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# Industrialized-Country Mitigation Policy and Resource Transfers to Developing Countries: Improving and Expanding Greenhouse Gas Offsets

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## **THE HARVARD PROJECT ON INTERNATIONAL CLIMATE AGREEMENTS**

The goal of the Harvard Project on International Climate Agreements is to help identify key design elements of a scientifically sound, economically rational, and politically pragmatic post-2012 international policy architecture for global climate change. It draws upon leading thinkers from academia, private industry, government, and non-governmental organizations from around the world to construct a small set of promising policy frameworks and then disseminate and discuss the design elements and frameworks with decision-makers. The Project is co-directed by Robert N. Stavins, Albert Pratt Professor of Business and Government, John F. Kennedy School of Government, Harvard University, and Joseph E. Aldy, Fellow, Resources for the Future. For more information, see the Project's website: <http://belfercenter.ksg.harvard.edu/climate>

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## Abstract

The role of developing country commitments and actions to mitigate greenhouse gas emissions is central to worldwide progress in reducing the risks of anthropogenic climate change. Industrialized-country governments and publics are increasingly concerned that their emissions reduction commitments are unrequited by action in some of the world's largest emitters, especially India and China. Developing countries respond by pointing to the historical responsibility of the global North and stressing their desire to avoid measures that could undermine economic development. This paper offers a proposal for partially resolving this impasse by enhancing existing mechanisms for greenhouse gas offsets, which allow rich countries to finance developing country actions and thereby transfer resources to poorer ones. We frame this proposal in terms of meeting the varying objectives of industrialized and developing countries. The Clean Development Mechanism is the main existing vehicle for offsets but is plagued by high transaction costs--a function largely of its strict accounting rules--and allows for only a narrow set of project-based activities. We call for less emphasis on ton-for-ton accounting and increased reliance on a broader range of activities that can contribute to reduced emissions and adaptation. We also recommend establishing a minimum percentage of developed-country commitments that should be met by funding developing-country actions. Our proposal seeks to incentivize long-term investments and policy changes that address climate change, rather than short-term measures designed to meet largely artificial targets. We identify the elements of our enhanced offsets mechanism that would have to be negotiated by governments and suggest how existing international institutions might be adapted to manage the necessary tasks.



# ***Industrialized-Country Mitigation Policy and Resource Transfers to Developing Countries: Improving and Expanding Greenhouse Gas Offsets***

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## ***1. INTRODUCTION***

Both developing and developed countries hold a central common view in international climate negotiations: each thinks the other should be doing more to mitigate greenhouse gas (GHG) emissions. To date, international negotiations and agreements on climate change have not been particularly successful in creating significant changes in either the commitments or actions by developing countries toward GHG mitigation. Our proposal in this paper is to build on existing offset policies to enhance efforts by developing countries to combat climate change.

For a variety of environmental and political reasons, focusing on developing countries is crucial at this stage in the climate regime's evolution (Frankel 2007). Most obviously, large developing countries—especially India and China—account for an increasingly important share of global emissions as a result of rapid population and GDP growth (Stern 2007: 169). The International Energy Agency forecasts that three-quarters of the increase in global energy use over the next two decades will come from developing countries (IEA 2007). A successful climate architecture will have to include mitigation in these parts of the world. At the same time, the world's largest emitter, the United States, has made participation in binding emissions reduction contingent on actions by large emitters in the South. Thus developing country participation has emerged as the lynchpin of progress in global climate negotiations.

One possibility is to encourage developing countries to participate by assuming mitigation commitments, just as their richer counterparts do. While this is a potentially viable strategy in the long run, it is unrealistic and not essential in the short term. It is unrealistic because these governments have categorically rejected the option of binding targets, appealing to the historical responsibility of the industrialized world, the “common but differentiated responsibility” principle in the 1992 Framework Convention, and their overriding concern

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with unfettered economic development. When the G8 recently pledged to halve their emissions by 2050, a group of large developing countries refused to sign on—even though the commitment is aspirational and nonbinding. Fortunately, we argue, developing country emissions commitments are not essential given that there are other ways—both politically viable and environmentally effective—to achieve progress in GHG reduction in the developing world.

We propose to succeed the Clean Development Mechanism (CDM) with a much more expansive approach to the use of carbon offsets in the developing world as a way to reduce GHG emissions. We call for less emphasis on strict ton-for-ton accounting, with its high transaction costs, and increased reliance on a broader range of activities than the relatively narrow set of projects currently pursued under the CDM. We also recommend establishing a minimum percentage of developed-country commitments that should be met by funding developing-country actions. Our proposal seeks to incentivize long-term investments and policy changes that address climate change over short-term measures designed to meet largely artificial targets. The focus is thus on effectiveness rather than on politically derived goals. We identify which elements of the enhanced offsets mechanism would have to be negotiated by governments and suggest how existing international organizations might be adapted to manage it.

We do not claim our proposal is a complete solution, only that it offers one avenue for improvement of the current situation and may help international policy evolve in a productive direction. We also do not believe that this is the only path for progress in enhancing the participation of developing countries in international efforts to reduce GHG emissions—there are other policies or foci of negotiation that could be as or more effective (or achieve the same ends with different institutions than we propose). We think the attractiveness of what we are proposing is that it can be seen as an evolution of current policies and has characteristics that may overcome political and diplomatic barriers that prevent alternatives from being implemented. In any event, there is nothing we advocate that precludes other approaches if they prove to be financially, politically, and diplomatically viable.

