

CLIMATE FINANCE: KEY CONCEPTS AND WAYS FORWARD

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Climate finance is fundamental to curbing anthropogenic climate change. Compared, however, to the negotiations over emissions reduction timetables, commitments, and architectures, climate finance issues have received only limited and belated attention. Assuring delivery and appropriate use of the financial resources needed to achieve emissions reductions and secure adaptation to climate change, particularly in developing countries, is as vital as agreement on emission caps. Yet, a comprehensive framework on financing for mitigation and adaptation is not in sight. Developed and developing countries cannot agree on even the fundamentals of what should be included (e.g. should private finance through carbon markets be included?), let alone the level and terms of financing commitments, regulatory and other mechanisms, or governance structures.

This impasse, which reflects a lack of trust between developed and developing countries, has manifested itself in basic disagreements over three main issues relating primarily to mitigation finance: first, the necessity of credible and substantial developed country commitments on public funding; second, the role of private finance; and third, the institutions and governance structures to ensure equity and environmental effectiveness.

First, developing countries—wary from a half-century of often-frustrating experience with official development assistance (ODA)—are rightly skeptical of developed country assurances regarding future climate finance through public funding arrangements. The gap between promises and performance in general ODA is well known; low levels of definite financial commitment, commitments made but not kept, linkage of aid delivery to other political agendas, and disappearing donors whose support wanes after initially encouraging a project. Developed countries, on the other hand, are for the most part generally reluctant to sign over large sums of taxpayer money on international projects where their publics do not see both a strong self-interest and effective results. Even when they are willing to spend significant funds, donor countries generally want to maintain flexibility regarding future spending levels depending on experience with program performance, unforeseen developments, and competing priorities.

The second divisive issue is the role of private finance. Developing countries are understandably suspicious of developed countries using conjectured private finance flows as an excuse to shirk their financial responsibilities. There

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is undeniably some temptation for developed country leaders to assign as much of the responsibility as possible to private financial sources or, in any case, to use off-balance sheet modalities to limit political contention over payments from public fiscal sources. Yet, it is inescapable that private as well as public sources must be part of a mitigation finance mix. Agreement on this fundamental point must be first. Bargaining about the extent and character of developed country financial commitments, both public and through markets, should come second.

The third basic source of impasse concerns the institutions and governance structures for public and private finance. Developing countries are seeking to replace or reform existing multilateral institutions such as the World Bank-administered Global Environment Facility (GEF)—dominated by donor countries—in favor of new structures that give them significant decision-making power over cost sharing, conditionality, and disbursement and use of funds. Moreover, achieving far-reaching mitigation will require changes in top-down donor conditionalities to allow a more flexible bottom-up strategy that affords developing countries latitude to develop and pursue locally appropriate mitigation and adaptation initiatives¹. Developed countries, on the other hand, are rightly unwilling to commit funds without adequate financial controls and assurances of positive environmental outcomes. Currently, OECD countries are unilaterally developing domestic or regional cap-and-trade and offset credit systems that will likely become the main vehicle for private climate finance. This threatens to fragment the existing multilateral Clean Development Mechanism (CDM) approach and marginalization of developing countries' role in governance. Furthermore, developed countries are increasingly planning to leverage their public and private financial contributions to achieve maximum emissions reductions, potentially to the financial detriment of developing countries. Yet the role, structure, and governance of both domestic offset and leveraging mechanisms has scarcely been dealt with in the Copenhagen discussions.

It is imperative that agreement be reached on a comprehensive global framework for diversified financing that will include: 1) arrangements for credible developed country commitments on public and private mitigation finance for developing countries, as well as adaptation funding; 2) regulatory and governance mechanisms to ensure effective leveraging of public and private funds to achieve efficient mitigation; and 3) institutional reforms and structures so that developing countries have a significant role in governance and considerable flexibility and initiative to achieve reductions that are funded externally as well as domestically. This framework must be such that the twin goals of reversing anthropogenic climate change and facilitating low-carbon development can viably be funded and achieved.

