD, EIB, IaDB and the World Bank Group, June 2010 draft.

\(^3\)“BNDES and KFW sign a US$ 68 million agreement to finance PCHs in Brazil,” December 16, 2010; accessed June 1, 2011 at http://www.bndes.gov.br

\(^4\)“BNDES approves three Atlantic Forest restoration projects in the amount of R$ 11.8 million,” May 26, 2011; accessed June 1, 2011 at www.bndes.gov.br
institutions can lend. The uncertain state of the carbon markets does not provide the necessary predictability to make carbon revenues bankable.

- **Private capital provides great potential for climate investment, but it needs the right incentives in order to flow.** Mitigation investments generally cost more upfront, and encounter greater risks and barriers, than conventional (or business-as-usual) approaches. These risks need to either be mitigated or compensated for, and the barriers reduced, in order to mobilize private investment. The AGF concluded that “the multilateral development banks can leverage substantial private finance in climate-related projects. In close collaboration with the United Nations system, they can play a significant multiplier role, leveraging large additional investment in a way that integrates climate action into development programmes.”

<table>
<thead>
<tr>
<th>TABLE 2.1: MDB climate change mitigation financing 2006-2009 ($ billion)</th>
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<tr>
<td>Demand side Energy Efficiency</td>
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<tr>
<td>Renewable Energy</td>
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<tr>
<td>Supply side energy efficiency</td>
</tr>
<tr>
<td>Forestry and land use</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Climate Related Development Policy Loans</td>
</tr>
<tr>
<td>Total investment by MDB</td>
</tr>
<tr>
<td>Total cost of projects/programs</td>
</tr>
</tbody>
</table>

Source: AGF Work Stream 4 Report

### B. The MDBs’ role

The MDBs are committed to mainstreaming climate change mitigation and adaptation in development finance, for several reasons. First, climate change puts client countries at risk. It therefore makes good sense to help them safeguard their people, and their investments in economic development, from the impacts of a changing climate. This implies the need to strengthen the resilience of communities and economies to the immediate impacts of climate variability and climate-related natural disasters, while

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investing in adaptation to longer-term changes. Second, emerging markets provide opportunities for cost-effective greenhouse gas (GHG) emission reductions, many of which can be delivered at zero or less than zero cost, notably in energy efficiency. Third, climate-specific financing can yield local and global economic, social and environmental co-benefits in a range of sectors, ranging from improved forest livelihoods, to reduced local air pollution, to lower energy costs and improved access to modern energy services. Finally, there are opportunities to pursue economic development through lower-carbon growth paths which can be facilitated through the evolving architecture of climate finance. Addressing climate change is core to the MDBs’ mission. MDB support to developing member countries in helping them mitigate and adapt to climate change is substantial and growing, primarily through knowledge/advisory services, investment, risk mitigation and other tools.

The Green (Climate) Fund is intended to be the key conduit for new and additional climate finance. Participants at the Cancun COP decided that a Green Climate Fund should be established with the following working parameters:

- Providing scaled up, predictable and adequate financing for climate change investments in developing countries, with balanced action on adaptation and mitigation;
- Being country-driven in focus, providing finance for programs and projects that are embedded in national plans and strategies, and facilitating sub-regional and regional programs and projects as appropriate;
- Fostering financial innovation and utilizing a variety of financing instruments, such as grants, concessional loans, guarantees, and performance-based financing;
- Maximizing engagement with the private sector and finance activities to reduce barriers for market-based financing and private sector market entrants;
- Leveraging large volumes of additional financing from public and private sources to achieve greater impact; and
- Adopting a rigorous focus on results and a performance-based approach.

The MDBs’ experience in mobilizing climate finance using concessional support can provide lessons that will be useful in considering how best to scale-up climate finance, especially through the Green Fund. Indeed, the MDBs have been asked to provide input to the Transitional Committee which is advising on the development of the Green Fund.

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C. Background and objectives of the study

MDBs have been asked to play an important role in tackling climate change through strengthened provision of coordinated support for mitigation and adaptation financing. The G20 Experts Group on Climate Change produced a discussion paper that calls for significant public (MDB) funding for mitigation and adaptation that is guided by low-carbon and climate-resilient development plans or strategies (G20, 2009). The report notes that “approaches simply based on funding individual actions and projects in isolation are more likely to result in less well-coordinated funding streams for climate finance, and increased transaction costs.” This includes responding to countries’ needs to integrate climate change concerns in their core development strategies, improved domestic policies and to access new sources and innovative types of climate finance.

The Copenhagen Accord (December 2009) embodies a commitment to provide $30 billion of fast-track climate change finance by 2012 that is balanced between mitigation and adaptation. A more ambitious medium-term target of $100 billion per year was set for initiation by 2020. Only about a third of the short-term financing has been pledged so far, much of it likely to be redirected ODA through bilateral channels.

A High-Level Advisory Group on Climate Change Finance established by the UN Secretary General to focus on potential sources of funds that could help meet the Copenhagen Accord goals produced a report in November 2010 which concluded that “for every US$10 billion in additional resources, multilateral development banks could deliver US$30 billion to US$ 40 billion in gross capital flows and significantly more by fostering private flows,” and recommended that “the capacity of the [MDBs] should be strengthened through additional resources in the course of the next decade. This paper explores the concessional climate financing as an avenue for building on MDB capacity.

The goal of this study is therefore to document the MDBs’ experience with the use of concessional finance to support climate investment. Specifically, its objectives are to:

- review the MDBs’ experience in mobilizing climate investment;
- characterize the range of MDBs’ climate financing instruments and mechanisms, including conventional and innovative financial instruments;
- assess these instruments’ suitability for mobilizing, or supporting the mobilization of climate finance; and
- explore options for scaling up the use of these MDB instruments to support climate change mitigation and adaptation.

This study covers the experience of the following six major MDBs but focuses on the World Bank Group as it is an internal document:

- African Development Bank (AfDB)
- Asian Development Bank (ADB)
- European Bank for Reconstruction and Development (EBRD)
EBRD has been tasked with reporting on the concessional climate finance activities of affiliates of these MDBs which invest directly in private companies, including the IDB’s Multilateral Investment Fund (MIF) and Inter-American Investment Company (IIC), and the WBG’s International Finance Corporation (IFC) and Multilateral International Guarantee Agency (MIGA). The activities of these agencies are therefore covered only generally in this paper.

D. A focus for public-sector climate finance

With limited public resources, concessional/public climate finance should focus on leveraging other sources of finance, in particular by reducing barriers and risks, and ensuring that sufficient incentives are provided to encourage the private sector to choose low-carbon, climate-resilient investment. Barriers to climate investment include:

- Inadequate financial returns (relative to risk), especially compared to alternative investments;
- High risk (given the level of returns);
- Incomplete access to finance and risk mitigation instruments—i.e. the inability to secure adequate financing and/or insurance for projects with reasonable risk-return profiles;
- Incomplete information; and
- Principal-agent issues.

Inadequate returns. With some notable exceptions (e.g. energy efficiency), climate investments generally face lower returns than “conventional” investments. The lack of pricing of local and global externalities also favors conventional investments.

High risk. Low-carbon investment face a range of risks, including those related to technology, country, market, regulation and project-specific attributes (e.g. resource availability for a renewable energy project). High risk implies a high cost of capital, which disfavors investments with high upfront costs—even if they offer high returns over time.

Access to finance for climate investments is constrained, relative to “business-as-usual” (which could involve no investment at all, or investment in conventional technologies) because low-carbon investment is typically (a) more expensive upfront (even if operating costs are substantially lower) and (b) riskier—or perceived as riskier by potential investors. Moreover, given constrained financial markets, potential investors may simply choose not to allocate scarce resources to low-carbon investment, given other potential uses.
Information barriers to adaptation and resilience investment are particularly acute. In order even to identify appropriate investments in climate resilience, investors (in this case, typically public-sector investors) would need to understand (a) the hazards to which the investment is exposed, (b) the risk which these hazards create to assets, and (b) the scope of potential investments and other interventions to improve resilience, and the costs and benefits of these alternatives. Incomplete information also constrains economic mitigation investments, notably in energy efficiency, where potential investors may not be aware how quickly potential cost savings can justify investment.

Agency issues impede investment when the investor does not benefit from the investment. Many of these issues are highly complex and apparently intractable. But the MDBs, working in partnership with member countries, international agencies and a range of other stakeholders, and using a range of instruments and interventions, are making strong headway in addressing these barriers.
III. CONCESSIONAL MDB INSTRUMENTS FOR CLIMATE FINANCE

Key Messages

✓ MDBs utilize an array of conventional and innovative instruments and mechanisms to provide concessional climate finance
✓ Conventional instruments include knowledge services, investment operations, policy-based lending, and risk mitigation instruments
✓ Innovative tools include concessional finance for climate investments, climate-specific risk mitigation products, funds/facilities for purchasing carbon credits, and results-based payment schemes

A. Overview of MDB instruments for concessional climate finance

The MDBs provide concessional climate finance through their conventional instruments and through innovative financial instruments developed specifically to address climate change. Conventional instruments include:

- Knowledge services, which provide the analytical underpinnings that inform government strategy and identify potential investments, including those supported by MDB operations.
- Financing operations, including investment and development policy lending.
- Risk-mitigation instruments, including political risk insurance and guarantees, help facilitate the flow of investment to sectors and countries considered risky by the private sector.

Innovative financial instruments and mechanisms targeted to climate change include:

- Targeted grant facilities and concessional lending instruments for climate change mitigation and adaptation that focus on reducing barriers to climate investment and buying down the cost of mitigation and adaptation;
- Climate-specific risk management instruments to transfer risk and provide emergency liquidity;
- Carbon funds and asset development facilities that promote low-carbon investment by assigning a value to carbon;
- Other results-based payment schemes which pay for environmental services; and
- Targeted funding instruments to mobilize funding for climate investment.

These interventions are interrelated: investment and development policy operations spring from long-term country dialogue and careful analytical work; increased availability of funding for operations drives demand for knowledge products; an improved investment climate, combined with the availability of risk mitigation and co-financing from MDBs creates opportunities for private-sector investment. (Private-
sector investment also benefits from knowledge products and other grant-financed support. This is addressed in separate papers by EBRD and IFC, and is therefore addressed only tangentially here.) The MDBs use this array of instruments, often in combination, to support their client’s climate investment needs.

Table 3.1 outlines the instruments offered by the MDBs examined in this study, and indicates global facilities accessible by multiple MDBs.

**TABLE 3.1: MDB Climate Change Mitigation Instruments and Mechanisms**

<table>
<thead>
<tr>
<th>Instrument Type</th>
<th>WBG</th>
<th>Global*</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conventional Instruments</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investment Operations</td>
<td>●</td>
<td>●</td>
<td>Programmatic Loans</td>
</tr>
<tr>
<td>Policy-Based Lending</td>
<td>●</td>
<td>●</td>
<td>Development Policy Operations</td>
</tr>
<tr>
<td>Risk Mitigation Instruments</td>
<td>●</td>
<td>●</td>
<td>MIGA Political Risk Insurance</td>
</tr>
<tr>
<td>Knowledge Services</td>
<td>●</td>
<td>●</td>
<td>Global Environment Facility</td>
</tr>
<tr>
<td><strong>Innovative Financial Instruments (specific to climate change)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate Change Knowledge Services</td>
<td>●</td>
<td></td>
<td>Global Environment Facility</td>
</tr>
<tr>
<td>Concessional Finance for Investments</td>
<td></td>
<td>●</td>
<td>Climate Investment Funds, Adaptation Fund</td>
</tr>
<tr>
<td>Climate-specific Risk Mitigation products</td>
<td>●</td>
<td></td>
<td>Weather risk insurance</td>
</tr>
<tr>
<td>Carbon purchase funds and facilities</td>
<td>●</td>
<td>●</td>
<td>Forest Carbon Partnership Facility</td>
</tr>
</tbody>
</table>

*Implementing agencies may include MDBs and UN Agencies

**B. Conventional MDB instruments targeted to climate finance**

The MDBs to date have financed climate adaptation and mitigation primarily through their conventional instruments: knowledge services, financing (including investment and policy-based lending) and risk mitigation. This section explores MDB experience delivering climate finance through these instruments.
1. Knowledge services

**MDBs coordinate and deliver knowledge to underpin and inform climate investment.** Knowledge services perform several functions: they help guide country and sector dialogue, share knowledge, support early-stage project and program development, and lay the groundwork for future investment by the public and private sector, including those supported by the MDBs. MDB knowledge products include country dialogue, country and sector studies, cross-country analytical work, policy and regulatory advice, capacity building, and a range of other analytical and advisory services. Given the relatively early stage of climate finance relative to traditional sectors, as well as its cross-sectoral nature, substantial resources need to be committed to identifying needs, articulating strategies, supporting reforms, reducing barriers, preparing investment projects, and building institutional capacity.