Our proposal contains five elements:

1. Change the criteria for offsets from “real, verifiable, and permanent reductions” to “actions that create real progress in developing countries toward mitigation and adaptation”
2. Make a significant share of industrialized country commitments (whether international or domestic) achievable through offset payments to developing countries
3. Put a specific or minimum quantity of offset credits in a fund ex-ante whose expenditure is governed by the principles and institutions described below
4. Make the principles for actions taken in developing countries that qualify as offsets the specific focus of negotiation among state parties
5. Delegate clearly delineated tasks to existing international organizations and new institutions for the purpose of managing and safeguarding the offsets program, consistent with negotiated guidelines

We proceed by first giving a sketch of the problem of negotiating agreements and implementing policies and investments. We discuss the theory and experience with offsets as a part of the international regime. We then present each of these five elements in turn. We conclude with an assessment of how this proposal could be useful in enhancing developing country actions in the context of climate change negotiations and agreements.

## ***2. THE PROBLEM AS WE SEE IT***

### A. The Efficient and the Possible

The discussion of how to structure international agreements is permeated by the tension between two policy perspectives:

- A technical policy design perspective that seeks to meet goals of efficiency, cost-effectiveness, and equity; and
- An international relations/political economy perspective that tempers the technical perspective with the notion that nation-states will only make, participate in, and comply with agreements that are in their own self-interest (or a weaker form that says they will be strongly influenced by their own self-interest).

Proposals and supporting arguments focus on both the characteristics of proposed policy architectures (and policies) and on the reasons why they might actually be adopted and followed. The best climate policy is the one with the best combination of technical merit and probability of adoption and implementation—and even then it is unclear how to weight these two factors.

A clear lesson from the international relations literature is that international institutions are most likely to thrive when they are self-regulating, that is, when states have an individual incentive to create and maintain them (Keohane 1988: 387). This logic extends to the design and rules of institutions, which must be incentive compatible in order to elicit ongoing participation and implementation (Koremenos, Lipson and Snidal 2001). The issue of political feasibility requires that we take domestic and international political considerations into account if we want to produce a robust architecture to manage climate change at the global level.

Making this even more difficult, policy architectures cannot be evaluated in a short-term sense but need to be evaluated in terms of what kinds of future agreements and actions these architectures lead to (and with what probability). A “bad” agreement in the short run that leads to developing country participation, for example, generally will be judged better than a “good” agreement (e.g. strict accountability) that results in lesser participation and commitment in the future. In other words, path dependence dynamics must be taken into account when making current decisions about institutional design. With this long-term perspective in mind, some analysts have advocated more flexible and adaptable approaches to complex problems such as climate over rigid, short-term commitments (Raustiala and Victor 1998; Thompson 2006).

Given the global public good nature of emissions reductions, free-rider and prisoner’s dilemma logic implies that almost any policy that requires real resources is *not* rational.

However, there are good reasons to believe that this strict version of rationality is too pessimistic. First, we have seen not just agreements (Kyoto) but actions (the EU's Emission Trading Scheme) where countries take on costly programs. Second, nation-states are not unitary actors; their preferences and negotiating strategies are derived from competing domestic interests, which in some cases include precautionary publics and influential NGOs (Moravcsik 1997; Sunstein 2003; Betsill and Corell 2007). Finally, international negotiations and institutions can provide a transparency and assurance mechanism, whereby rational actors are willing to move forward if they know that others are cooperating as well and that they will be interacting into the future (Axelrod and Keohane 1985; Mitchell 1998).

We base our arguments on the premise that self-interest limits the range of policies that governments are willing to pursue. However, we also assume that this does not rule out international cooperation, costly changes in behavior, and far-sighted policies if agreements are designed to be sensitive to political needs at the international and domestic levels.

Arguments about desirable international architectures and agreements are therefore based on past experience, logic, and analysis of self-interested behavior. Given the lack of success to date, the elements of international agreements that have the best combination of technical merit and broad enough appeal to achieve widespread support remain unknown until such time as an agreement is actually ratified. As an example of this, we note that in the predecessor volume to this group of papers (Aldy and Stavins 2007), all authors appeal to self-interest but advocate a wide and differing array of general GHG mitigation architectures. Some authors advocate efficient mechanisms and are optimistic that the diplomatic and self-interest problems will not continue to prevent such agreements (for example, Frankel (2007) and Cooper (2007)) and some are considerably more pessimistic about the possibilities of achieving efficient international GHG reduction through broad commitment to price- or quantity-based policies (Victor (2007) and Barrett (2007)).

From the perspective of efficient policy design, having developing countries take on targets creates a set of coherent and efficient incentives. The targets could be negotiated in such a way that developing countries bore no costs, and rather stood to gain from allowance sales to industrialized countries.<sup>2</sup> However, developing countries have overwhelmingly rejected this path, so this particular efficient design is not—at least in the short run—a plausible path forward.

Our view of plausible combinations of efficiency and implementability for offset policy is based on the following sketch of the interests of industrialized countries and poor countries in negotiations. We focus both on the outcomes about which countries care the most, and also on the kinds of accountability likely to be preferred.

### B. Priorities for Self-Interested Action

The good news from a political perspective is that large majorities in most countries view climate change as a serious problem that must be addressed. A 2006 poll of 30 countries found that on average 90 percent believe climate change to be a “serious problem,” with concern rising sharply over the last several years (Globescan 2006). According to a 2007

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<sup>2</sup> Proposals along these lines have employed business-as-usual or headroom (more than projected business-as-usual) targets for developing countries. Frankel (2007) offers a specific scheme based on this concept.

BBC survey of 21 countries, both developed and developing, substantial majorities in all but a few populations agree that it is “necessary to take major steps very soon” to combat global warming (BBC World Service 2007).<sup>3</sup> These sentiments extend to the official positions of most governments. The 1992 Framework Convention and the 1997 Kyoto Protocol, both of which call on governments to reduce emissions, enjoy near universal participation (192 and 181 ratifications, respectively).

