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March 1, 2010

To: Members of the Executive Board

From: The Secretary

Subject: **Financing the Response to Climate Change**

The attached note on financing the response to climate change provides background for an informal briefing on the Green Fund, tentatively scheduled for tomorrow, **Tuesday, March 2, 2010**.

The staff proposes the publication of this paper on the Fund's external website on March 8, 2010.

Questions may be referred to Mr. Bredenkamp (ext. 38881) and Ms. Pattillo (ext. 37319) in SPR.

This document will shortly be posted on the extranet, a secure website for Executive Directors and member country authorities.

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FINANCING THE RESPONSE TO CLIMATE CHANGE

A note prepared by the Staff of the International Monetary Fund

March 1, 2010

- *This note outlines a scheme for mobilizing financing to help developing countries confront the challenges posed by climate change. The proposal is to create a "Green Fund" with the capacity to raise resources on a scale commensurate with the Copenhagen Accord ($100 billion a year by 2020).*

- *By providing a unified resource mobilization framework, with up-front agreement on burden-sharing and the capacity to meet the financing needs identified at Copenhagen, the Green Fund could facilitate progress toward a binding global agreement on reducing greenhouse gas emissions and allow developing countries to begin scaling up their climate change responses without delay.*

- *To achieve the necessary scale, the fund would use an initial capital injection, in the form of SDRs provided by the monetary authorities of developed countries, as the basis for issuance of low-cost "green bonds" in global capital markets.*

- *Since much of the financing would need to be provided ultimately as grants or highly-concessional loans, the fund would also need to mobilize subsidy resources from contributors.*

- *Governments would likely require new sources of fiscal revenue for this purpose, including from carbon taxes and expanded carbon-trading schemes, which may take time to put in place.*

- *In the interim, the Green Fund could cover its subsidy needs from bond proceeds, interest income on its SDR capital base, and/or revenues from other innovative international tax schemes.*

- *Resources mobilized by the Green Fund could be channeled through existing climate funds, or via newly created special-purpose disbursement facilities.*

The scale of the financing needs

Responding effectively to climate change will require new investments and other expenditures on a massive scale for decades to come. Estimates of the financing needs vary widely, but it is clear that developing countries will require substantial additional assistance to meet the challenges they face. The Copenhagen Accord envisages annual financing (from both official and private sources) of around $100 billion per year for developing countries from 2020 onward. We assume that new financing flows of around $17 billion a year might be called for during 2011-13, increasing quickly thereafter.[1]

These resources will be split—we assume, for illustrative purposes, evenly—between spending on adaptation (i.e., coping with the effects of climate change) and mitigation (i.e., reducing emissions or increasing carbon capture, including through combating deforestation). Resources for adaptation would go primarily to low-income countries and would likely be disbursed almost entirely as grants since they may not generate returns to service additional debt. Resources for mitigation, by contrast, can be expected to yield some positive return, and hence the related financing could take the form of loans. The terms on which such financing would be provided would need to be highly concessional for low-income countries, however, to ensure long-term debt sustainability.

Assuming that all adaptation financing is in grant form, and that mitigation financing is a mix of concessional and nonconcessional loans, we estimate that for every dollar of overall financing provided, about 60 cents in subsidies would be needed. Accordingly, required subsidy resources could be on the order of $10 billion a year during 2011-13, rising to $60 billion a year by 2020.

Coordinating and committing resource transfers

In the medium-term, new and expanded carbon taxation and carbon-trading schemes have a central role to play in addressing climate change. These instruments will help directly to reduce the emission of greenhouse gases. In addition, they have the potential to trigger large-scale cross-border flows of private financing for developing countries, and to provide substantial new sources of revenue for governments in developed countries that can be used, in part, to finance climate-related expenditures.

However, the prospects for scaling up carbon taxation and carbon-trading mechanisms are uncertain, and implementation could take several years. The political obstacles to appropriating new aid funds in the current fiscal environment—even if additional revenues

[1] The Copenhagen Accord committed total financing of $30 billion by 2012, and we assume a further $20 billion would be provided in 2013 (consistent with a rising path toward the 2020 target).

are available to cover them—are considerable, and may take time to overcome. By contrast, measures to address climate change, and hence credible long-term financing commitments, are needed now.