**In recent years, country dialogue has had an increasing focus on climate.** Since the emergence of climate change as a major development concern, there has been increasing attention to the issue throughout the development process and in a number of affected sectors. For example, at least 60 percent of Country Assistance Strategies supported by the World Bank in the past year have taken climate considerations into account.

**Knowledge sharing on climate change has informed development.** The MDBs convene a range of knowledge-sharing events on climate change. Notably, the World Bank’s Carbon Finance Unit and the International Emissions Trading Association (IETA) organize an annual Carbon Expo, which, since its launch in 2004 has been the largest trade fair and conference for climate and carbon finance, emissions trading and carbon abatement technologies. Donor funding (through CF-Assist) supports client-country participation, facilitating their inclusion in the carbon market. Similarly, ADB sponsors regional Climate Conferences to facilitate knowledge sharing. They also develop country-specific knowledge products. IDA, for example, commissioned 20 “analytical and advisory activities” (AAA) in 2009-10 dealing specifically with adaptation and vulnerability to climate change.

**Sector studies inform low-carbon and climate-resilient investment planning.** MDBs support early-stage project and program development through resource assessments, feasibility studies, and other sector work. For example, the MDBs have supported the development of country-scale low-carbon assessments for all of the G8 “plus 5” countries (e.g. “Brazil Low Carbon Country Case Study” and “Low-Carbon Development for Mexico”). In addition, a number of countries have developed Investment Plans in the context of the Climate Investment Funds, and are seeking assistance from the MDBs in developing frameworks for “Nationally-Appropriate Mitigation Actions” (NAMAs, a set of policies and actions countries undertake as part of a commitment to reduce greenhouse gas emissions) and “National Adaptation Programs of Action” (NAPAs, which provide a process for Least Developed Countries (LDCs) to identify priority activities that respond to their urgent and immediate adaptation needs). To support adaptation, MDBs provide knowledge services to help countries strengthen macro and sectoral climate risk management, upgrade agricultural research, introduce climate risk insurance mechanisms, and improve the climate resilience of infrastructure investments and disaster risk management.
MDB-supported knowledge services supporting climate change mitigation and adaptation are delivered primarily through bilateral and multilateral grant financing, but also through the MDBs’ budgets and retained earnings. A number of trust-funded programs support climate change action for specific sectors, notably the Energy Sector Management Assistance Program (see Box 3.1). Rising awareness and concern about climate change in developing countries has led to their own prioritization of climate change as an issue, resulting in increasing their demand for MDB involvement in both mitigation and adaptation activities.

Box 3.1: ESMAP Knowledge services for low-carbon energy

ESMAP’s mission is to help its client countries increase their know-how and institutional capacity to achieve environmentally sustainable energy solutions for poverty reduction and economic growth. Climate change has been a growing thematic area within ESMAP, and is central to many of its core programs:

- The Energy and Climate Adaptation Initiative, which develops and tests processes to mainstream climate risk management and adaptation into energy sector planning and World Bank operations, and to support awareness raising and knowledge transfer with clients and external stakeholders. It focuses on hands-on learning, developing for example the “Hands-on Energy Adaptation Toolkit (HEAT)” and a CFL Toolkit (see below).

- The Energy Efficient Cities Initiative (EECI), which promotes energy-efficient programs and planning among cities in developing countries.

- The Renewable Energy Market Transformation Initiative fills a gap in renewable energy deployment in developing countries. It concentrates on preparatory work needed in the early stages of project development and provides technical assistance, knowledge sharing, and capacity-building support to help countries gain access to financing.

- Under its Energy Assessments and Strategy Programs, ESMAP supports the development of knowledge products focused on helping low- and middle-income countries explore low carbon opportunities, including preparation of six Low Carbon Growth Country Studies to date.

One illustration of ESMAP’s initiatives is its CFL Toolkit which provides good-practice operational models and templates to help scale up the replication of large-scale, energy-efficient lighting programs.

Investment operations are a large and rapidly-growing source of MDB financing for climate change adaptation and mitigation. MDBs have a long history of working with client countries to develop renewable energy and other low-carbon investments. The increasing emphasis on climate change (dating from the Clean Energy Investment Framework and commitments made at the 2004 Bonn Renewable Energy Conference to increase lending for clean energy—see Box 3.2) as well as a growing
worldwide concern, have spurred substantial growth in MDB climate investment lending in recent years, in a diverse range of sectors including agro-forestry, water, urban development and transportation, as well as clean energy. Investments supporting adaptation have also increased in recent years, with increasing awareness of climate risk, improved analytical tools for assessing it, and a focus on increasing resilience to climate change.

**MDBs have been able to achieve substantial traction in promoting low-carbon development through investment operations when it has been rooted in the host countries’ own development objectives.** For example:

- Hydropower development in Lao PDR (supported by ADB, WB and bilaterals) was initially motivated by the Government’s desire to increase electrification rates, generate foreign exchange earnings through power exports, and reduce diesel imports. New hydropower capacity commissioned through efforts to date are reducing GHG emissions by some 5m tCO2e per annum; these levels could increase to about 20m tCO2e per annum as Lao PDR rolls out its plan to commission an additional 11,000MW by the year 2020.
- In Bangladesh, solar home systems (supported by ADB, WB bilateral agencies and NGOs) have emerged as an important technology for rural electrification due to the high cost of connecting low-usage, remote users to the grid.
- In Sri Lanka, IDA and GEF support for on-grid and off-grid renewable energy in Sri Lanka has supported the installation of 153 MW of mini-hydropower generation.
- District heating (and other power-sector-related) rehabilitation in Eastern Europe and FSU was motivated by financial concerns related to massive increases in energy prices in the 1990s. MDB interventions supporting these priorities—including knowledge, lending and risk mitigation—have yielded substantial greenhouse gas emission reductions.
- Water supply projects often include components to reduce “non-revenue water” and improve pumping efficiency. Although these components are generally targeted toward improving a utility’s financial viability and saving water, they also tend to result in substantial savings in energy and associated greenhouse gas emissions, given that water processing and pumping is energy-intensive.
- Motivated primarily by congestion and local environmental issues, transportation projects often have side benefits of reducing GHGs. MDB-sponsored transport projects also increasingly factor in the need for climate resilience.
- Financial intermediary loans supporting energy efficiency and renewable energy, such as the China Utility-Based Energy Efficiency Finance Program (see Box 3.3).
BOX 3.2: Growth in World Bank Concessional Finance Supporting Clean Energy

“At the Bonn Conference on Renewable Energy, the WBG promised that with the aim of ensuring an institutional focus on the transition toward cleaner energy sources, it would commit to a target of at least 20 percent average growth annually—in both energy efficiency and new renewable energy commitments—over the next five years (fiscal 2005–09). ... The Bonn Commitment was surpassed, with commitments growing from a base of $209 million to $2,061 million in 2008 (IEG calculation) and $3,128 in 2009 (management calculation). Figures 2.3 and 2.4 show the growth in total low-carbon commitments, indicating a sizeable boom in grid-connected renewable energy, much of it large hydropower not counted under the Bonn Commitment.

Energy efficiency grew with large spurts in 2006 and 2008, with financial intermediaries assuming more prominence in the latter period. The growth was mostly in projects that were purely traditionally financed, with a rapid expansion of IFC and IBRD funds, and it occurred disproportionately in the lower-middle-income countries.”


“In 2009-10, IDA doubled its core funding for renewable and energy efficiency from US$103m to US$233m, and executed 20 AAA knowledge products dealing specifically with adaptation.”
Examples of investment operations supporting climate action include:

- **Investment lending for clean energy.** The World Bank Group committed to increase its support for new renewable energy and energy efficiency by nearly $8.8 billion over 2008-2012. From 2008-10, WBG financing commitments to new renewable energy projects more than tripled, to $1.5 billion in 2010. Energy efficiency lending increased 48 percent during the same period. Combined with large hydropower commitments, $3.63 billion was committed for green energy in FY2010, accounting for more than 60 percent of total energy financing. The lending covers approvals for 118 renewable energy and energy efficiency projects in 51 countries, raising the total number of projects of this kind to 428 under way in 100 countries.

- **Programmatic loans: EIB Climate Change Framework Loans.** EIB provides large-scale financing to numerous projects through Framework Loans focused on climate change mitigation and adaptation activities. Notably, it has supported:
  
  - Two Climate Change Framework Loans to China, which are multi-investment schemes under which the EIB supports multiple investments in a range of sectors. The first Framework Loan provided €500 m in EIB financing, supporting projects with a total cost of over €1 billion, in a range of sectors including small forestry schemes (€50 m in financing for investments totaling €90 million) and hydropower in Hubei province (€44 m for investments totaling €71 m). The second provides €500 m in financing for project costing a total of €1.8 billion.
  
  - A €100 million Vietnam Climate Change Framework Loan, for example, will “mainly … support investments in renewable energy and energy efficiency; it could also be used to finance projects that support the EU presence in Vietnam through Foreign Direct Investment, transfer of technology and know-how from Europe.” It “will focus on supporting projects that contribute to climate change mitigation or adaptation, in particular projects promoting the use of renewable energy resources and energy efficiency. The proposed operation could also be used, to a lesser extent, to finance projects that support EU presence in Vietnam.” [http://www.eib.org/projects/pipeline/2008/20080266.htm?lang=en](http://www.eib.org/projects/pipeline/2008/20080266.htm?lang=en)

3. **Policy-based lending with a climate focus**

Policy-based lending has been increasingly used to encourage the consolidation of climate-friendly policy reforms. These operations provide general financing for countries to design and implement their medium-term development policy agendas. Two decades ago, this type of lending focused on macroeconomic adjustment. During the 1990s, many developing countries changed the focus of their policy reform agendas; policy-based lending therefore shifted to support the strengthening of public-sector governance and the financial sector, as well as support to education, health, social protection, natural resource management and the environment. In recent years, policy-based lending has increased its focus on climate change.

Policy-based lending can address climate-related issues in two different ways. First, although safeguard policies do not apply to these operations, an assessment is made during the review process of whether
the specific policies supported by the operation are likely to have significant environmental effects. If an operation has potentially significant effects, the operation needs to address any shortcomings in the borrower’s systems for reducing adverse effects and enhancing positive ones before or during implementation. The second way a policy-based operation can address climate change is for one of its components to specifically support climate-oriented policy reforms.