To be clear, nominal support by governments does not always translate into concrete action and, except for Annex B parties to Kyoto, these multilateral treaty commitments do not impose specific and binding commitments. Moreover, these broad concerns and professed commitments regarding climate change mask significant variation in underlying interests and preferences over the details of how to address the problem. We consider these interests from the perspective of both developed and developing countries.

i. Priorities of industrialized countries

Industrialized countries have both a short-term and a long-term interest in reducing greenhouse gas emissions. Their more immediate concern is to reduce emission in a way that contributes to achievement of their Kyoto and/or domestic policy targets,<sup>4</sup> and to do so in the most cost-effective way (in both an economic and a political sense). This helps explain the appeal of the CDM as an alternative to potentially costly emissions reductions at home, which face resistance from industry and energy lobbies. It also explains why, in existing offset policies, industrialized countries have focused on real and verifiable emissions reductions that allow them to maintain that they have met (or will meet) emissions targets. This has contributed to the high transactions costs and limited scope of projects the CDM has funded to date.

More broadly, industrialized countries also care about emissions reductions in the longer run from developing countries. This is not the primary focus of offset policy but is a vital and overarching concern about the collective global response to the risks of climate change. Developing country reductions are crucial for reasons of environmental effectiveness, given that they will soon account for a majority of global emissions (Wiener 2007: 69; IEA 2006: 78-83). Indeed, in 2007 China surpassed the United States as the world’s leading emitter of energy-related CO<sub>2</sub> emissions (IEA 2007: 11), and by some measures non-Annex I countries have surpassed non-Annex I countries in terms of greenhouse gas emissions.<sup>5</sup> To us, this implies that industrialized countries ought to care about the efficacy of offset policies in creating changed conditions, not just immediate reductions, in energy systems and other GHG emission and sequestration systems. It also implies that industrialized countries should care about how the actions taken now affect the eventual ability and willingness of developing countries to commit to targets or to policies and measures that are comparable to those of the industrialized countries. This goal is crucial in the long run to address the concerns of Annex B companies that compete with developing-country firms and to prevent

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<sup>3</sup> Important exceptions are India and Russia, where only 37 percent and 43 percent, respectively, agree. In both countries, however, only tiny minorities feel that it is not necessary to take any steps to address climate change.

<sup>4</sup> Industrialized countries also have a near-term interest in meeting targets from various regional arrangements, such as the European Trading Scheme, and from unilateral policy pronouncements on emissions reductions like Australia’s emissions trading program.

<sup>5</sup> This is true if one takes into account GHG emissions from land use change. These calculations are based on the World Resources Institute’s Climate Analysis Indicators Tool, available at <http://cait.wri.org/>.

excessive leakage of emissions, which occurs when carbon intensive activities relocate to nonparticipating countries to avoid regulation or when reduced demand from developed countries depresses fuel prices, leading to more consumption—and therefore great emissions—in unregulated economies (IPCC 2001: 542-3).

It should also be noted that many developed countries have a separate interest in promoting economic development in the global South, for both political and principled reasons (Lumsdaine 1993; Milner 2006). To the extent that they promote technology transfer, infrastructure improvement, and employment in the developing world, offset activities thus have additional political appeal in the industrialized world. Indeed, when asked if wealthy countries should provide aid to poorer ones that agree to limit emissions, large majorities in Australia (84 percent), Canada (84), Britain (81), France (78), Russia (77), Italy (77), Spain (76), Germany (75) and the United States (70) agreed (BBC World Service 2007). Combined with the cost-savings and flexibility advantages of cutting GHGs emission in the developing world, where smaller investments produce larger reductions, this could help industrialized-country governments build a broad-based domestic coalition in favor of climate strategies that involve the developing world.

## ii. Priorities of developing countries

Developing countries care most about economic development—improving the livelihood opportunities and welfare of their populations (and not accepting commitments that might now or in the future limit attractive development choices). They have thus far been unwilling to trade off any progress in this area in order to mitigate GHG emissions. Both industrialized and developing countries have recognized the primacy of economic development in developing country decision-making. Such concerns have been largely sidelined for the last several years as industrialized nations focused on negotiating commitments and the mechanisms for meeting them. However, the theme of sustainable development is clearly enshrined in the Framework Convention and Kyoto Protocol and has been resurgent lately as developing countries face increasing pressure to participate in the regime (Najam, Huq and Sokona 2003). Energy systems are integral to economic development, both in terms of electrification for industry, commerce, and residential use, and for transportation. Changes that have the potential to expand energy availability and/or lower costs matter to developing countries.

A number of studies demonstrate that developing countries are more vulnerable to climate change impacts (Nordhaus and Boyer 2000; Cline 2007; IMF 2008: Chap. 4). For this reason, adaptation to climate change is a more pressing concern for most developing countries, and the state of knowledge is limited about policies and investments that are the most effective in aiding adaptation (IPCC 2007: Chap. 17). However, relative to mitigation, adaptation expenditures benefit the location where investments are made, and not the entire planet. Therefore such expenditures may have more benefit to poor countries than mitigation actions, whose benefits are a global public good.

GHG mitigation is at the low end of developing country priorities. Reducing carbon emissions is seen—at least in the short run—as an industrialized country obligation and a low-payoff action. In large developing countries this has become a diplomatic issue, and there is evidence that investments and paths are influenced by an expectation of a carbon constrained or economically and technologically transformed energy system.

### C. Accountability and Effectiveness in Reducing GHG Risks

”Accountability” is used here to refer to the ways that mitigation activities are measured, credited and assessed. Accountability is often treated as a matter of degree: a regime may contain more or less accountability. We also make a qualitative distinction between two broad approaches to accountability. *Strict* accountability typically requires specific, binding targets against which government actions are measured. An advantage of this approach is that it entails a readily observable “output” measure that can be used to evaluate compliance. However, these outputs may or may not be associated with environmentally beneficial *outcomes* if the regime is not well designed. A second approach to accountability is what we refer to as *progress-oriented* accountability. Here a government’s actions are judged not by whether a specific target is attained but instead by whether there is evidence of progress—in terms of investments and policies—toward long-term reductions in emissions, that is, toward beneficial outcomes. In practice, it is likely that these two approaches to accountability should be combined.