Magnitude of Climate Finance Required

The magnitude of climate finance required for developing countries must be determined by climate protection objectives. There has been wide agreement that global mean temperatures should not rise more than about 2°C. To achieve this goal, global emissions will need to peak by 2020 and fall 50 percent from 1990 levels by 2050². It is increasingly believed that achieving these reductions will require developed countries to make reductions of 25–40 percent by 2020 and 80 percent by 2050³. The magnitude of these emissions reductions and the costs of achieving them in turn determine the total level of financing required for mitigation actions. For mitigation in developing countries, approximately €55–80bn in financing from developed countries would likely be required annually in additional funds during the period 2010–2020 (an additional €10–20bn is required annually for adaptation)⁴. These amounts are in addition to what developing countries are expected to contribute and business-as-usual growth in both existing CDM offset credit markets and ODA programs. Even on optimistic assumptions about levels of private finance, mitigation funding from developed countries will have to include large public transfers as well as private transfers⁵.

a) Climate finance from private sources

Private finance flows from developed to developing countries will occur primarily through credit offsets in developed country emissions trading systems (ETS). By purchasing offsets to meet their domestic targets, developed country emitters, and their consumers, workers, and shareholders, ultimately finance emissions reductions in developing countries. From the viewpoint of developed countries, these transfers are just as much an expenditure of societal resources as ODA and other public financing mechanisms. Project Catalyst estimates that ETS credit offset programs in developed countries could deliver €15–30bn worth of mitigation in developing countries annually between 2010 and 2020. This estimate assumes not only more stringent caps on developed country emissions than currently proposed, but also that there are significant interventions to leverage the market⁶. Credits are currently granted under the CDM in a one-to-one ratio (1 unit of emissions reduction = 1 ETS emission reduction credit). Leveraging would use a variety of mechanisms, discussed below, to achieve a higher level of emissions reductions obtained for a given level of funding or credit.

b) Climate finance from public sources

Private finance arrangements must be an integral part of any global climate regime, but they will not be sufficient on their own. Public finance and other international sources must fill the gap of approximately €50–70bn annually⁷. Project Catalyst estimates that these sums can be raised via international transport levies (€10–20bn), concessional debt (€4–8bn), a portion (10–15 percent) of the revenue from auctions of domestic emission allowances (€5–20bn), and the remainder through public fiscal revenues (€31–22bn)⁸.

Accounting for Public and Private Financing Commitments

Once developed country commitments on both public and private mitigation finance are negotiated, it will be necessary to account for the resources actually transferred. There are, however, numerous problems, both for public and private financing, in defining such commitments *ex ante* and accounting *ex post* for resources transferred and reductions achieved.

a) Accounting for public climate finance commitments

Public sources of financing will take a variety of forms in addition to direct bilateral or multilateral ODA transfers. These include concessional debt, loan guarantees, and technology transfer arrangements. While there will be substantial conditionality attached to all forms of transfers, it will remain difficult to determine the relationship between the support provided and the expected or actual level of reductions achieved. It will be essential to put in place robust monitoring, reporting, and verification (MRV) arrangements, applicable to both donors and recipients, suitably adapted to the different forms of financing provided. Moreover, supporting measures by host developing countries, including public infrastructure expenditures and regulatory incentives for technology deployment like feed-in tariffs and renewable portfolio standards will also be needed to support the transition to a low-carbon economy and must eventually be included in the analysis.

b) Accounting for private climate finance commitments

There are also significant problems in accounting for private resource transfers and mitigation performance, especially *ex ante*. If the award of offset credits is subject to adequate MRV, emissions reductions achieved can be estimated *ex post*. But *ex ante* estimations will be far more difficult because the dollar amount invested by the private sector to achieve a particular level of reductions will vary among domestic ETS offset credit programs and

over time. These variables will in part be driven by different domestic regulatory conditions that help determine the price that offset credits command in domestic ETS compliance markets and the level of private investment that will be elicited. These include: the terms and conditions on which offset credits for developing country mitigation are recognized in domestic climate regulatory systems; the overall percentage of offset credits, relative to the aggregate emissions cap, that can be used by domestic sources in order to satisfy their regulatory obligations; the stringency of the domestic cap; and the terms of other countries' domestic ETS and offset credit programs. The levels of private investment and mitigation achieved will also be influenced by regulatory arrangements in developing countries for offset credit projects, as well as the extent of regulatory and other support for mitigation investment. Arrangements for leveraging, discussed below, will produce additional complexities and uncertainties. Arbitrage, institutional failure, and corruption must be anticipated. These challenges must be resolved to produce mechanisms for *ex ante* accounting that will reinforce the credibility of private finance commitments as a necessary part of the climate finance deal.