**MDB experience with climate-focused DPOs:**

- **World Bank Development Policy Operations (DPOs).** Between FY06 and FY09, the World Bank approved 243 DPOs in 66 countries for total financing of $25 billion. The overall share of DPOs in total commitments has increased from around 25% in previous years to about 40% in FY09. In FY09-10, the World Bank approved $7.7 billion of DPOs with climate change considerations for a range of countries including Brazil, Colombia, Costa Rica, Ghana, Guatemala, Indonesia, Mexico, Morocco, Peru, and Turkey (FY09); and Cambodia, Ghana, Indonesia, Mexico, Peru, Turkey, and Vietnam (FY10). A summary of a recent climate-focused DPO is presented in Box 3.4.

- **IBRD’s Development Policy Loans (DPLs)** may be structured with a “deferred drawdown option” (DDO) enabling eligible borrowers to use the DPL as contingent financing, including response to natural disasters (climate-related or otherwise). The DPL-DDO is discussed under Risk Mitigation Instruments, below.

**BOX 3.4: INDONESIA CLIMATE CHANGE DPO**

In May 2010, the World Bank approved a $200 million climate change DPO series that supports the Government of Indonesia’s efforts to develop a lower carbon, more climate-resilient growth path by focusing on three main thematic areas: (i) addressing the need to mitigate Indonesia’s greenhouse gas emissions; (ii) enhancing adaptation and resiliency efforts in key sectors; and (iii) strengthening the institutions and cross-cutting policy framework needed for a successful climate change response. Mitigation focuses on the key sources of emissions and key targets for reduction, namely, (1) forest loss and peat land conversion and burning (land use change/forestry), and (2) the energy sector, where progress can be made on reducing the incentive to over-use fossil fuels and increasing the incentives to develop renewable energy alternatives and promote energy efficiency. Adaptation focuses on improving the framework for climate resilience in agriculture, water management, coastal and marine resource management, as well as disaster preparedness. Institutional development and cross-sectoral issues relate to the need for better technical understanding, policy coordination, and integration of climate change priorities into the national development planning and budgeting system.

SOURCE: World Bank, 2010
The scope for increased use of climate-focused DPOs is significant for several reasons. First, the process of developing and implementing a DPO is based on enhanced policy dialogue within government, typically between the Ministry of Finance and line ministries. Thus, DPOs are a platform that can (a) generate consensus on climate policies amongst government entities and (b) help to resolve policy and institutional bottlenecks that affect national and sub-national climate mitigation and adaptation programs. Second, in many countries, the climate focus can begin with an emphasis on climate-friendly fiscal reform measures that include better implementation of existing fiscal policies (e.g. improved collection of taxes and charges for carbon-emitting activities), natural resource pricing measures (e.g. removal of subsidies for carbon-intensive resources), pollution charges (e.g. emissions taxes), and cost recovery measures (e.g. user charges that cover adaptation costs). The Turkey Environmental Sustainability and Energy Sector DPLs are examples of this approach. Improving the investment climate and altering incentives in favor of low-carbon technologies through DPOs helps create opportunities for scale-up of private-sector low-carbon investment.

4. Risk Mitigation: Guarantees and hedging products

Risk mitigation instruments facilitate private capital flows to sectors and countries considered risky by the private sector. They provide a degree of protection against critical government-performance risks that private lenders are reluctant to assume, enabling project sponsors to access funding on better terms (i.e. for longer tenors and at lower interest rates) than without MDB support. This is important for climate investment because it typically involves higher upfront cost (and hence a longer payback period) and may face greater technology and other risks than conventional or less climate-resilient investments. Risk mitigation is therefore an important tool for mobilizing climate finance, particularly in renewable energy.

The MDBs offer a range of guarantees to commercial lenders:

- **Partial Credit Guarantees** cover a portion of scheduled repayments of private loans or bonds against all risks. These guarantees are usually provided for privately-funded public projects and cover the later maturities, enabling creditors to extend tenors.
- **Partial Risk Guarantees** cover debt service defaults on loans for private-sector projects that are caused by government failures to meet contractual obligations. These are particularly well-suited for mitigating risks related to government performance against contracts such as power purchase agreements.
- **Policy-Based Guarantees** cover portions of the debt service on funds borrowed by eligible member countries from private foreign creditors in support of agreed upon structural, institutional and social policy reforms.
- **Political Risk or Investment Guarantees** provide protection against non-commercial risks—expropriation, currency transfer restrictions, breach of contract—as well as war and civil disturbance, and cover both equity investments and related loans.

Box 3.5 outlines the range of guarantee products offered by the World Bank Group.
BOX 3.5: WBG Guarantee Products

**MIGA Political Risk Insurance (PRI)** offers coverage to foreign direct investors for any combination of the following political risks: currency transfer restriction, expropriation, war and civil disturbance, breach of contract, and non-honoring of sovereign financial obligations. MIGA can insure direct equity, quasi-equity, non-equity direct, and other investments. MIGA guarantees cover new foreign currency-denominated investments, including "new" investments to existing investments, investments by private for-profit and nonprofit organizations, and publicly owned investors and organizations that operate on a commercial basis. MIGA can cover any freely usable currency, which may include local currency investments/loans. Under certain circumstances, MIGA can cover investments by local investors.

**World Bank Partial credit guarantees (PCGs)** support government borrowing from commercial lenders or government bond issues to finance public investment projects. They provide comprehensive cover against all risks. Policy-based guarantees are a type of PCG that are not associated with specific public investment projects, and instead support agreed policy reforms. Both PCGs and PBGs are available only to IBRD countries and require a government counter-guarantee.

**World Bank Partial risk guarantees (PRGs)** cover commercial lenders for a private sector project against default arising from a government-owned entity failing to perform its obligations. PRGs can cover changes in law, failure to meet contractual payment obligations, expropriation and nationalization, currency transfer and convertibility, nonpayment of a termination amount, failure to issue licenses in a timely manner, other risks to the extent they are covered by a contractual obligation of a government entity, and noncompliance with an agreed dispute resolution clause. PRGs can be provided in both IBRD and IDA countries and require a government counter-guarantee.

**World Bank Policy Based Guarantees (PBGs)** cover portions of the debt service on funds borrowed by eligible member countries from private foreign creditors in support of agreed upon structural, institutional and social policy reforms.

**IFC partial credit guarantees** are a credit-enhancement mechanism for debt instruments (bonds and loans). They are an irrevocable promise by IFC to pay principal and/or interest up to a predetermined amount, irrespective of the cause of the payment default. They can be applied to a single credit or to a portfolio of credits.

**IFC Commercial Operation** provides a credit enhancement guarantee in a non-lending situation where the objective is to back up a client’s performance of its obligation in a commercial transaction that involves the provision of goods and services, such as guarantees of bid or performance bonds (called standby letters of credit in the United States).

**IFC Global Trade Finance Program (GTFP)** supports trade transactions by offering confirming banks partial or full guarantees that cover payment risk on issuing banks in emerging markets. Guarantees issued under the GTFP cover import and export transactions and extend to both political and commercial payment risks.

**IFC GOLF.** IFC's Global Offshore Liquidity Facility (GOLF) provides single risk coverage for transfer and convertibility risk

**Hedging products** such as interest rate swaps, interest rate caps and collars, currency swaps and, on a case-by-case basis, commodity swaps, can address borrowers' changing needs during the life of their IBRD loans by effectively transforming their loan obligations. They provide borrowers with the means to manage risk for projects, lending programs and sovereign asset-liability management.

**MDB guarantees** have been successfully used to support the financing of hydropower projects such as Nam Theun 2 in the Lao PDR and Phu My 2 in Vietnam, and for lower-carbon energy as in the case of the Nigeria Electricity and Gas Improvement Project (US$400 million IDA PRG), which will reduce GHGs by connecting users to cleaner, grid-based power generation (see Box 3.6 on MDB risk mitigation support for hydropower development).

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**BOX 3.6: MDB risk mitigation support for hydropower development**

Developing Lao PDR’s rich hydropower resources is key to the country’s objectives of generating foreign exchange earnings to finance development, and to improving access to electricity. Recognizing the need for private-sector financing and expertise to accelerate hydropower development, the government has engaged with the MDBs since the 1990s to support private-sector hydropower development. ADB has supported three hydropower projects in Laos: Nam Leuk (60 MW), Theun Hinboun (280 MW) and Nam Theun 2 (1,075 MW); the World Bank cofinanced Nam Theun 2, along with a range of bilaterals and donors. Much of the MDB assistance has been concessional, through grants as well as through ADF loans and IDA credits, but partial risk guarantees* and support from export credit agencies were also pivotal in attracting private financing. For Nam Theun 2, commissioned in 2010, a total of $1,450m in financing was leveraged by $133m of concessional grants and loans and $250m of guarantees — a ratio of total financing to concessional finance of 10.9 to 1. It is widely recognized that these projects could not have been developed privately without MDB support.

As important as the MDBs’ role in financing these plants was their support to the government in building its technical, legal and institutional capacity for developing hydropower projects. Hydropower now accounts for 30% of the country’s export revenues. Laos has an additional 1,900 MW of hydropower capacity under construction and a total of 12,200 MW under long-term export contracts for commissioning by 2020. ADB is now assisting the government in implementing a renewable energy law. In addition, the MDBs have supported projects expanding electrification and improving energy efficiency, which have yielded very strong rates of return (e.g. ERR of 61% for the World Bank’s Southern Provinces Rural Electrification project), supporting the Government’s parallel goal of increasing rural electrification.

Both the hydropower projects and the electrification/energy efficiency projects will reduce greenhouse gas emissions. Most of the power generated by Theun Hinboun and Nam Theun 2 is exported to Thailand, whose power generation is fossil-fuel-based, thus reducing greenhouse gas emissions by some 5 million tCO2e per annum. Connecting provincial grids (which were primarily diesel-based) to the national grid (which is primarily hydropower-based) would also reduce emissions. But emission reductions were not the motivator for these investments—in fact, they are not CDM projects. The availability of climate finance may help facilitate low-carbon investment, but as the Laos hydropower experience demonstrates, ensuring that climate investments pprovides a country’s objectives is an essential driver of success.

* The partial risk guarantee from the World Bank was from the IBRD, although Lao PDR is IDA-eligible.
A number of instruments and mechanisms have been developed that are tailored—or that can be tailored—to climate finance. In addition to knowledge, financing and risk management tools, these include results-based payment schemes and targeted funding. This section outlines MDBs’ experience with these instruments.

1. Concessional finance targeted to climate finance

Substantial concessional climate finance has been delivered through dedicated multilateral facilities aimed at reducing barriers to climate investment and financing innovation that can be scaled up. The key sources include the Global Environment Facility, the Climate Investment Funds and the Adaptation Fund. Several MDBs also have developed climate-focused facilities which support their own investment programs. Some of these sources can also support risk mitigation instruments (see below).

The Global Environment Facility (GEF), a multilateral financial mechanism established in 1991, is the largest source of grant and concessional finance for mitigation. GEF helps developing countries undertake “win-win” projects to reduce emissions of GHGs that also create local economic, social and environmental benefits. GEF programs take a long-term perspective, transforming energy markets in developing countries by enabling these markets to operate more efficiently and shift away from carbon-intensive technologies. To 2009, the GEF has invested US$2.7 billion to support climate change mitigation projects in developing countries and economies in transition, of which US$1 billion in the 2007-10 period. This funding has leveraged another US$17.2 billion in project co-financing and helped avoid more than 1 billion tons of greenhouse gas emissions, an amount equivalent to nearly 5 percent of annual human emissions. While much of this grant funding is offered to support knowledge products, some is also used for risk mitigation (see box on CHUEE). GEF’s interventions in the area of mitigation focus on reducing barriers to the development of low-carbon technologies through demonstration and commercialization.