#### i. Developed Countries

Political constituencies in industrialized countries care about strict accountability for offsets to maintain the environmental integrity of trading systems as a way to reach emissions targets. We discuss in Section 2.D. below why we think this strict accountability is counterproductive.

A legitimate concern is putting poor countries on a path to real mitigation over the long run, a version of accountability distinct from strict accountability. It focuses less on verifying tons as additional and more on evidence that positive and productive steps are being taken as a result of resources expended. This is undeniably a less “objective” standard, and we have more to say on this below.

A harder-to-quantify goal is movement towards an outcome where commitment to an international agreement becomes more in the self-interest of developing countries. The fact that this is a hard-to-predict and somewhat unverifiable outcome does not subtract from its importance. Defining and measuring accountability in regards to this goal is inherently difficult and uncertain.

#### ii. Developing Countries

Developing countries will generally have a preference for less—or at least less strict—accountability when it comes to their own activities. Their view will be that they are the best judges of how to use resources to meet their goals. Developing countries are especially wary of strict accountability because they often lack the capacity to control outcomes and compliance even when their efforts are sincere.<sup>6</sup> However, the magnitude of resource transfers will be tied in some way to accountability to satisfy industrialized country objectives, so the concept remains important.

One kind of accountability is just to verify that resources are being used for their intended purpose—that they are not being misappropriated or used for goals unrelated to climate

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<sup>6</sup> On government incapacity as a source of noncompliance with international rules, see Chayes and Chayes 1995.

change risks. This is the same challenge faced by multilateral development agencies and is especially acute when dealing with less transparent (usually less democratic) governments. The more difficult accountability question is whether, and to what extent, resources are being used efficiently to achieve climate change-related goals. This type of accountability can only be achieved with more intrusive monitoring and auditing, which most governments will resist on sovereignty terms.

### iii. Assessing Environmental Effectiveness

There are (at least) three ways of judging how well policies and investments affect climate change risks. First, the simplest and least informative is the effect on short-run emissions, such as the reductions called for in Kyoto's first commitment period. Second, the effect on long-run GHG concentrations in the atmosphere is arguably a more relevant metric, but is also difficult to quantify given the long-run economic, technical, and political dynamics and feedbacks of current actions. Moreover, the choice of a threshold at which concentrations are safe is likely to be arbitrary, and the very notion of a single global target implies a sense of collective responsibility among nations that is unrealistic (Barrett 2007).

Finally, the economic metric—how do policies affect the total benefits and costs of climate change (and their distribution across time and within and among nations)—is directly related to the effects of policies on long-run concentrations. It also depends, however, on the level of effort and efficacy of resources devoted to adaptation specifically and economic development generally. Resources expended on adaptation and development may have a greater effect in reducing welfare losses than GHG mitigation, particularly in developing countries. The weight given to each of these three metrics will affect the desirability of alternative policies and institutions.

All three of these metrics are useful. Short-term emissions are a fairly objective measure of short-run effort and can be used to evaluate the level of effort and success of short-run policies. Long-run emissions can be linked directly to atmospheric concentrations and thus provide—with great uncertainty—some evaluation of how policies and levels of effort contribute to long-term risks. The economic metric is the most uncertain and hardest to measure but remains conceptually important because it allows simultaneous consideration of both mitigation and adaptation actions and also encompasses a recognition that choosing any given concentration target implicitly requires trading off risk against the costs of action. The Morgenstern and Fischer paper prepared for this project contains a much fuller and more detailed discussion of the metrics available for assessing policies and actions.

### D. Offsets and Targets—A Means, Not an End

The theory of offsets in emissions trading is fairly straightforward. Entities outside an emissions cap can earn offset credits by undertaking (voluntary) activities that produce real emissions reductions or corresponding environmental improvements (e.g. carbon sequestration). These offset credits are sold into the emissions trading market, increasing the supply of allowances (and thus reducing allowance prices) without affecting overall emissions.

This straightforward theory is beset by a host of well-documented problems when put into practice. The biggest problem is *additionality*—the determination of exactly how large a

reduction is caused by a specific offset action or policy. This requires knowing a counterfactual baseline—how many tons would have been emitted in the absence of the offset action or policy—which is impossible to estimate with certainty (IPCC 2001: 427). One must “estimate the unknown” (OECD 2000). It also requires accounting for *leakage*—the process by which reductions from a given project are offset by increases caused elsewhere (for example, if shutting down a high-emissions cement factory causes a new cement factory to be built to meet market demand for cement). The Marrakesh Accords require that, as part of a project design, participants must implement a plan for monitoring leakage effects (FCCC/CP/2001/13/Add.2: 19). Various proposals for how to account for leakage make clear just how difficult a challenge it is (Geres and Michaelowa 2002; Vöhringer et al. 2004). In the case of sequestration projects, there is also the problem of *permanence*—does the GHG reduction remain in place in perpetuity, or will sequestered CO<sub>2</sub> be released later (through harvesting or burning, for example), thus fully or partially reducing the GHG reduction benefits.

These concerns created a set of demanding and expensive rules and processes to ensure that offset credits produced by the CDM were “real, additional, and verifiable.” Surveying the various transaction costs and delays that beset CDM projects in practice, a World Bank study concludes that “Procedural inefficiencies and regulatory bottlenecks have strained the capacity of the CDM infrastructure to deliver [emission credits] on schedule” (Capoor and Ambrosi 2008: 4).