Reaching early agreement on an operational financing framework requires settlement of this coordination and commitment problem. In addition, developed countries face a burden-sharing problem, that is *among* the contributor countries, how should the cost of the resource transfers involved (i.e., the subsidy element) be distributed?

In the remainder of this note, we suggest a scheme—a “Green Fund”—that could help address, though not entirely resolve, both these problems. It could provide a vehicle to mobilize new financing quickly and in a way that, once it is established, coordinates and commits individual countries’ long-term participation. Furthermore, while negotiation would still be needed to determine which countries contribute and which benefit, the proposed scheme provides a possible “key” for burden-sharing among the contributors (the list of which could evolve over time).

The design of the Green Fund

The objectives of the Green Fund would be:

- to create a coordinating, commitment, and burden-sharing mechanism for developed countries to contribute to financing developing countries’ climate change needs;
- to mobilize resources on a large scale, commensurate with the Copenhagen Accord, by using official funds to leverage private financing; and
- to begin channeling loans and grants to developing countries from day one, while long-term revenue sources are being developed.

The concept of the Green Fund described here is focused purely on resource mobilization. How the resources would be disbursed to developing countries is a separate issue: they could be channeled through existing climate funds or through some newly created entity.[2]

Capitalization

The Green Fund would be capitalized by developed country monetary authorities through an injection of reserve assets, in exchange for which contributors would receive equity stakes in

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[2] This could include special climate funds managed by multilateral development banks or, as envisaged by the Copenhagen Accord, the Copenhagen Green Climate Fund.

the fund.[3] While, in principle, any reserve asset could be used for this purpose, there would be a case (as others have suggested) for contributors to use the new SDRs allocated to them in 2009, since they are of limited practical value to developed countries.[4]

Reflecting the fact that SDRs were originally allocated to countries in proportion to their IMF quota shares, contributors could agree to scale their equity stakes in the Green Fund accordingly. IMF quota shares would thus become the "key" for burden-sharing among the contributing countries.

Operations and the size of the fund

Once its capital base is established, the fund could begin issuing highly rated (and hence, low-cost) "green bonds," which could be sold to private investors as well as official holders—including, for instance, sovereign wealth funds.[5]

In the steady-state, the Green Fund would combine the proceeds from bond issuance with subsidy resources that would be provided through budgetary transfers from contributing countries. The fund would use these combined resources to provide grants for adaptation and loans for mitigation to developed countries.

To generate financing on the scale envisaged in the Copenhagen Accord, the fund should have the capacity to provide financing of around $17 billion per year, on average, during the start-up phase (2011-13), of which $10 billion would be subsidies. We assume that the financing provided would grow roughly linearly thereafter, reaching $100 billion per year from 2020 onward, of which $60 billion would be subsidies.

On these assumptions, the fund would need to issue about $1 trillion in bonds over 30 years of operation. We envisage that an equity endowment of $100 billion, by providing a buffer-of-last-resort against potential default by borrowers from the Green Fund, could be sufficient

[3] In some countries, reserve assets are held by the central bank, in others by the treasury. We use the term "monetary authorities" to encompass both entities.

[4] Developed countries received a total of $176 billion in new SDRs in 2009. Whether or not these SDRs are "surplus to requirements," it may nevertheless be easier for monetary authorities to participate in the Green Fund if their equity stakes can be structured to have the character of reserve assets, so that the transaction is purely an exchange of reserve assets. Since assets must be liquid to qualify as reserves, this would require an arrangement among contributors that would allow a Green Fund shareholder encountering liquidity needs to encash its equity stake in the fund.

[5] This is a key difference between the Green Fund and other proposals for SDR-based schemes. The latter typically envisage using the SDRs directly for on-lending to developing countries, rather than as capital to leverage investor funds, which means that the amount of financing they can provide to developing countries is only a fraction of what is called for under the Copenhagen Accord.

to assure green bond holders that their claims are secure. This buffer could be supplemented over time through income generated by a small lending rate surcharge on borrowers from the fund and (if needed) additional budgetary transfers from contributing countries, to ensure that equity in the fund is not eroded.