The GEF also supports adaptation, providing $50 million to address local adaptation needs and generate global environmental benefits. The GEF’s approach to interventions in adaptation involve a three-stage process: (1) planning through studies to identify vulnerabilities, policy options, and capacity building; (2) identifying measures to prepare for adaptation and further capacity building; (3) promoting measures to facilitate adaptation, including insurance and other interventions, with the ultimate goal of integrating

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8 The GEF supports mitigation activities in six strategic programs:

- Energy efficiency in buildings and appliances
- Industrial energy efficiency
- Market-based approaches for renewable energy
- Sustainable energy production from biomass
- Sustainable innovative systems for urban transport
- Management of land use, land-use change, and forestry (LULUCF)
adaptation policies and measures in all sectors of development, including water, agriculture, energy, health, and vulnerable ecosystems.

The GEF also administers two special adaptation-focused funds with $270 million in resources: the **Least Developed Countries Fund (LDCF)** for development and implementation of National Adaptation Programs of Action (NAPAs) in Least Developed Countries, and the the **Special Climate Change Fund (SCCF)**, which supports adaptation and mitigation projects (including technology transfer) in all developing countries. The LDCF and SCCF build on the experience of GEF’s Strategic Priority on Adaptation (SPA), a US$50 million allocation inside of the GEF Trust Fund provided in 2001 to support pilot and demonstration projects for adaptation planning and assessment, and to integrate them into national policy and sustainable development planning. MDBs and several UN agencies serve as implementing agencies for these funds.

Some of the MDBs manage climate-related, donor-funded technical cooperation facilities that support their own operations. These include:

- **ADB Clean Energy Financing Partnership Facility (CEFPF):** $90 million. Established in 2007, CEFPF coordinates existing and new grant resources to ADB to promote the deployment of new, more efficient and less polluting supply and end-use technologies. CEFPF finances policy, regulatory, and institutional reforms that encourage clean energy development, including:
  
  - Deployment of new clean energy technology
  - Projects that lower the barriers to adopting clean energy technologies
  - Projects that increase access to modern forms of clean and energy efficient energy for the poor
  - Technical capacity programs for clean energy

  CEFPF’s $64 million in disbursements to date have helped leverage some $1.1 billion in clean energy investments (Figure 3.1)

**FIGURE 3.1: Impact of ADB Clean Energy Financing Partnership Facility**

![Impact of ADB Clean Energy Financing Partnership Facility](http://www.adb.org/Clean-Energy/CEFPF.asp)
• **ADB Climate Change Fund (CCF)**: $40 million - The purpose of the fund is to facilitate greater investments in developing countries in Asia and the Pacific to address the causes and consequences of global warming. The fund will provide grant financing for technical assistance, investment projects, research and other activities.

• **IDB Sustainable Energy and Climate Change Initiative (SECCI)** supports climate change adaptation and mitigation (with a focus on sustainable energy) and access to carbon markets in an effort to mainstream these issues throughout the Latin American and Caribbean countries (see Box3.7).

----------------------------------------------------------

**BOX 3.7: IDB’s Sustainable Energy and Climate Change Initiative (SECCI)**

Climate change, environment and food security are among the key priorities for the development agenda in Latin America and the Caribbean over the next decade. With IDB’s support, countries in the region are starting to prepare for the growing challenges that climate change will impose on governments, the economy and society. The IDB is currently financing the design of strategies for adapting to different climate change scenarios as well as the application of new technologies to reduce emissions of greenhouse gases (GHGs). It is also increasing efforts to help Latin America and the Caribbean to achieve sustainable development.

As part of an agreement to increase the IDB’s capital, as much as a quarter of the IDB’s total annual lending by 2015, or about $3 billion a year, will be supporting projects in the areas of climate change, renewable energy and environmental sustainability, a five-fold increase from the current 5 percent.

The IDB’s Sustainable Energy and Climate Change Initiative (SECCI) supports the provision of comprehensive sustainability options in areas related to the energy, transportation, water and environmental sectors as well as building climate resilience in key priority areas vulnerable to the impacts of climate change. The Initiative consists of four strategic pillars:

• Renewable Energy and Energy Efficiency
• Sustainable Biofuel Development
• Access to Carbon Markets
• Adaptation to Climate Change

SECCI provides technical assistance to overcome barriers, build capacity and formulate long-term strategies aimed at tackling climate change and promoting sustainable development. Under SECCI, IDB provides technical assistance for:

• identification and preparation of public- and private-sector climate change mitigation projects;
• capacity building to facilitate access to carbon markets in the region;
• financial institutions to implement climate governance systems, develop innovative schemes and instruments to promote investment in emissions reductions projects and programs, and reducing exposure to climate change risks.

To address the region’s most pressing climate change needs and increase the impact of its interventions, the IDB is currently preparing a new climate change strategy, which is expected to highlight sustainable biofuels as a priority area.
Two new channels have been created to provide concessional financing specifically for climate change mitigation and adaptation activities: the **Climate Investment Funds** and the **Adaptation Fund**.

The **Climate Investment Funds (CIF)** are helping developing countries pilot low-emissions and climate-resilient development. Launched in 2008 as a collaborative effort between member countries and the MDBs (AfDB, ADB, EBRD, IDB and WBG), the CIFs aim to bridge the financing and learning gaps for low-carbon and climate-resilient development between now and a post-2012 global climate change agreement. Governance is balanced, with equal numbers of donor and recipient countries represented. A sunset clause enables closure of the CIF once a new financial architecture has become effective under the UNFCCC regime. Over $6.3 billion in donor pledges and all programs have now been approved, with over forty countries undertaking the CIF pilots.

The CIFs are comprised of two distinct funds, and provide a comprehensive structure through which concessional financing may be made available quickly and flexibly for both low carbon growth and climate resilience activities. The **Clean Technology Fund (CTF)** finances the acceleration of transformation to low carbon growth paths through the cost-effective mitigation of greenhouse gas emissions. The CTF Trust Fund Committee has endorsed $4.35 billion in thirteen country and regional investment plans, leveraging over $40 billion for renewable energy, energy efficiency, and transportation investments in middle-income countries. CTF funds are provided on highly concessional terms [general description of terms—similar to the MDBs’ concessional lending windows]. The **Strategic Climate Fund (SCF)** is made up of three targeted programs with dedicated funding to provide financing to pilot new approaches with the potential for scaling up: the **Pilot Program for Climate Resilience (PPCR)** has pilots underway in nine countries; the **Forest Investment Program (FIP)** has eight pilots totaling $542 million in Brazil, Burkina Faso, Democratic Republic of Congo, Ghana, Indonesia, Laos, Mexico, and Peru; and the **Scaling Up Renewable Energy in Low Income Countries Program (SREP)** currently has six pilots totaling $295 million covering Ethiopia, Honduras, Kenya, Maldives, Mali, and Nepal.

The **Adaptation Fund (AF)** was envisaged under the Kyoto Protocol to assist developing countries that are particularly vulnerable to the adverse effects of climate change in meeting the costs of adaptation, and in financing concrete, country-driven adaptation projects and programs. Institutionally, the GEF serves as the Secretariat for the AF and the World Bank acts as its Trustee. The AF is distinct from other international climate financing mechanisms because it: a) allows for direct access by developing countries to its resources; b) is the first fund to be financed by an international revenue source (2% of CDM emission reduction certificates are channeled to the account of the AF Board); and c) has a governance structure with an overall majority of developing countries, including special seats for country groups that are recognized as particularly vulnerable to climate change. The size of the fund, which will depend on the value and volume of CERs, is estimated to be in the range of $250-440m, although the AF can receive funding from other sources. To date, the World Bank has monetized over 7 million tons of CERs for the AF, raising nearly $120 million.
2. Climate risk mitigation and liquidity facilities

The MDBs have tapped GEF funding to create risk instruments to mobilize climate finance. For example, in the China Utility-Based Energy Efficiency Finance Program, GEF and other donor funds provided first-loss coverage for commercial bank loans for energy-efficiency investments (Box 3.8).

The MDBs have also developed risk-mitigation instruments and liquidity facilities to address climate-related risk issues.

Risk mitigation instruments. MDBs offer a range of products that help manage and transfer the financial risks of climate change to the market. These include:

- The **MultiCat** program, a catastrophe bond issuance platform that enables governments from developing countries to access affordable insurance coverage through the capital markets. Mexico used the platform to issue a $290 million series of notes in October 2009, to insure against earthquake and hurricane risks in specified regions in the country.
- The **Caribbean Catastrophe Risk Insurance Facility (CCRIF)**, offering parametric insurance against major hurricanes and earthquakes to 16 Caribbean countries.
- Index-based insurance programs to help farmers hedge against weather risk, including the **Central American Weather Risk Management Program** developed in Honduras, Guatemala, and Nicaragua and a Malawi weather hedge transaction to provide drought and other weather-related insurance.

Liquidity facilities. MDBs offer liquidity facilities that provide immediate access to lines of credit. IBRD’s deferred drawdown options (DDOs) enable eligible borrowers to postpone drawing down a loan for up to three years after effectiveness, renewable subject to certain conditions. Repayment terms are the same as for regular IBRD loans. There are two types of DDOs: DPL DDOs and Catastrophe DDOs.

- **DPL DDOs** constitute a line of credit to provide immediate liquidity when the borrower needs it, unless the Bank has notified the borrower that one of the drawdown conditions (adequate macroeconomic framework and satisfactory program implementation) is not being met. Following the global financial crisis, some countries sought DPL DDOs in anticipation of shortfalls in public financing for critical programs such as social services, poverty reduction and infrastructure development. DPL DDOs could be used to support long-term financing of low-carbon growth strategies.
- **Cat DDOs** enable eligible IBRD borrowers to activate up to $500 million in borrowing if they declare a state of emergency as a result of a natural disaster. Countries that sign up for the Cat DDO must have an adequate hazard risk management program in place that is monitored by the World Bank. DDOs are being used by developing countries to respond to climate-related and other natural disasters. For example, the World Bank approved a $65m Cat DDO for Costa Rica, which would provide a rapid source of funds in the event of a major natural disaster (flood, hurricane, earthquake, volcano, or landslide).

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3. Carbon funds and carbon asset development facilities

The Kyoto Protocol created “flexibility mechanisms” that enable countries with commitments to reducing GHG emissions to purchase emission reduction credits from developing and emerging-market countries (the Clean Development Mechanism, or CDM, and Joint Implementation, or JI, respectively). The MDBs have played a pioneering role in developing the carbon market, creating vehicles for the purchase and sale of emission reduction credits generated by CDM and JI (Certified Emission Reductions or CERs and Emission Reduction Units or ERUs, respectively), and ensuring that the carbon market reaches a full range of eligible countries and sectors.

The MDBs’ experience with carbon finance has shed light on its limitations; they have introduced new initiatives to address them:

- **Payment on delivery.** Most carbon purchasers pay on delivery of carbon credits, which enhances the viability of projects, but does not provide investment financing. Recognizing this constraint, some carbon funds, such as the ADB Asia Pacific Carbon Fund, offer upfront payment under certain conditions, or facilitate financing alongside the carbon purchase, such as the IFC Post-2012 Carbon Facility, which purchases CERs from projects financed by IFC (see below).

- **High unit transaction costs.** Recognizing the constraints of the project-specific approach—namely the burden of high transaction costs, particularly on small projects—there is an increasing emphasis on a programmatic approach, both through bundling projects under CDM “Programs of Activities” (see CPF and FCPF, below) and through supporting countries in

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**BOX 3.8: China Utility-Based Energy Efficiency Finance Program (CHUEE)**

China’s soaring economy faces a severe shortage of energy resources. Although the Chinese government has identified energy efficiency as a priority, investments in this area are hampered by limited marketing capacities for energy efficiency equipment distributors, and limited access to credit due in part to the limited experience of Chinese commercial banks in sustainable financing.