Offsets are valuable in theory not just for reducing the cost of meeting an emissions cap, but also because they provide incentives to those not covered by that cap to take actions that ameliorate the underlying environmental problem. While in a strict accounting sense these actions are emissions neutral, they serve to bring unregulated entities within the general emissions control structure and to get these entities on a less emissions-intensive path. We argue that in the case of GHGs, emissions-neutral cost reduction gets too much attention—both because adherence with the cap is not in and of itself a solution, and because project-based offsets suffer from incurable measurement difficulties. The engagement of those outside the cap, with an eye toward long-term mitigation, is a key reason for offset policies.

We think that a rigid focus on ensuring that offset policies do not undermine the sanctity of targets is misplaced. Advocates of such strict accountability—under the Kyoto Protocol or domestic programs as reflected in the US debate over national policy in 2008—have focused too much on targets as solutions and not enough on target-based policies as part of a complex and long-term transition to a reduced GHG future. The practical manifestation of such views has been to create implementation policies as if meeting the target meant that the climate change problem were solved, and every ton over the target was a nail in the global climate coffin.

In the context of the true underlying drivers of climate risk and damage—worldwide emissions over long time periods, together with the effectiveness of adaptive responses—this emphasis is misplaced. It is particularly problematic as a guide for policies toward developing countries. Insistence that strict standards of additionality be met in CDM and other offset policies has raised the financial and nonfinancial costs of offset transfers.

The CDM has clearly been designed with additionality and accountability very high on the list, a focus we believe is inherently limiting. The emphasis on ton-for-ton accounting

emissions has kept transactions costs high, limited innovative projects, and particularly prevented policy-based changes from being funded with offset resource transfers. This is unfortunate since there are countless policies—in areas such as taxation, subsidies and building codes—that could promote emission reductions in the long-run but that cannot easily be categorized as “projects” in the CDM sense (Aldy and Stavins 2008: 7).

CDM administrators and participants have been well aware of these limitations and have worked hard to develop standardized methodologies and simplified procedures. These measures have improved the situation but cannot work around the fundamental limitation of strict accountability. The CDM has been characterized by relatively low volumes of offset credits, concentration on a few large projects to reduce HFC (37% of total credits issued through early 2008), and high transactions costs that have excluded small countries and small projects to a large degree. Nonetheless, language focusing attention on strict environmental integrity—and guarantees thereof—have made their way into the most widely discussed US legislation and continue to be a political focus of NGOs.

The developments in Bali implicitly recognized this problem, and proposals for granting credits for avoided deforestation are consistent with our proposal. It will never be possible to precisely define what actions prevent deforestation relative to a future counterfactual baseline, but this makes it no less valuable an endeavor.

### **3. THE PROPOSAL**

We propose a mechanism that allows industrialized countries to meet part of their emissions reductions commitments by funding activities in developing countries. This mechanism has some significant differences from the CDM. It could supplant the CDM in a post-Kyoto agreement or serve as an institution that governs and coordinates the use of offsets in separate or partially integrated industrialized country emissions trading programs.

#### ***3.1 Change the criteria for offsets from “real, verifiable, and permanent reductions” to “actions that create real progress in developing countries toward mitigation and adaptation”***

This is the part of our proposal that diverges most from the history of offset programs. The theoretical justification of offsets has centered on “carbon neutrality”—the idea that global net emissions will be exactly the same with and without the offset project.

Part of the problem with this model is the basic fallacy that offsets are ever really carbon-neutral in any strict sense. Issues of permanence, leakage, and additionality are endemic and insurmountable. Offsets suffer from a version of the fallacy of misplaced concreteness. Another problem with strict ton-for-ton accounting is that the transactions costs—economic and political—of meeting requirements for real, verifiable and quantifiable prevent many useful activities from qualifying for implementation—in spite of the fact that there is widespread agreement that massive increases in resource transfers are necessary to change developing country emissions pathways.

We propose modifying the underlying concept of what is being offset. In adopting and implementing specific mitigation targets, industrialized countries are taking on an obligation to make progress on reducing the risks of climate change. Their targets are a means to that end and a useful metric of a commitment to a level of financial and policy effort. Offsets

would make a greater contribution to industrialized country goals if they focused less on offsetting specific tons of GHG emissions and more on funding, implementing, and evaluating activities in developing countries that are effective in reducing the overall climate change risk.

This proposal does exclude the activities covered by the existing CDM, but rather tries to broaden the kinds of activities covered beyond that set and change the criteria for measurement and verification. This change creates a new set of tasks and judgments necessary to choose activities and evaluate their effectiveness. We outline in Section 3.4 and 3.5 below how negotiation and institutional design could work to make such judgments.

### ***3.2 Make a significant share of industrialized country commitments (whether international or domestic) achievable through offset payments to developing countries***

The CDM and industrialized country cap-and-trade programs and proposals already contain provisions for transfers to developing country in return for specified actions. We propose to expand the flow of resources available through this mechanism by setting a reference level of industrialized country targets that will provide funding for developing country actions. Industrialized countries would aim to purchase credits equal to this reference level—we propose at least 10% of a country's overall GHG target. Credits generated by this mechanism would be accepted on par with the allowances used for compliance in international or participating national emissions trading markets. For example, if the US were to adopt a target of 5,000 million metric tons (MMT) of CO<sub>2</sub> equivalent emissions for a given year, it would attempt to purchase 500 MMT of offset credits.

These credits would make it easier for industrialized countries to meet their targets, and sale in the industrialized country emissions trading market would provide financial resources for developing country actions. Some part of this commitment would be devoted to a fund that would make ex-ante investments (Section 3.3) and the rest would be available to projects and actions that qualified for credits ex-post. Our recommendations for making decisions about how to set criteria for actions and determine credit amounts are in sections 3.4 and 3.5 below.