Financing subsidies during the start-up phase

In the start-up phase—notwithstanding the welcome pledges made at or before Copenhagen—it is likely that at least some contributing countries might find it difficult to make budgetary transfers to provide the necessary subsidy resources, for the reasons we have outlined. How might the Green Fund fill the gap? There are several possible options.

One option would be for the fund to run deficits during the start-up phase, financed by additional green bond issues. The fund would, in effect, be borrowing against future budgetary transfers from its shareholders. A downside risk from deficit financing is that it might call into question the fund's long-term financial soundness (it would raise the fund's debt-equity ratio) and could increase its cost of borrowing from the market. This risk would be mitigated, however, to the extent that the green bonds are perceived as implicitly underwritten by the developed country governments, in addition to the security provided by the fund's capital base.[6] In any event, if the deficit financing option were pursued, it would be essential for the contributing nations to make a strong political commitment that budget transfers will indeed come on stream at the end of the start-up phase.

A second option would be for the Green Fund to use the interest it earns on its capital base (i.e., its SDR holdings). Contributing countries' monetary authorities would be responsible for paying these interest charges.[7] In the steady state, when the Green Fund is receiving budgetary transfers to cover all its subsidy needs, we assume that the fund would return its interest income to shareholders as dividends on their equity. During the start-up phase, however, shareholders could agree to forego their dividends, and thereby provide a temporary source of net income for the Green Fund, which could help cover the fund's subsidy needs. While this would impose a burden on the monetary authorities in contributing countries, it would likely be manageable: as a result of crisis intervention measures, the profits of many developed country central banks have risen sharply, and are expected to remain elevated in the near term. Still, ultimately there would be costs to budgets arising from lower profit transfers from the central bank, or from the financial operations of government treasuries in countries where treasuries manage reserve assets. Indeed, in light of

[6] If necessary, the bonds could come with a formal guarantee from participating governments. In this context, it is important to put the size of the potential Green Fund deficits in context. Even if the fund's entire subsidy needs were covered by borrowing during the start-up phase, the resulting deficits would amount to less than 0.03 percent of the contributing countries' combined GDP.

[7] For a description of how SDRs work, see http://www.imf.org/external/np/exr/facts/sdr.htm.

this, some countries may choose to bear the costs directly from their budgets—drawing in part on higher remitted profits from their central banks—rather than have the central banks absorb the costs directly. Moreover, given the size of the expected equity endowment, this avenue could cover only about one fifth of the subsidy resources needed during the start-up phase.[8]

A third option would be for the international community—drawing on the work of the newly formed UN high-level advisory group on climate change financing—to seek early agreement on one of the more appealing and less complex carbon tax proposals currently under debate, and to dedicate at least a portion of the proceeds to the Green Fund. Ideas for global taxes on aviation and shipping, for instance, are being actively debated, and estimates of their potential yield start at around $10 billion a year.

In practice, a combination of these options could be used, as needed to ensure that the fund can meet its financing targets during the start-up phase.

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Launching a scheme along the lines proposed here would require a major political effort upfront by all participating countries. The potential payoff, however, is enormous. Once created, the Green Fund would provide a unified resource mobilization framework capable of meeting the financing needs identified at Copenhagen for decades to come. This seems far preferable to the alternative—a succession of difficult international negotiations every few years, with uncertain outcomes. The creation of a Green Fund could also help move the world closer to a binding global agreement on reducing greenhouse gas emissions. Finally, the Green Fund could allow developing countries to begin scaling up their adaptation and mitigation efforts sooner (perhaps years sooner) than might otherwise be possible, to the benefit of the entire world.

[8] Assuming an equity endowment of $100 billion and an average interest rate of 2 percent over 2011-13, interest income would be $2 billion per year during the start-up phase. The interest rate assumption broadly reflects current projections of the SDR interest rate over this period.