The CHUEE program, started by IFC in 2006, addresses these issues through two main instruments: bank guarantees for energy efficiency loans, and technical assistance to market players, including utilities, equipment vendors, energy service companies and multi-household residential energy users, to help implement energy efficiency projects. Both types of interventions rely on subsides funded by donors (GEF, Finland and Norway).

As of June 2009, the program’s participating banks had provided loans totaling to 3.5 billion Chinese yuan ($512 million). These loans financed 98 energy efficiency projects, such as heat and gas recovery power generation and the introduction of efficient production systems. The steel, chemical, and cement industries are the largest beneficiaries. These investments have reduced greenhouse gas (GHG) emissions by some 14 million tonnes CO2 equivalent per year, already exceeding the target set at the beginning of the program.

developing sector- and nation-wide approaches, for example through “nationally-appropriate mitigation actions” (NAMAs) and domestic market mechanisms (see Partnership for Market Readiness, below). Furthermore, given the high cost of developing CDM and JI projects, and the new opportunities emerging to generate emission reductions through sectoral approaches, the MDBs and their partners are also supporting carbon asset development facilities and the development of new market instruments.

- **Carbon asset development.** A related issue is the shortage of viable carbon projects, particularly in the least developed countries and for sectors for which carbon markets and methodologies are not fully developed, notably for reduced emissions from deforestation and forest degradation (REDD) and other land-use-related activities. Carbon asset development facilities within some of the new MDB facilities and UN agencies (see FCPF, CPF and ACAD, below) aim to address this constraint.

- **Uncertainty post-2012.** In the absence of clarity about what will happen to the carbon market after the expiration of the Kyoto Protocol, several MDBs have launched carbon funds that will purchase credits beyond 2012.

**Selected MDB carbon funds and facilities:**

The **World Bank Group** pioneered the carbon market in 2000 with the Prototype Carbon Fund. It has developed a total of 12 carbon funds and facilities focusing primarily on segments that were underserved by the private market, notably, small projects with strong ancillary community development benefits, projects in land use change and forestry, and Joint Implementation projects. These have mobilized over $2.5 billion of funding for carbon purchases, half of which has been from donors, and half from the private sector. Recent initiatives include:

- The **Partnership for Market Readiness**, launched in December 2010, will provide a platform to foster new market instruments, harness financial flows and build market readiness capacity for countries to scale up their climate change mitigation efforts. The fund aims to cover a range of market instruments, from domestic schemes, such as emissions trading for carbon or its proxies, such as renewable energy and energy efficiency certificates, to international market instruments such as a reformed CDM and any new scaled-up crediting mechanisms. The fund has a target size of $100m, of which it has received pledges of $25m to date, and is expected to become operational in spring 2011, and

- The **IFC Post-2012 Carbon Facility**, also launched in December 2010, will help address post-2012 market uncertainty by contracting forward purchases of CERs produced through 2020 by IFC client companies and projects financed by IFC’s client banks. Currently such projects have few means of obtaining revenues for carbon reduction due to the expiration of the Kyoto commitment period at the end of 2012. IFC will manage the Facility and participate with up to €15 million for its own account and mobilize up to an additional €135 million in funds from EU-based power utilities and other energy companies.
The Carbon Partnership Facility (CPF), which was launched in December 2009 and became operational in May 2010 with $100 million, helps developing countries to implement programmatic and sector-wide carbon finance interventions that have significant and durable impacts on reducing emissions. The CPF can also consider purchasing carbon credits up to 2022, thus enhancing long-term carbon finance revenues for low-carbon programs. CPF support is being developed sector-wide emissions reduction approaches in areas such as renewable energy and waste management as well as programmatic approaches to energy efficiency, specific renewables (biogas, CSP, geothermal), transport, and city-wide emissions reduction.

The Forest Carbon Partnership Facility (FCPF) was launched at COP13 with $165 million mobilized. The FCPF aims to assist developing countries in reducing emissions from deforestation and forest degradation as well as through sustainable forest management under the efforts on Reducing Emissions from Deforestation and Forest Degradation (REDD+). The FCPF assists developing countries through a Readiness Fund to support capacity building (including elaboration of a REDD strategy, development of a reference scenario and establishment of a monitoring system) and a Carbon Fund to pilot payments for verified emissions reductions in the forestry sector. The FCPF both helps to provide carbon finance to a sector-specific mechanism that was not included in the Kyoto Protocol’s carbon regime and extends carbon financing beyond the 2012 limit. There are thirty-seven participating countries, of which thirteen have signed “REDD readiness grants.”

The ADB has two dedicated carbon funds:

- The ADB Asia Pacific Carbon Fund (APCF), operationalized as a part of ADB’s carbon market initiative (CMI) in May 2007, provides “upfront” finance for CDM projects in return for a proportion of certified emissions reductions to be generated until 2012. The APCF has received funding commitments of $151.8 million from seven European countries.

- The ADB Future Carbon Fund (FCF), launched in 2009 as part of ADB’s carbon market initiative, purchases CERs from projects that will generate carbon credits after 2012. The initial target size of the FCF is $100 million but it may be increased to $200 million if there is sufficient demand.

The EBRD and EIB have jointly developed a post-2012 fund:

- The Multilateral Carbon Credit Fund (MCCF) became operational in 2006. Fully subscribed, with €208.5 million in commitments, the MCCF buys carbon credits from investments under the European Union Emissions Trading Scheme as well as JI and CDM. It also aims to facilitate the direct trading of carbon credits between some of its shareholders (so-called Green Investment Schemes).
This section assesses a range of factors that may be considered for significantly increasing concessional climate finance through the MDBs. First, it evaluates each instrument’s capacity to leverage investment—a key parameter if the global community is to mobilize the necessary volumes of climate finance. Second, it maps the instruments against the range of barriers which need to be addressed in order to promote climate investment flows. Third, it assesses the instruments’ suitability for addressing different climate issues, e.g. supporting adaptation and/or mitigation, facilitating monitoring, reporting and verification (MRV) as well as their scalability. Finally, it examines country conditions that most affect a client’s ability to access different types of concessional climate finance.

A. Leveraging of climate financing

MDB financing offers substantial internal and external leveraging of donor funds, enabling each unit of donor funding to mobilize many times as much total financing. MDBs are able to do this by leveraging donor funds internally, by borrowing against donor commitments to fund their operations, and externally, by catalyzing investment by other parties. Both types of leveraging will be important in meeting the climate financing gap.

Internal leveraging. The amount of internal leveraging of an instrument is a function of its concessionality. MDB instruments provide varying degrees of concessionality (Tables 4.1, 4.2):

- **Grant funds** are 100% concessional, as they represent direct transfers, and so provide only one-to-one internal leveraging of donor funding (less administrative costs).
- **Concessional lending windows** (International Development Association (IDA), African Development Fund (AfDF) and Asian Development Fund (AsDF)) provide long-term credits on highly-concessional terms. Their levels of concessionality range from 20% to 64% (see Table 4.2), funded by donor contributions, refloors and transfers from the MDBs’ retained earnings. The MDBs’ so-called “non-concessional” windows (e.g. IBRD) are also concessional to the extent that (a) MDBs lend on more favorable terms than the borrowing member countries could secure on their own, and (b) concessional/grant funding (both from donors and from the MDBs’
own budgets and retained earnings) is used to support analytical and advisory activities and to
prepare and supervise their operations.

- Investments by the MDBs’ **private-sector units**/affiliates are on commercial terms, although
they also have access to a limited amount of grant funding. These instruments parallel others
that are offered bilaterally and through the private sector.

### TABLE 4.1: Concessionality of Private, Multilateral and Bilateral Funding Sources

<table>
<thead>
<tr>
<th>Pools of Financing</th>
<th>Private</th>
<th>Multilateral</th>
<th>Bilateral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly Concessional</td>
<td>Foundations Carbon Finance</td>
<td>Soft Windows (e.g. IDA Innovative Finance)</td>
<td>ODA</td>
</tr>
<tr>
<td>Less Concessional</td>
<td>Private Debt</td>
<td>MDB Financing (e.g. IBRD)</td>
<td>Bilateral Loans Non-DAC Finance</td>
</tr>
</tbody>
</table>


### TABLE 4.2: Concessionality of Selected MDB Concessional Credits

<table>
<thead>
<tr>
<th>Creditor</th>
<th>Loan Type</th>
<th>Grace Period (yrs)</th>
<th>Maturity (yrs)</th>
<th>Interest Rate</th>
<th>Fees</th>
<th>Service Charge</th>
<th>Commitment Charge</th>
<th>Estimated Concessional (6% discount rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDA</td>
<td>Grant</td>
<td>a/ na</td>
<td>na</td>
<td>na</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Regular IDA credit</td>
<td>b/ 10</td>
<td>40</td>
<td>0%</td>
<td>0%</td>
<td>0.75%</td>
<td>0.05%</td>
<td>61%</td>
</tr>
<tr>
<td></td>
<td>Blend credit</td>
<td>c/ 10</td>
<td>35</td>
<td>0%</td>
<td>0%</td>
<td>0.75%</td>
<td>0.05%</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>Hardened term credit</td>
<td>d/ 10</td>
<td>20</td>
<td>0%</td>
<td>0%</td>
<td>0.75%</td>
<td>0.05%</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Hard term credit</td>
<td>e/ 10</td>
<td>35</td>
<td>3.52%</td>
<td>0%</td>
<td>0.75%</td>
<td>0.05%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>New Blend credit</td>
<td>cd/ 5</td>
<td>35</td>
<td>1.25%</td>
<td>0%</td>
<td>0.75%</td>
<td>0.05%</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>New Hard Term credit</td>
<td>ef/ 5</td>
<td>25</td>
<td>3.52%</td>
<td>0%</td>
<td>0.75%</td>
<td>0.05%</td>
<td>14%</td>
</tr>
<tr>
<td>IDA16 proposed changes</td>
<td>New Blend credit</td>
<td>cd/ 5</td>
<td>35</td>
<td>1.25%</td>
<td>0%</td>
<td>0.75%</td>
<td>0.05%</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>New Hard Term credit</td>
<td>ef/ 5</td>
<td>25</td>
<td>3.52%</td>
<td>0%</td>
<td>0.75%</td>
<td>0.05%</td>
<td>14%</td>
</tr>
<tr>
<td>African Dev Fund (AfDF)</td>
<td>Project Loan</td>
<td>e/ 10</td>
<td>50</td>
<td>0%</td>
<td>0%</td>
<td>0.75%</td>
<td>0.50%</td>
<td>62%</td>
</tr>
<tr>
<td></td>
<td>Lines of credit</td>
<td>f/ 5</td>
<td>20</td>
<td>0%</td>
<td>0%</td>
<td>0.75%</td>
<td>0.50%</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td>Loans to finance specific projects</td>
<td>g/ 8</td>
<td>32</td>
<td>1% &amp; 1.5%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>4%7%</td>
</tr>
<tr>
<td></td>
<td>Program loans to support sector development</td>
<td>h/ 8</td>
<td>24</td>
<td>1% &amp; 1.5%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>41%</td>
</tr>
<tr>
<td></td>
<td>Emergency Assistance Loans</td>
<td>i/ 10</td>
<td>40</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>59%</td>
</tr>
</tbody>
</table>

- a/ Grant eligibility is determined on the basis of a country’s risk of debt distress.
- b/ Regular IDA credits to IDA borrowers with per capita GNI below the operational cut-off (FY10: $1,135), with some exceptions (countries that are not IBRD credit worthy and are undertaking major adjustment efforts and small island economies).
- c/ Blend credits to IDA borrowers that have limited IBRD creditworthiness and a 2008 GNI per capita between US$910 and US$5,730, with some exceptions.
- d/ Hardened terms for borrowers with a per capita income above the operational cut-off for more than two consecutive years.
- e/ Hard-term lending window for blend countries with per capita incomes below the operational cut-off and active IBRD lending programs.