Current levels of transfers under the CDM have been a) low and b) concentrated in a limited number of countries, and c) not concentrated in the energy sector or sequestration. The CDM is not quantitatively limited in the Kyoto Protocol, but is limited in practice by the cost and difficulty of getting through the process. The European Trading Scheme (ETS) does place limits on the number of CDM (and Joint Implementation) credits that can be used to meet EU obligations. The most widely discussed US cap-and-trade bill (S.2191, which has not been passed) contained a rough target of 5% for non-forestry developing country offsets with provisions for expanding that percentage if domestic offsets did not meet a threshold.

As a standard of comparison of the potential size of our proposed mechanism, we calculate the magnitude of resources in 2012 if the US were to adopt a target of 4% below 2005 levels (as in S.2191) and make 10% of this target available to fund developing country activities, and if the EU-15 similarly pegged 10% of one year of its Kyoto target as eligible under this sort of mechanism. Based on an assumed allowance price of US\$25 per ton, the amount of

money available to fund developing country actions in 2012 would be 24.2 billion US dollars. The quantity of allowances devoted to funding in this example would be 969 MMTCO<sub>2</sub> in 2012. As a standard of comparison, a total of 189 MMTCO<sub>2</sub> have been registered from the inception of the CDM through early 2008. The 10% figure is offered as an example and reasonable benchmark. Our point is that under anything like the current CDM rules, developing countries are unlikely to see resource transfers of this magnitude.

In theory increased resource flows could come from government tax revenues as required through some international commitment, rather than by selling credits into industrialized country emissions trading markets. Our proposal is based on a judgment that—given the existence of multinational and/or national cap-and-trade programs—political realities make credit sales a more politically palatable funding mechanism in the short run. We also think that such a mechanism is less prone to diminution or cancellation in difficult economic times than funding developing country activities out of general revenues, and thus is more stable over the long run.

We also recognize that expanding the number of credits generated by developing country activities will reduce the price signal and level of effort in the energy sectors and use of industrialized countries, *ceteris paribus*. Our judgment is that—given the existence of widespread target-and-price policies like cap-and-trade programs in the industrialized countries—the importance of making changes in the developing world in the overall portfolio or responses to climate change risk makes such an outcome an acceptable tradeoff. It is also possible that awareness such an outcome will allow the adoption of more ambitious targets in the industrialized countries.

### ***3.3 Put a specific or minimum quantity of offset credits in a fund ex-ante whose expenditure is governed by the principles and institutions described below***

We propose that some share of offset credits generated by the proposed mechanism—we recommend 50% of the total—be sold to provide the resources for an investment fund in developing country risk reduction. Instead of granting credits after a project has been approved and carried out, credits devoted to this fund would be issued and then sold to provide a funding stream. How much of the total allowable quantity of offset credits would go to this fund, and how much would be awarded through more traditional means (awarding credits for demonstrated progress based on measurement and accountability criteria), is a policy decision that would need to be determined through negotiation.

The main strength of a fund is that it allows much greater flexibility in supporting large-scale or non-standard mitigation options and thus would allow for a wider range of policy experiments. It also bypasses a significant hurdle in finding finance for mitigation actions in developing countries to bridge the time period between the time an action is decided upon and the time when it is verified as meeting the policy's standards. It could also help spread the benefits of offsets if geographical diversity were part of the criteria for selecting activities for investment; in contrast, CDM projects have tended to benefit only a handful of larger developing countries able to attract private investment (Banuri and Gupta 2000: 79). To date more than three-quarters of registered CDM projects have been in just four countries: China, India, Brazil, and Mexico. Many smaller developing countries simply lack the capacity and expertise to successfully navigate the complicated and administratively onerous project cycle of the CDM (Yamin and Depledge 2005: 185).

Consider this mechanism as part of an investment for a large-scale wind project, a liquid natural gas terminal, or support for an urban transportation project. Having resources that could support such projects will make a decision to move ahead more likely than in a situation where no credits will be granted until the project is approved and producing results. It reduces the need to find private sector financing, which can be a significant impediment. The fund mechanism could also be used to promote policies and build capacity in ways that are not linked to specific projects, such as the reduction of energy subsidies or the implementation of appliance efficiency standards. It also makes for a more activist institution that is looking to spend money productively, rather than one that functions purely as an intermediary.

Another significant advantage of a fund approach is the potential for reduction in transactions costs for small projects. A fund could invest in a series of small photovoltaic or wind projects at various locations in a developing country without incurring the significant documentation and submission costs that are required under the CDM.

One potential objection is that accountability becomes a much more difficult concept ex-ante than ex-post. If resources are committed out of a fund, what recourse is there if the funded actions are poorly managed or fail to produce desired results? To the extent that industrialized countries retain a significant focus on verification and quantification of developing country actions, this may move the mechanism far enough away from traditional offset programs to make it incompatible with their political and diplomatic needs. This is a justifiable concern. We believe that progress requires that at least some share of industrialized country expenditures should be willing to incur risk. The amount of risk is dependent on the performance of and trust in the governing institutions, but strong risk aversion is inextricably linked to limited actions and lost opportunities. In section 3.5 we also suggest a mechanism to at least partially address accountability concerns given this specific proposal, and in general to provide for ex-post adjustment. We also note that unlike single CDM projects, a fund can spread this risk across a variety of activities—a single investment might fail, but the portfolio of funded activities could still produce significant progress toward mitigation and/or adaptation.

Another criticism of the idea of using offset credits to create a fund is that it is really no different than putting resources into a fund from general revenues. Governments could simply agree to put an amount of money equal to that produced by devoting offset credits (or could expand their target by the same amount of credits, auction the amount of this expansion, and devote those resources to such a fund). This is technically true, and we think that either of those two funding options would be a perfectly fine outcome. Our belief that linking such funding to an offset program is a viable alternative is based on the proposition that it is politically easier to devote a set of additional allowances than to use general revenues. The additional allowances do reduce domestic costs (holding the target constant). It is also politically more acceptable to provide offset credits in return for actions that lower climate change risks than simply to relax the target to produce general revenues—and our proposed structure does maintain that connection, if less rigidly than traditional offset programs. Our mechanism provides stable funding that does not depend on annual appropriations, and it also maintains at least some connection between the additional allowances made available and the underlying problem that multinational or national cap-

and-trade systems have been or will be set up to address: reducing the atmospheric concentrations of GHGs.