Notwithstanding, a significant advantage of a well-regulated system of private finance through credit offsets is that it can provide good *ex post* measures of the emissions reduction achieved. A global climate finance regime should strive for similar accounting of the emissions reductions achieved by public transfers; this will be a more challenging task. A global climate finance registry, discussed below, would seek to estimate *ex ante* the amounts of various forms of public and private finance undertaken and also their performance *ex post* both in terms of resources transferred and mitigation achieved. The development of the necessary data and accounting and verification techniques to support such a global registry will be a long term, but vital, task.

Leveraging Financing to Maximize Impact

The levels of public and private finance will likely fall short of those needed to meet climate protection goals. Limiting the gap requires that the available resources be used in the most efficient and effective way to maximize the reductions achieved, including through leveraging mechanisms to increase the level of emissions reductions achieved for a given amount of financing.

a) Leveraging public sources

In the case of public financing arrangements, leveraging can take a number of forms: low-interest loan guarantees or concessionary debt in which loans for low-carbon growth are given to developing countries below commercial rates; developed country funds could be used as collateral to secure developing country loans; investment insurance or export credit provided by domestic or international public agencies, to minimize risk for private investors in developing country mitigation projects; or arrangements to catalyze technology transfers, which may include domestic tax or fiscal incentives to developed country manufacturers/patent holders. These and other leveraging options can support and stimulate public mitigation finance by developing countries and private mitigation finance from both developed and developing countries.

b) Leveraging private sources

There are a number of options for leveraging private financing. For example, leverage may be achieved through intermediary carbon banks that would purchase reductions in developing countries at prices approximating the marginal costs of producing them, for example by using reverse auctions. The banks would then sell the reductions at the market price that credit offsets command in developed countries, with the difference used to purchase additional reductions for the benefit of the climate system⁹. As the CDM market illustrates, there is often a large spread

between marginal mitigation costs in developing countries and market prices for developed country compliance credits. Another leveraging technique, contained in the U.S. legislation that passed the House of Representatives, is credit discounting. For example, the U.S. legislation provides that 1.25 offset credits would have to be surrendered to cover 1 unit of domestic emissions by regulated sources¹⁰. Still another approach is to segment the offset credit markets, with different credit offset programs and markets for different categories of mitigation actions, classified based on their position in the marginal mitigation cost curve. For example, there could be one market for emissions reductions through energy efficiency investments that typically achieve reductions at low or negative cost; a second market for land use, agriculture, and forestry mitigation projects characterized by moderate costs; and a third for renewable and other alternative energy projects with relatively high costs. By segmenting the market, more reductions can be achieved with a given amount of investment than through a single market where credits from low and medium-cost mitigation activities command the same price as higher cost projects, with the price determined by the market-clearing marginal mitigation cost.

In addition, supportive host developing country regulatory and other policies can stimulate higher levels of private mitigation investment. Furthermore, if developing countries contribute matching funds or emissions reductions undertakings in concert with financing commitments (public as well as private) from developed countries, additional reductions could be realized for the same developed country investment.

c) Addressing developing country concerns about leveraging

Developing countries will be unhappy with the elimination of 1-1 crediting in a single open credit market and the loss of accompanying economic rents. However, if developed countries commit to significantly higher levels of both private and public funding through credible arrangements, these losses can be more than offset by greater volumes of public and private development finance flowing to developing countries. Such a bargain could provide part of the basis for a comprehensive deal. The bargain must include a developing country role in the design and governance of offset credit market mechanisms, which are currently being established by developed countries unilaterally through domestic legislation and regulation. Transnational credit offset arrangements are likely to emerge initially through bilateral or plurilateral negotiations between individual developed country jurisdictions and major developing countries. The problems concerning the relation between these new private financing arrangements and the CDM or its successor are thorny, but manageable. Eventually a more multilateral and more integrated approach for private finance should emerge that would then contribute to the development of a unified global carbon market; such a market will in turn enhance economic efficiency and climate protection.