The MDBs’ “non-concessional” and private-sector windows leverage donor funds internally by issuing bonds in international debt markets against their capital base, which includes capital contributed by donors, retained earnings, as well as callable capital (see Fig. 4.1). They are able to raise funds inexpensively due to their high credit quality,\(^9\) which enables the MDBs to lend at substantially lower rates, and for longer tenors, than borrowing member countries are able to secure on commercial markets. (To illustrate, IBRD’s current lending rate for fixed-spread loans up to 12 years is 6-month LIBOR+0.60\(^\%\)\(^10\) which as of this writing totaled 1.06%. As a comparison, as of Jan. 28, 2011, yields on 10-year BBB US corporate bonds averaged 6.24%, and 10-year notes issued by Mexico were 7.21%, Brazil, 4.62%, Colombia, 7.94%, Indonesia, 8.86%, India, 8.12%, Pakistan, 14.22%, S. Africa 8.62%. S. Africa is the only country in Africa that issues 10-year bonds.)

The MDBs’ internal leveraging varies across institutions and over time (Fig. 4.2). Borrowing against their capital base enables MDB to leverage donor commitments from four to ten times (for example, the IBRD’s ratio of total commitments (lending and guarantees) to paid-in capital at the end of FY10 was 4.8:1). They can borrow on the basis of callable capital—funds which the donors can retain unless “called” by the MDBs. Repayment of loans enables MDBs to recycle investments without calling on further donor commitments, and to provide funding to these institutions’ concessional windows.

Additional donor commitments targeted to climate finance would achieve similar internal leveraging. This estimate is consistent with the findings of the U.N. Secretary General’s High-Level Advisory Group on Climate Change Financing (AGF), which estimates that, for every US$10 billion in paid-in capital, MDBs could deliver US$30 billion to US$40 billion in gross flows. The Group notes that this additional climate financing could come from: (a) resources generated via multilateral development banks using current balance sheet headroom; (b) resources created via potential further replenishments and paid-in capital contributions by countries to MDBs (i.e., generating new cash resources for multilateral development banks); and (c) a potential contribution to a dedicated climate-related investment fund financed, for example, through the commitment of special drawing rights (UN, 2010).

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\(^9\) This enables MDB borrowings to achieve AAA rating, based on the institutions’ high levels of capitalization, the sovereign guarantees and preferred creditor status attached to their operations (i.e. loans and guarantees to borrowing member countries), and their conservative investment policies (i.e. risk and liquidity management).

Fig. 4.1: MDB paid-in and callable capital in 2010

Source: “Work Stream 4: Contributions from International Financial Institutions,” analysis carried out by a subgroup within the AGF, from GBRW assessment of MDB balance sheets (May 2010)

Fig. 4.2: Equity to Development-Related Expenditure of the MDBs (1997-2009)

Source: Ibid., p. 7, from GBRW assessment of MDB balance sheets (May 2010)

External leveraging. Climate financing from MDBs also leverages substantial volumes of external financing. An assessment by UNEP-SEFI of different models of public financial mechanisms found typical leverage ratios ranging from 3 to 15:1. “Based on this assessment, it is estimated that if a concerted programme of PFMs were scaled up, USD10 billion in public monies could leverage US$30-$150 billion in total investment in the climate mitigation sectors. This estimate is conservative in that it does not take into account the fact that many PFMs “roll over”, supporting multiple generations of investments, and help create markets that continue to grow after the public funds are expended or
In other words, the estimate does not take into account internal leveraging. Another paper, issued by a sub-group of the UN Advisory Group on Finance, examined the leveraging effect by type of instrument, and found even greater leveraging for some instruments: “the leverage ratio of total project cost to MDB financing ranged between 3.3 and 3.8, with an average leverage ratio of 3.4. Around half of the MDB financing was targeted to the private sector.”

The leverage ratio was substantially higher for some instruments than others, as shown in Table 4.3. Grant-financed equity and guarantees were found to have the highest leveraging effect, estimated at 20:1. But non-grant-financed equity investment (as provided for example by IFC and MIF) was estimated at having a leveraging effect of 8:10:1. Assuming private-sector investments are funded using leveraged donor capital in the same proportion as the MDBs overall (i.e. about 4:1), this implies that the ratio of total investment to donor capital is higher for non-grant-funded equity (32-40:1) than for grant-funded equity (still 20:1).

Case studies corroborate these high levels of external leverage of climate finance: for example, concessional finance (loans and guarantees) to the Nam Theun 2 hydropower project in Lao PDR mobilized private financing of more than 10 times the MDB contribution. EBRD’s SEI experienced a ratio of about 5.8:1, leveraging €30bn of private investment with its own debt and equity investments of €5.2 billion, resulting in some 30.5 m tonnes CO2e emission reductions. EBRD’s target for SEI’s Phase 2 is to leverage project value of €9 to €15 billion with €3 to €5 billion of its own investment and donor funding of €100 million.

**TABLE 4.3: Leveraging Effect of Public Finance Instruments**

<table>
<thead>
<tr>
<th>Public Finance Instrument</th>
<th>Leverage Effect per unit of Funding</th>
<th>MDB Investment per unit of Donor Commitment</th>
<th>Leveraging Effect per unit of Donor Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Non-concessional&quot; debt</td>
<td>2:5 : 1</td>
<td>~4 (capital only)</td>
<td>8-20 : 1</td>
</tr>
<tr>
<td>Concessional debt</td>
<td>1:8 : 1</td>
<td>1.67</td>
<td>2-13 : 1</td>
</tr>
<tr>
<td>e.g. Climate Investment Funds</td>
<td>3:8.5 : 1</td>
<td>1.67</td>
<td>5-14 : 1</td>
</tr>
<tr>
<td>Carbon financeb</td>
<td>4.60-9 : 1</td>
<td>0</td>
<td>n.a.</td>
</tr>
<tr>
<td>Equity investment (in private-sector projects)</td>
<td>8-10 : 1</td>
<td>~4 (capital only)</td>
<td>32-40 : 1</td>
</tr>
<tr>
<td>Grant-financed equity and guarantees</td>
<td>20 : 1</td>
<td>1</td>
<td>20 : 1</td>
</tr>
</tbody>
</table>

* Commitment represents funds allocated. For non-concessional debt, about one-fourth represents paid-in capital; the remainder is callable capital.

For concessional debt, the volume of funds reflects the concessionality of the lending terms. For the MDBs’ concessional windows (e.g. IDA), the concessionality is about [60%], net of reflows (i.e. repayments)

** around $3 of private sector investment per $ of CIF funding for sovereign-guaranteed projects, and $8.5 for private-sector projects.

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B. Using MDB instruments to address climate barriers

Given the scarcity of potential public funding relative to the need for climate investment, a major concern is how to maximize the use of public finance instruments to leverage private-sector investment. A number of studies have examined this issue.

A working group of the UN High-Level Advisory Committee on Finance which assessed “Public Interventions to Stimulate Private Investment in Adaptation and Mitigation”\(^\text{12}\) estimated that “international private investment in mitigation ranging from $100 billion to $200 billion/year” could flow to climate finance, but that “for this level of private investment to be realized, a range of existing country and project specific barriers will need to be overcome by domestic and international public interventions.” It also noted that “Increased private flows to mitigation and adaptation activities in developing countries ... will depend on the extent to which these investments become attractive relative to other opportunities.” The paper identified a range of barriers that are inhibiting the potential flows from being realized:

- Insufficient returns due to inadequate compensation for the carbon externality, non-climate externalities, and other public good attributes that are not incorporated into project financial returns, as well as agency and inter-temporal problems;
- Challenging investment climate, including fossil-fuel subsidies, country-related risk and forest conversion incentives;
- Challenging project risks, including technology and policy risk (e.g. related to regulation and pricing), and country-level climate vulnerability; and
- Inadequate access to finance due to weak or incomplete financial markets, inadequate start-up capital, and incomplete insurance markets;

The MDB instruments outlined above can each play a role in addressing these barriers; some are specifically targeted to some of these purposes. Table 4.4 maps a range of MDB concessional finance instruments against the barriers outlined above, synthesizing the analysis in the HLF Workstream 7 paper. The table makes clear that addressing the barriers to climate change requires a combination of appropriate knowledge, financing and risk management instruments. MDBs are among the only institutions capable of mobilizing the appropriate range of instruments to address this range of issues.


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The existing menu of interventions is largely sufficient, but needs better packaging, strategic focus, and greater scale. As Table 4.4 suggests, the menu of MDB interventions taken together is capable of addressing the full range of barriers identified. But given that a particular country or technology can face a number of these barriers, it is important to be able to strategically package and sequence the relevant instruments to stimulate private investment. MDBs are capable of combining:

- Grants with non-concessional instruments
- Strengthening domestic financial markets using technical assistance and risk mitigation instruments
- Public-private funds.

A similar assessment by UNEP-Sustainable Energy Finance Initiative examined “Public Finance Mechanisms to Mobilise Investment in Climate Change Mitigation,” highlighting a “valley of death” experienced during pre-commercialization of new technologies, and highlighting that a broad range of public interventions can be used to address...the financing gap.” The report goes on to state:

“There is a substantial body of experience with the use of these PFM s for promoting investments in energy efficiency (EE) and renewable energy (RE) technologies, in particular.
Various mechanisms are needed to enable the development and deployment of technology along the **technology innovation pathway**. In developing countries PFMs have mostly been used to support technologies that are in the later stages of innovation but are still facing significant market barriers that inhibit their deployment. In developed countries some mechanisms are also targeting investments in pre-commercial technologies that have yet to enter the market.

If well managed, PFMs can bring down market barriers, bridge gaps and share risks with the private sector. To be successful, however, rather than operating in isolation they **must be aimed at complementing national policy instruments** such as regulations, taxes and market mechanisms. Their role is to help commercial financiers act within a national policy framework, filling gaps and sharing risks where the private sector is initially unwilling or unable to act on its own.

Besides being aligned with policy frameworks, PFMs must also be structured to act along the entire chain of **financial intermediation**, which can include development finance institutions (DFIs), CFIs, investors, equipment manufacturers and technology delivery companies. In **many cases technical assistance (TA) programmes are needed** to build the capacities of these market actors to create a pipeline of investment-ready projects, a pre-condition for leveraging commercial funding.”

The report notes that public financing mechanisms can be made most effective and efficient if they:

- Accurately assess technology market barriers and financial market conditions;
- Target market segments where the project economics are compelling;
- Take a programmatic approach to financial mechanism design;
- Use and strengthen existing capacities throughout the chain of financial intermediation;
- Address the lending or investment criteria of commercial financial actors;
- Define project responsibilities based on a complete roles and risk analysis;
- Include marketing and market aggregation plans; and
- Develop plans for public or donor-supported technical assistance programs to build capacities, fill gaps, and take on any roles or risks not assumed by commercial parties.

The processes that MDBs use to help clients assess market conditions, evaluate economic and financial returns, and develop programmatic approaches including coordination of technical assistance, is consistent with these recommendations.

**MDB instruments are particularly suited for investing in adaptation.** Climate forecasting data on which to base investments to improve resilience and adapt to climate change is still uncertain. Thus, there is utility in having agencies such as the MDBs help to develop and coordinate data collection and evaluation, and to promote sharing of experience and best practice.