Climate investment funds have been gathering increasing support. The World Bank, after a number of smaller funds designed to produce CDM credits, announced two new funds in July of 2008 that would have the flexibility to pursue both technology-oriented and new and innovative approaches to mitigation and adaptation. The World Bank is hoping to capitalize these new funds at a total value of \$5 billion. Mexico recently proposed a multilateral climate change investment fund that specifically does not include additionality as a criterion for funding and would invest in both mitigation and adaptation. Our proposal is very much in the spirit of these funds, although we believe that providing capital through our proposed mechanism has the potential to create larger and more stable source of investment resources than sovereign government contributions. We also believe that specific operational principles of a fund can best be worked out through the process we describe below.

We note that we do not propose that the entire commitment of offset credits be devoted to such an ex-ante fund. The more familiar mechanism of awarding offset credits for actions that meet program criteria should still be used for as large a share of the offset credits as is desired (we propose half). We do believe that the flexibility offered by a fund argues that at least some share of allowances be used in this way.

### ***3.4 Make the principles for actions taken in developing countries that qualify as offsets the specific focus of negotiation among state parties***

One of our core principles for this proposal is that the kinds of activities, policies, and investments eligible for receiving resources should be the focus of multilateral and bilateral negotiations—a constituent part of international climate architecture. Industrialized countries have a number of goals for offset policy—reducing the cost of meeting domestic obligations, carbon neutrality, and moving developing countries toward progress in GHG mitigation are broad categories that apply. Developing countries are a highly heterogeneous group, but have in common a primary focus on economic development and on the principle that industrialized countries should transfer resources that allow developing countries to make progress on reducing climate change risk in a way that does not (at least in the short run) entail broad quantifiable commitments.

The principles for negotiation will encompass the standard accountability criteria—additionality, leakage, and permanence—but should move beyond the ton-for-ton accounting framework. Endeavors like major energy sector investments and policies, forestry and agricultural programs and investments, and technology adoption and implementation should be on the table. There is also no reason why adaptation actions and investments should not be considered under such a program—if they are of interest to developing countries, then they should be on the table as a means of offsetting other ways of reducing climate change risk. Economic development is widely recognized as an essential part of adaptation strategies, and the contribution of mitigation and adaptation actions to broader economic welfare should be part of this negotiation as well.

The principles that need to be negotiated are:

1. What kinds of activities, investments, policies and programs are eligible (projects, policies, infrastructure, adaptation, etc.)?
2. What kinds of documentation or accountability are required before resources are awarded
3. What kinds of documentation or accountability are required during and after resources have been used
4. What procedures and agreements are available ex-post to adjust credits granted ex-ante (related to 2. and 3.)?
5. Are there minimum or maximum percentages of available resources that are set aside for specific uses (e.g. wind energy, HCFC projects)
6. Are their criteria for the distribution of total funds, among nations and among recipient groups? In other words, is there a share of the total expenditures given to the “best” projects and actions, and is there a share that is divided among developing countries on a per capita basis or by some larger combination of criteria including development and effort on climate change mitigation?

We also propose an additional principle that should apply as a matter of philosophy:

7. Be willing to take risks, make mistakes, and accept that some actions will fail or only partially succeed.

***3.5 Delegate clearly delineated tasks to existing international organizations and new institutions for the purpose of managing and safeguarding the offsets program, consistent with negotiated guidelines.***

i. Institutional Framework

We recognize that any agreement resulting from the kind of principles discussed above will not give clear and unequivocal guidance on a wide range of specific decisions. We propose adapting the CDM oversight institutions into a new body whose job it is to make specific decisions about how to use resources, and about the evaluation of resulting actions, investments and policies.

The existing climate regime includes a broad and impressive framework of intergovernmental and private institutions. Our proposal for an enhanced offsets mechanism can build effectively on these existing institutions, though with some modifications and novel structures. We recommend that the World Bank and the Climate Secretariat in Bonn play a central role, the former taking the lead on implementation and the latter emphasizing information sharing and decision-making in conjunction with governments. While the World Bank specializes in economic development, the Climate Secretariat’s main concern is with the environmental integrity of programs—that is, their contribution to reduced emissions. The two entities therefore complement each other well.

The World Bank has enormous experience with offsets activities and currently manages ten Carbon Funds, many of which emphasize sustainable development. The Community Development Carbon Fund, in particular, is designed to allow the world’s poorest countries to benefit from emissions markets. The Climate Secretariat’s main contribution would be in the areas of coordination and information sharing. Because we are recommending a much

broader range of emissions reduction activities in wider set of countries, policy information will be of enormous importance in our scheme. The National Reports submitted regularly to the Secretariat by governments contain information on national circumstances and the status of emissions, with additional information on compliance required of Annex I countries. We propose that these reports contain more information—to be compiled and analyzed by the Secretariat—on policy experiences and “best practices” to be shared among governments. They should be analyzed in conjunction with input from NGOs and other sources of research and analysis. This new sort of information clearinghouse will facilitate learning and will allow offsets activities to be fine-tuned in an adaptive process over time.

One difference with our proposal is that the existing carbon funds are all project-based and largely focus on the compliance interests of Annex B parties in the first commitment period (Carr and Rosembuj 2007), whereas we propose funding a broader range of policy changes designed to produce longer-term benefits. This move away from ton-for-ton accounting, and the choice of what actions count and how they are evaluated, will have to be driven by negotiations and coordinated by some multilateral institution (or institutions).