Promoting Developing Country Engagement and Initiative in Mitigation

a) Governance reform for public funds

Developing countries are not only demanding stronger commitments by developed countries on public funding as a condition of their participation in mitigation, but also a greater say in the governance of public funding mechanisms and in how funds are used. To achieve the far reaching changes in development pathways required to meet climate protection objectives, developing countries must be afforded the flexibility, scope for initiative, and incentive to formulate and implement mitigation programs that they view and embrace as furthering their development goals. Mitigation actions on the scale required will depend on going beyond individual projects to new, climate-friendly energy and development infrastructure patterns and widespread deployment of new technologies. Successful mitigation on a broad scale will require innovation and leadership roles for developing country authorities at all levels

of international decision-making and integration of mitigation with development strategies and programs¹¹. This more bottom-up approach to mitigation will demand substantial decentralization of decision-making regarding the sourcing, allocation, and use of funds, which can no longer be simply dictated through top-down donor conditions. These steps will help give developing countries a sense of ownership in mitigation programs and both assure them that their development goals will be advanced and further their engagement. At the same time, new forms of conditionality, consistent with this changed approach, will need to be developed to ensure that resources transferred achieve mitigation goals. In addition, new forms of recipient as well as donor accountability, including financial accounting, MRV arrangements to assure mitigation performance, and potentially revised cost-sharing formulas, as well as in-country public participation and good governance, will be required to match the greater decisional role, discretion, and responsibility afforded developing countries¹².

b) The challenge of governance for private mitigation finance

The same policy and institutional requisites, combining voice, flexibility, and accountability for developing countries, exist in private mitigation financing. However, it will be even more challenging to achieve these goals in the case of private financing because it is mostly generated through credit-offset systems established through domestic regulatory legislation and administration by developed countries. In the case of the CDM, determination and administration of regulatory conditionalities on private finance credit offsets, including requirements of environmental and financial additionality, is centralized in a multilateral Executive Board. Significantly more decentralized and complex forms of conditionality and governance will characterize private sector financing based on domestic ETS credit offset programs. Administrative authorities in the EU, United States, and other OECD countries will be charged with developing and applying regulatory standards to determine the qualifications of mitigation activities in other countries and the emissions reductions that they achieve. This will inevitably involve a role for host country authorities in the determination of whether mitigation activities qualify for recognition and in MRV determinations of reductions achieved. MRV arrangements will also require the services of private firms and organizations or other intermediary institutions who may also be involved (as in the CDM) in certifying projects and emissions reductions.

Mechanisms for awarding credits on a sector rather than a project basis will expand the scope for mitigation, but will create new problems such as crediting failures (e.g. where sectoral targets are not achieved because of the failure of one or more individual firms or projects within the sector to meet their individual targets). The operation of carbon banks or the development of segmented carbon markets to leverage private investment flows will present similar challenges. Managing these and other complexities of private mitigation finance will require new institutions, regulatory standards, and programs of cooperation between host country and credit-granting governments. While these arrangements will be built in large part bottom-up, the multiplicity of different mechanisms and regulatory bodies will create serious risks of conflicts and inefficiencies. A multilateral framework to encourage cooperation and a degree of regulatory harmonization in the deployment and regulation of private finance is desirable in order to promote integration of carbon markets and promote cost-effective climate protection. The EU has proposed a High Level Forum on International Climate Finance that may do exactly this¹³. Such an institution must do several things: ensure a sufficient developing country role in these private finance mechanisms; ensure establishment of market structures and regulations that will ensure efficient mitigation; promote convergence in approaches; and take advantage of decentralized initiative and experimentation.

It must be emphasized that the governance structures for public finance and those for private finance cannot long remain entirely separate. At the very least, institutional arrangements must be developed to help target the different

forms of financing based on comparative advantage and reap financing leverage and other synergies that can be generated through public financing and regulatory support of private finance and joint financing schemes.