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14 Ibid., p. 6.
Meeting the climate finance challenge will require both increasing the amount of public financing allocated, and maximizing its leveraging of private investment. To leverage private investment, Stern (2009) recommends that “government intervention should be guided by three goals:

- Correcting market failures, including environmental, innovation/technology, and financial market failures (“through concessional debt, debt guarantees and financial insurance, as well as policy interventions”)
- Improving the credibility of regulations, and
- Ensuring equity.

C. Mapping climate finance instruments

The range of public finance instruments and mechanisms outlined above may also be assessed against other attributes, for example:

- whether they may be used to support mitigation, adaptation or both;
- whether they have potential to support monitoring, reporting and verification protocols;
• their absorptive potential given current availability of investment opportunities (of course some instruments are focused on developing these investment opportunities);
• their scalability (in terms of both absorptive capacity and ability to deliver funding); and
• their degree of concessionality.

Table 4.5 maps a range of climate finance instruments and mechanisms against these attributes.

Many of the attributes are interrelated. For example, the degree of concessionality may limit the potential volume of funding while increasing the host countries’ demand. The scalability will depend on country- and sector-specific attributes. The effectiveness of any investment will be a function of the quality of the analytical work (i.e. knowledge services) that underpins it, the effectiveness of operations and maintenance, and the adaptability to changing conditions.

**TABLE 4.5. Selected Characteristics of MDB Climate Finance Instruments**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Mitigation</th>
<th>Adaptation</th>
<th>MRV Potential</th>
<th>Absorptive potential</th>
<th>Scalability</th>
<th>Cost to MIC Borrower</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conventional Instruments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge Services</td>
<td>●</td>
<td>●</td>
<td>n.a.</td>
<td>High</td>
<td>Grant</td>
<td>Grant</td>
<td>Limit</td>
</tr>
<tr>
<td>Sector Investment Loans</td>
<td>●</td>
<td>●</td>
<td>High</td>
<td>High</td>
<td>Moderate</td>
<td>Below-market</td>
<td>Limit</td>
</tr>
<tr>
<td>Development Policy Operations</td>
<td>●</td>
<td>●</td>
<td>Lower</td>
<td>High</td>
<td>Rapid</td>
<td>Below-market</td>
<td>Limit</td>
</tr>
<tr>
<td>Guarantees, insurance</td>
<td>●</td>
<td>●</td>
<td>High</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Commercial</td>
<td>Unlimited</td>
</tr>
<tr>
<td><strong>Climate-Specific Instruments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Environment Facility</td>
<td>●</td>
<td>●</td>
<td>Mod</td>
<td>High</td>
<td>Mod</td>
<td>Grant</td>
<td>Limit</td>
</tr>
<tr>
<td>Climate Investment Funds</td>
<td>●</td>
<td>●</td>
<td>Mod</td>
<td>High</td>
<td>Moderate</td>
<td>Concessional</td>
<td>Limit</td>
</tr>
<tr>
<td>Adaptation Fund</td>
<td>●</td>
<td>●</td>
<td>Lower</td>
<td>High</td>
<td>Moderate</td>
<td>Grant</td>
<td>Limit</td>
</tr>
<tr>
<td>DPO-Deferred Drawdown Option</td>
<td>●</td>
<td>●</td>
<td>Lower</td>
<td>High</td>
<td>Rapid</td>
<td>Below-market</td>
<td>Limit</td>
</tr>
<tr>
<td>Cat- Deferred Drawdown Option</td>
<td>●</td>
<td>●</td>
<td>High</td>
<td>Moderate</td>
<td>Rapid</td>
<td>Below-market</td>
<td>Limit</td>
</tr>
<tr>
<td>Carbon finance</td>
<td>●</td>
<td>●</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
<td>Commercial</td>
<td>Unlimited</td>
</tr>
<tr>
<td><strong>Other Instruments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output-based aid</td>
<td>●</td>
<td>●</td>
<td>High</td>
<td>High</td>
<td><strong>Rapid?</strong></td>
<td>Grant</td>
<td>Limit</td>
</tr>
<tr>
<td>Green Bonds</td>
<td>●</td>
<td>●</td>
<td><strong>Variable</strong></td>
<td>Moderate</td>
<td>Rapid</td>
<td>Commercial</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Private investment</td>
<td>●</td>
<td>●</td>
<td>Lower</td>
<td>High</td>
<td>Moderate</td>
<td>Commercial</td>
<td>Unlimited</td>
</tr>
</tbody>
</table>

*Note: The table above includes various climate finance instruments and their characteristics in terms of mitigation, adaptation, MRV potential, absorptive potential, scalability, cost to MIC Borrower, and funding.*
**D. Client country conditions**

Conditions in client countries affect the ability to access and benefit from concessional climate finance. Whether a given instrument can be applied in a particular country will usually depend on a number of country-specific conditions that vary from client to client; these are summarized in Table 4.6 below.

**TABLE 4.6: COUNTRY CONDITIONS THAT MOST AFFECT ABILITY TO ACCESS INSTRUMENT**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Most Binding Country Conditions Affecting Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptation Fund</td>
<td>✓ Country capacity to get approval for direct access from AF Board (if it desires to do so)</td>
</tr>
<tr>
<td>CPF and FCPF</td>
<td>✓ Ability to achieve consensus across a sector in order to present a national program and strategy for carbon financing</td>
</tr>
<tr>
<td>CTF and FIP</td>
<td>✓ Ability to forge consensus across public and private sectors about priority financing within an investment plan or strategy ✓ Ability to comply with CTF conditions (readiness, capacity, etc.)</td>
</tr>
<tr>
<td>Deferred Drawdown Option</td>
<td>✓ Whether the country has had successful experience in the past with DDOs</td>
</tr>
<tr>
<td>Development Policy Operation</td>
<td>✓ Whether the country has had successful experience in the past with DPOs</td>
</tr>
<tr>
<td>Global Environment Facility</td>
<td>✓ Compatibility of national proposals with GEF objectives and requirements</td>
</tr>
<tr>
<td></td>
<td>✓ Interest and experience with using MDBs as GEF implementing agencies</td>
</tr>
<tr>
<td>Output-Based Aid</td>
<td>✓ Strong and enduring government commitment to carry out a performance-based program for a given purpose or sector ✓ High level of accountability for previous use of development assistance ✓ Degree of donor coordination, harmonization and willingness to support country systems</td>
</tr>
<tr>
<td>PPCR</td>
<td>✓ Must be low-income country with capacity to develop a credible climate resilience program ✓ Ability to comply with PPCR conditions</td>
</tr>
<tr>
<td>Private Sector Mechanisms:</td>
<td>✓ Availability of viable investments that can be financed by green bonds</td>
</tr>
<tr>
<td>- Green Bonds</td>
<td>✓ Degree of domestic private sector appetite for increased investment in mitigation and adaptation</td>
</tr>
<tr>
<td>- Private investment</td>
<td>✓ Private sector perception of the existence and potential magnitude of climate-related risks</td>
</tr>
<tr>
<td>- Risk reduction</td>
<td>✓ Financial viability of power utilities to expand low-income access</td>
</tr>
<tr>
<td>SREP</td>
<td>✓ Relative lifecycle cost of renewables compared to conventional power</td>
</tr>
<tr>
<td></td>
<td>✓ Ability to comply with SREP conditions</td>
</tr>
</tbody>
</table>
V. THE FRONTIER: OPPORTUNITIES AND OPTIONS

KEY MESSAGES

- New opportunities exist for expanding the role of MDBs in providing concessional climate financing
- The use of conventional instruments can be expanded
- Innovative instruments like results-based financing, targeted funding mechanisms can be scaled up and mobilizing additional capital
- Opportunities exist to overcome constraints to expanding the role of MDBs
- Operational options exist to allow this expansion to take place

MDBs are at the frontier of concessional climate financing. There are a number of opportunities and options to channel a significant amount of new climate financing through the MDBs in order to leverage resources and increase as well as accelerate impact. First, more resources can be put into conventional instruments that have proven to be effective, i.e. more knowledge products and more investment lending. Second, innovative financing instruments can be scaled up and rolled out, e.g. results-based financing, targeted funding mechanisms and capital mobilization. To make greater use of MDB concessional climate finance, a number of constraints will need to be addressed along with operational considerations.

A. Conventional instruments

Increased knowledge of climate-change-related opportunities and risks is spurring demand from client countries, for more knowledge and more investment. MDBs use their cross-country and sectoral knowledge base to help to identify and scope out interventions. This takes considerable effort, especially in the case of investments in resilience, because such investments require a labor- and data-intensive process of (a) identifying hazards, (b) quantifying risk, and (c) appropriately scoping out investments that reduce exposure and mitigate residual risk. MDBs are well-positioned to support these interventions through the option of increased use of their conventional operations: investment, policy and risk mitigation, combined with knowledge services through which they convene global expertise and share best practice. Recent MDB capital increases can facilitate this climate-focused financing. Climate-specific funding and operations can also leverage significant additional private investment and increase the focus on climate change within the broader development dialogue.
B. Innovative financing instruments

1. Results-based financing

Results-based financing can increasingly be tapped for investing in climate mitigation and adaptation. Results-based mechanisms have been used to increase access to basic services – such as infrastructure, healthcare, and education – for the poor in developing countries. These schemes are typically used in cases where poor people are being excluded from basic services because they cannot afford to pay the full cost. Usually, individual participation also provides some external benefits (positive externalities) — for example, immunization protects the community as well as the immunized person. OBA links the payment of aid to the delivery of specific services or outputs such as connection of poor households to electricity grids or water and sanitation systems, access to education and health care, or installation of solar home systems. Typically, a donor will help a government to subsidize an investment or recurrent costs to compensate for the externalities. Carbon funds and forest climate financing provide promising options for apply a results-based approach.

Carbon funds are a type of results-based mechanism, in that they make payments primarily after the services or outputs have been delivered and verified by an independent agent, and in that, like many other results-based financing schemes, carbon funds pay for an external benefit — in this case, the global externality of greenhouse gas emission reductions.

Forest climate financing. Innovative measures to conserve forests constitute one of the fastest-growing areas of programmatic climate finance. At the 2010 Oslo Climate and Forest Conference, several countries (Australia, France, Japan, Norway, the UK, and the US) agreed to increase the pool of money for this purpose from $3.5 billion to $4 billion during 2010-12. Much of this financing will go to non-market-based approaches whereby payments are made to countries that can demonstrate sustained reductions in deforestation but which are not necessarily linked to the carbon market, i.e. a variant of output-based aid. Norway has been the lead donor supporting this approach, having developed or announced billion-dollar programs with Brazil (see Box 5.1), Guyana and Indonesia. MDB knowledge sharing is being sought in the case of Brazil and MDB experience with trust fund management is being pursued in the latter two countries. The Prince of Wales Rainforest Project is exploring how resources from the capital markets can be mobilized for similar payments, e.g. through green or rainforest bonds.
2. Targeted funding mechanisms

Much of the financing for climate change mitigation and adaptation will need to be mobilized through the private sector. MDBs can facilitate this by increasing the flow of private capital for investment in low-carbon development (e.g. green bonds), stimulating and co-financing direct private investment in climate-friendly activities, and reducing private sector risks from climate change. The U.N. Secretary General’s High-Level Advisory Group on Finance encourages this direction by noting that “international financial institutions could play a particularly important role in terms of financial innovation for climate investment, as they evolve their approach to take account of the new requirements of climate finance” (UN, 2010). This section outlines experience and prospects of a range of new climate-specific funding mechanisms.