To oversee this new structure and a new offsets program more generally, we propose the establishment of a ten-member oversight committee, composed of parties to the UNFCCC and ultimately responsible to the Conference of the Parties (COP). In order to insure that a broad range of interests are represented, membership on such a committee should be distributed along similar lines as the ten-member CDM Executive Board, with one member from each of the UN’s regional groups, two other Annex I members, two other non-Annex I members, and other member from among the least developed countries to ensure that sustainable development concerns are reflected. Since three of the five regional groupings are composed almost entirely of developing countries, they would normally enjoy a six-to-four majority on the board. A two-thirds majority voting rule would ensure that no group dominates decision-making but would also avoid the gridlock of a consensus requirement.

Finally, as our proposal is designed to reflect the interests of both industrialized and developing countries, and to include a wider range of policies, the issue of “coherence” across international regimes is likely to arise. To make sure that environmental needs do not clash with the economic interests of both developed and developing countries, we propose the creation of an informal contact group of secretariat officials, to be chaired by the UNFCCC Executive Secretary, across major relevant multilaterals, including the World Bank, IMF, WTO, OECD, UNCTAD, UNEP and WMO. This group would raise issues concerning conflicting rules and incentives and would also share data on best practices. A useful model in this regard is the Global Environment Facility, whose complex mandate requires it to work closely with a variety of UN agencies and regional development banks (Porter et la. 2008: 12).

Ultimately, the institutions responsible for performing these functions will have to decide (1) which actions or projects to fund, based on the specific technology or sector involved, the amount of investment required, and the contributions to non-GHG objectives (economic development, income distribution, access to energy); and (2) How much credit to grant to a specific action or project (and how much money to spend on it).

## ii. Ex-post Accountability

One idea we propose for this new institution is the ability to make adjustments ex-post. Expanding offset activities beyond strict ton-for-ton accounting, and transferring resources in advance of realized progress on reducing climate change risks, increases the uncertainty associated with such progress. This creates a problem for accountability in the way resources are used.

Giving the oversight institution a responsibility to evaluate the efficacy of expenditures after projects or policies are implemented can help to ameliorate this situation. We can see two separate kinds of ex-post adjustments—those between the oversight institution and the recipients of resource transfers, and those involving voluntary retirement of allowances by the oversight institution.

As an example, take the case where a large resource transfer takes place to fund photovoltaic and wind generation in rural areas, and the technologies fail to be implemented and/or maintained, causing the areas to continue their use of diesel generators. The oversight institution could have the authority to require remediation actions from the government (or business or NGO) that has responsibility for the project—implementation at the government's expense, or some other set of climate change risk-reducing actions. If these remediation actions failed to materialize, then the oversight institution could restrict access to resources in the future. The focus here should be on whether resources were used as intended and managed well, and not on whether the benefits were as large as predicted. There remains an unavoidable task of evaluation and judgment in making this determination, so it will never be perfect or free of conflict.

The oversight institution should also make ex-post corrections based on how well its portfolio of activities meets specified objectives. If they significantly underperform expectations about mitigating GHG risk, then retiring some quantity of allocated credits used to provide resources for our proposed fund (i.e. not selling them into industrialized country emissions trading programs) could compensate this lack of performance. Similarly, reducing the quantity of credits Instead of than selling them into industrialized country emissions markets granted through offset mechanisms would have a similar effect in reducing industrialized country emissions to offset (some part of) the failure to of developing country actions. The operational details of such an institution would depend on what participants negotiate about the nature and role of accountability in this mechanism.

This ex-post correction also has its problematic aspects—it goes against the financial interests of the oversight institution to deny itself resources, and it depends on complex and uncertain evaluations. It is possible that a separate institution would be required to judge the efficacy of the oversight portfolio. It does have the virtue of creating a mechanism for making ex-post evaluations affect future resources, however imperfectly.

## iii. International Agreement or Coordination Mechanism

The mechanism we have proposed could function in a single unified international carbon cap like that envisioned by the Kyoto Protocol. It is currently far from clear whether such a mechanism will be agreed upon in Copenhagen, or whether a more bottom-up or fractured set of national industrialized country policies will characterize the post-2012 period. The

elements of our proposal are of value in either scenario, and in the latter case could serve as a coordinating mechanism for both rules and prices among diverse national and regional emissions trading programs (Jaffe and Stavins 2007). If there were to be separate EU and US cap-and-trade systems with independent targets, for example, collective negotiation and institutional innovation of the kind proposed here could serve to arrive at a common, or at least coordination, of the rules and standards for developing country offsets. Depending on the regulations and limits on the use of offsets for domestic compliance, this institution would tend to bring industrialized country allowance prices closer together.

#### **4. CONCLUSION**

Our proposal for improving the international framework for lowering climate change risk is an evolution of current elements. It builds on and expands the idea of the CDM and offset policy in general. It recognizes that developing countries will do significantly more if resources are available, and that industrialized countries require accountability for the resources they provide. It further recognizes that offset policy has attractive political economy attributes for industrialized countries that are likely to make sustained resource transfers more viable than other mechanisms. Overall, it takes into account the distinct interests of both industrialized and developing countries by emphasizing environmental and development needs simultaneously.

It is certainly not necessary that all elements of this proposal be adopted together in order to provide improvements. The idea of accepting more uncertainty and experimentation in exchange for a wider and more creative portfolio of actions can be achieved in many ways. The expansion of offset funding from industrialized country target-based trading programs is only one of those mechanisms, albeit one that has some significant advantages. There are many possible institutional structures for handling these proposed resource transfers—we believe the one we propose here has a good combination of functionality and realism, and thus offers a promising way forward through the daunting technical and political difficulties confronting the expansion of resource transfers to developing countries to reduce climate change risk.

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