A Global Registry for Climate Finance

In order to promote and track compliance with a climate finance deal, we envisage a global climate finance registry of funding commitments and actions financed by those funds, including all forms of both private and public finance, and covering both developed and developing countries. Because future climate finance mechanisms will inevitably be highly pluralistic, operating through a variety of bilateral, plurilateral, and multilateral arrangements, a single global registry is needed to recognize and track all of the many different undertakings and programs and present an aggregate accounting. Although there have been proposals for a single global fund to collect and disperse all climate-related finance, such an agreement is politically infeasible and unsuited to advance the policy needs of decentralization, innovation, and experimentation. Moreover, there is no way that such a fund could include private finance through carbon markets, which must play a major role in any carbon finance arrangements. Recognizing that transparency is necessary for countries to judge the efforts of others, hold them accountable, and draw countries into compliance with their commitments, the global registry would build on current proposals for Nationally-Appropriate Mitigation Actions (NAMAs) registries so as to include both public and private financing commitments (including those taking the form of credit offset programs under domestic ETS) from all relevant countries, as well as the fulfillment of these commitments. Such a registry would need to be more ambitious than the current proposal for a Facilitative Platform before the Ad-hoc Working Group on Long-term Cooperative Action (AWG-LCA)¹⁴.

Developing and operating a global finance registry should be the responsibility of an international body enlisting the participation of all nations. This body should seek, in accordance with the discussion above, to develop and apply methodologies to determine the comparability of the different forms of financing, both public and private, and their anticipated and actual performance in reducing emissions. It should accordingly strive to develop performance metrics for emissions reductions achieved through different modes of financing. It must also collect and assure the quality of the data needed to make such determinations with a reasonable degree of accuracy and reliability.

The registry, with a governance structure including developed and developing countries and business and NGO representatives, would not disburse or spend funds or regulate carbon markets. Those actions would be carried out by an array of different international and domestic authorities. The registry would make important contributions by accounting for and reporting on the undertakings and outcomes achieved by these different bodies, serving as a clearing house for best practices for mitigation and adaptation performance assessment methodologies and results-based financial accountability, and promoting harmonization in carbon market credit offset recognition practices by domestic and international regulatory bodies.

The details of such a registry and other elements of a global regime for climate finance cannot feasibly, or appropriately, be resolved in the short term. But the Copenhagen process must, at a minimum, reach agreement on a comprehensive framework and set of principles for both public and private climate finance as well as an agenda for future elaboration and implementation. Such agreement (which should include credible arrangements for significant adaptation as well as mitigation funding) is essential to winning developing country trust and engagement and providing resources sufficient to curb, and adapt to, anthropogenic climate change. An agreed architecture and correlative set of undertakings for developed and developing country emissions reductions is also indispensable. But without the finance to achieve those reductions, the architecture by itself will be largely a facade.

NOTES

¹See *Climate Finance: Regulatory and funding Strategies for Climate Change and Global Development*, Richard B. Stewart, Benedict Kingsbury, and Bryce Rudyk, (eds.), October 2009; particularly Daniel Bodansky (Chapter 4), Arunabha Ghosh and Ngaire Woods (Chapter 16), Navroz K. Dubash (Chapter 18) and Jacob Werksman (Chapter 20), available at www.climatefinance.org.

²Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Stepping up International Finance: A European Blueprint for the Copenhagen Deal, COM(2009) 475/3 at 2.

³Id.

⁴Project Catalyst, *Scaling up Climate Finance: Finance Briefing Paper* (September 2009) at 4, available at www.projectcatalyst.info.

⁵Id., at 3.

⁶Id., at 4.

⁷Id.

⁸Id.

⁹Bert Metz, "Mitigating Climate Change at a Manageable Cost: The Catalyst Proposal," in Stewart *et al.* (eds.).

¹⁰H.R. 2454: American Clean Energy and Security Act of 2009 (Jun. 26, 2009), s. 722(d)(1)(A).

¹¹Navroz K. Dubash, "Climate Change and Development: A Bottom-Up Approach to Mitigation for Developing Countries," in Stewart *et al.*

¹²Athena Ballesteros *et al.*, "Power, Responsibility, and Accountability: Re-Thinking the Legitimacy of Institutions for Climate Finance" (World Resources Institute Working Paper, October 2009), available at www.wri.org.

¹³COM (2009) 475/3 at 12–13; Commission Staff Working Document: Stepping up International Climate Finance: A European Blueprint for the Copenhagen Deal, SEC(2009) 1172/2 at 16–19.

¹⁴Ad Hoc Working Group on Long-Term Cooperative Action Under the Convention, Non-paper No. 54 (November 6, 2009) at Annex X, p. 31.

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