Green bonds. Responding to growing interest from socially responsible investors, MDBs have recently begun issuing “green bonds” which raise funding earmarked to low-carbon activities in client countries. Since 2008, the World Bank has issued 22 green bonds in 15 currencies, totaling around $1.6 billion. The African Development Bank issued three “clean energy bonds” in 2010. This builds on earlier achievement and experience of the CER-linked ”COOL“ bonds (a total of $31.5 million was raised through two bonds with coupons tied to CERs generated by specified GHG-reducing projects in China and Malaysia) and Eco Notes linked to special equity indices that support clean energy and / or other eco-friendly sectors (approximately $856 million was raised through five transactions).

BOX 5.1: The Amazon Fund

The Government of Brazil originally proposed a financing mechanism to reduce deforestation in the Amazon at COP13 in Bali in December 2007. It is now formally constituted as the Amazon Fund with the goals of: a) reducing the rate of deforestation in Brazil; b) transforming the reduction of forest emissions into a system that finances the conservation and sustainable use of forests; c) demonstrating the feasibility of approaches to encourage emissions reduction from deforestation; and d) making the standing forest more valuable than its alternative uses. Fundraising is based on effective reduction of CO2 emissions, with resources only raised when emissions in the Amazon fall below a historical 10-year average that is revised every five years. If the deforestation rate in the reference year is higher than the average, the Government will not be able to raise funds that year and will have to compensate the reduction in the following year.

The Fund is managed by the Brazilian Development Bank (BNDES) which supports projects for the conservation of public forests and protected areas, sustainable forest-based economic activities, rehabilitation of degraded forests, improved land use planning and tenure systems, and forest monitoring and environmental enforcement. Up to 20% of total funds can be invested in control and monitoring systems in other Brazilian biomes and other tropical forest countries. These investments are guided by two programs of the Brazilian Government (the Sustainable Amazon Plan and the Action Plan to Prevent and Control Deforestation within the Amazon) as well as the Fund’s Orientation Committee. Norway has pledged donations of up to $1 billion to the Fund over a 4-7 year period.

SOURCE: www.amazonfund.gov.br
Although green bonds do not increase the overall level of MDB borrowing (which is constrained by their capital structure), they provide a model for sovereign, public or private entities. Green bonds issued by these entities with the support and guarantee from an IFI would require only one-fourth of the capital commitment of direct investment by an MDB.

**Private investment.** The International Finance Corporation (IFC) of the World Bank Group and other private sector MDB entities are increasingly supporting investment in climate-friendly business ventures. This is being done as components of investment projects, as stand-alone projects, through dedicated facilities such as the IFC’s Cleaner Production program, and via financial intermediaries. The latter is the most programmatic of these approaches whereby assistance is provided to local commercial banks in order to facilitate more investment in emissions-reducing projects such as energy efficiency and renewable energy (see Box 3). Other initiatives to wholesale climate finance in the private sector include guarantee mechanisms such as the IFC’s carbon delivery guarantee to assure the delivery of carbon credits from projects in developing countries to buyers based in industrialized nations.

The IFC has also engaged with Standard & Poors to develop the first **Global Emerging Market Carbon Efficiency Index.** Launched in December 2009 at COP-15 in Copenhagen, the new index aims to encourage carbon-based competition among emerging-market companies and give carbon-efficient companies access to long-term investors. The World Bank Group and IMF has also explored development of international financing facilities to stimulate more private sector investment in climate change.

### 3. Options for mobilizing additional capital for MDBs

**Two options have emerged for mobilizing finance (particularly from institutional investors) for climate mitigation and adaptation through the MDBs:** Lord Nicholas Stern has characterized these as challenge funds and cornerstone funds. The strength of these financial instruments lies in the fact that they can be deployed at scale, supporting (rather than crowding out) private finance. Mobilizing private sector financing in this way would be consistent with two of the key criteria justifying public intervention: generating investments at the scale needed to tackle climate change, and allocating risk appropriately between public and private entities.

Most institutional investors need to invest in funds that aggregate a number of investments and also diversify risk, since this provides them with certainty that potential losses will be mitigated at the fund level; and that sufficient numbers of attractive deals will be available to the fund. To ensure that investment can be mobilized quickly, **“challenge fund” mechanisms** could be put in place by MDBs in the near to medium term. The challenge fund mechanism would involve the international and regional MDBs creating and bidding out preferential access to “packages of support” i.e. standardized, easily accessible and sizeable packages of instruments which exhibit high private finance leverage potential, such as credit lines, guarantees, debt financing, first loss equity positions, carbon finance facilities etc. Fund managers would tender for the bid, explaining how they would leverage the mechanisms on offer.
to generate investment flows for low-carbon technologies. In addition, the packages of support could also be available for end-investors (such as individual project sponsors).

In the medium to longer term, with the support and convening power of the regional MDBs, regional cornerstone funds (CFs) could be established with a view to leveraging significant private sector financing for low carbon energy, technology and other sectors of climate change mitigation and adaptation. Regional CFs would in their turn invest in smaller funds (such as the China Renewable Energy fund, the India Green Building fund etc) which themselves would invest in individual projects. The investor base of each regional cornerstone fund would consist of institutional investors such as pension funds or sovereign wealth funds, who would be invited to commit some equity seed financing to anchor the cornerstone fund. In addition to helping to set up the CFs, the MDBs would also play a critical role in reducing the risk of the investments made by the end-funds (by providing, for example, risk mitigation instruments such as guarantees or insurance, or through carbon finance).“ (Source: “Meeting the Climate Challenge: Using Public Funds to Leverage Private Investment in Developing Countries: Summary for Policymakers,” 2009)

C. Constraints and Opportunities

MDB concessional climate finance may present specific constraints which can be overcome. For example, when there is greater clarity and certainty about the functioning of the post-2012 carbon market, financing for the Adaptation Fund and the potential for programmatic approaches to climate finance could play a larger role in supporting national and sub-national programs of action. With more experience over time, climate-focused DPOs and CIF investments should be able to demonstrate their effectiveness and attract increased financing. The GEF could increasingly supplement its project-focused financing with a programmatic approach. Increased marketing and awareness raising should be able to reduce the perceived risks and increase interest in mechanisms such as green bonds and instruments for risk reduction. Risks and mitigation options by type of climate finance are presented in Table 5.1 below.
Table 5.1: Key Constraints and Possibilities for Addressing Them

<table>
<thead>
<tr>
<th>Instrument/Mechanism</th>
<th>Constraint</th>
<th>Possible Resolution</th>
</tr>
</thead>
</table>
| Adaptation Fund              | Funding relies on the volume and value of Certified Emission Reductions issued by the CDM.  
Long-term: the future of the Kyoto Protocol arrangements and CDM  
Short-term: slow expansion of the CDM market and low market value of CERs | Reform of CDM process and commitment to post-Kyoto reductions under CDM              |
| CPF and FCPF                 | Long-term: the future of carbon markets and how these mechanisms will be treated under the UNFCCC  
Short-term: MDB requirements and standards slow down implementation, e.g. environmental and social safeguards, financial management, procurement | Modifying MDB procedures and standards to accommodate the higher risks related to innovative activities. |
| Climate Investment Fund      | Sunset clause as limits the duration of the CIFs.                          | Decision to extend CIFs.                                                              |
| Deferred Drawdown Option     | Borrowing countries not willing to incur transaction costs of qualifying for credit line; may not be competitive with alternative sources of standby financing, e.g. domestic borrowing, international contributions for major disasters, government budget | Streamline procedures in order to lower transaction costs; demonstrate competitiveness of DDO terms compared with alternative instruments |
| Development Policy Operation | focus on Finance Ministry when buy-in of line ministries is critical for CC | Provide weaker countries with AAA for policy reforms; broaden policy dialogue in DPO preparation |
| Global Environment Facility  | Current procedure primarily focuses on project-level finance and not programmatic approaches | GEF Council could introduce more flexibility for programmatic financing                |
| Output-Based Aid             | Dependency on donors and their availability of finance                     | Demonstrate effectiveness of OBA for climate change, e.g. forestry, as well as its failure response mechanisms |
| Global Environment Facility  | Uncertainty about post-2012 UNFCCC priorities and procedures               | Maintain flexibility in new GEF replenishment period                                 |
| Private Sector               | • Green bonds  
• Private investment and Risk reduction • Limited market appeal for climate-focused bonds  
• Financial intermediaries unwilling to take risks and pursue opportunities for low-carbon investments  
• Low country interest in identifying and reducing risks | • Increase marketing effort, including CSR angle  
• Expand efforts to document and raise awareness of risks and opportunities  
• Ditto |
D. Operational options

Matching sources of finance with instruments. Multilateral development banks need to tailor instruments to the available sources of finance. Currently, there is growing donor interest in using OBA to obtain climate-friendly results, particularly in the forest sector, and increasing market interest in financing green bonds. If this interest proves to be sustainable, then these instruments can be increasingly used, provided there is commensurate interest on the part of recipients. If not, it may be necessary to shift the emphasis to other scalable approaches.

Institutional considerations. The degree to which an MDB concentrates on or de-emphasizes one or more instruments will have institutional ramifications that include:

- Whether adequate staff are available and properly trained to meet growing demand
- Whether organizational structures will facilitate or impede the use of a particular instrument, e.g. within the World Bank, will increased use of DPOs and DDOs be a source of conflict or cooperation between the PREM (which has traditionally managed development policy lending) and SD networks (which has the mandate for climate change), or whether the CIF resources can be used to finance policy reforms such as DPOs
- If budgets are properly aligned to allow absorb, manage and scale up the application of the more promising instruments or combinations of instruments
- If country-based teams and offices are properly prepared to expand the dialogue with clients in order to assist national and sub-national climate programs via appropriate fast-track instruments
- Whether the dialogue with donors and financiers is being effectively used to clarify the availability and potential of MDB fast-track instruments

MDBs can pursue internal options to move the agenda forward. To expand concessional climate finance and help meet Copenhagen and Cancun commitments, some or all of the following options could be pursued:

- Disseminate this report’s findings internally to MDB management and externally through the UNFCCC, other ongoing processes and at international climate events as well as on a targeted basis to key donors and capital markets
  - Use country-based teams to pursue an intensified dialogue with clients to gauge and develop their interest in benefiting from specific and appropriate fast-track instruments
  - Scale up the development of country-specific Green Finance Frameworks such as those that are being piloted in the East Asia Pacific region by the World Bank for Indonesia, the Philippines and Vietnam
  - Invest in follow-up analysis to document the potential impact of promising instruments for climate mitigation and adaptation
Annex 1: References


Center for American Progress, 2009. “Meeting the Climate Challenge: Core Elements of an Effective Response to Climate Change.”


Global Partnership on Output-Based Aid, 2009. “Output-Based Aid – Fact Sheet,” GPOBA; Washington, DC.


World Bank, 2009. “Beyond the Sum of the Parts: Blending Climate Change Financial Instruments to Expand Impact,” Climate Change Unit/Global Environment Coordination Unit, World Bank; Washington, DC.


Annex 2: Web Links

Links to Instruments and Mechanisms

Adaptation Fund www.adaptation-fund.org
CPF/FSCP www.carbonfinance.org
CIF www.climateinvestmentfunds.org
DPO siteresources.worldbank.org/PROJECTS/Resources/40940-1244732625424/Q&Adplrev.pdf
Fast-Start Finance www.faststartfinance.org
Global Environment Facility www.thegef.org
OBA www.gpoba.org

Private Sector:
  Green bonds treasury.worldbank.org/cmd/htm/CO2LBond.html
  Private investment www.ifc.org/climate
  Risk reduction www.gfdrr.org

Links to MDBs

Asian Development Bank www.adb.org/climate-change
European Bank for R and D www.ebrd.com/pages/sector/energyefficiency/climate
Inter-American Dev. Bank www.iadb.org/secci
World Bank www.worldbank.org/climate change