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SUSTAINABLE DEVELOPMENT AND FINANCING CRITICAL GLOBAL PUBLIC GOODS

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ACRONYMS

ADB	Asian Development Bank
AMCs	advanced market commitments
BTA	border tax adjustments
CCF	Climate Change Fund
CCS	carbon capture and storage
CGD	Center for Global Development
CIF	Climate Investment Fund
COP 18	Conference of the Parties 18th session
CP3	Climate Public Private Partnership
CTF	Clean Technology Fund
DFID	Department for International Development (UK)
DoE	Department of Energy (US)
EC	European Community
ECA	export credit agency
EMS	European Monetary System
EMU	economic and monetary union
FSF	Fast-Start Finance
G8	Group of Eight
G20	Group of Twenty
GCF	Green Climate Fund
GEF	Global Environment Facility
GSF	Green Super Fund
HIPC	Heavily Indebted Poor Countries
IFC	International Finance Corporation
IFI	international financial institutions
IMF	International Monetary Fund
LDCs	least developed countries
LDCF	Least Developed Countries Fund
MDBs	multilateral development banks
MDRI	Multilateral Debt Relief Initiative
NGOs	non-governmental organizations
OECD	Organisation for Economic Co-operation and Development
R&D	research and development
SCAF	Seed Capital Assistance Facility
SCF	Strategic Climate Fund
SCCF	Special Climate Change Fund
SDRs	special drawing rights
SGP	small grants program
SPA	Special Program of Assistance for Africa
UNDESA	United Nations Department of Economic and Social Affairs
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
WTO	World Trade Organization

ABOUT THE AUTHOR

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EXECUTIVE SUMMARY

Based on two ideas — first, that it is a fruitless approach to try to arrange financing for sustainable development without first explaining how the funds will be spent; second, that the many constituencies supporting a clever expenditure plan will support the lateral thinking needed to change the rules to allow for the financing to be effected — this paper explains why the resolution to the climate change problem is deadlocked. Presuming that the required financing will not be forthcoming until there is consensus on the details of the expenditures, the paper presents a putative global package of "expenditure" ideas that will win widespread support from all major countries. These ideas include financing a variety of funds and programs with potentially significant leverage that will mobilize powerful constituencies to lobby for the package. Next, the paper provides two examples where rules and norms changed: the creation of the euro and sovereign debt relief, in order to encourage the reader to "think outside the box," considering options beyond the status quo. Finally, based on a brief review of the wealth of potential innovative financing mechanisms, the paper suggests a "no loser" initiative that would finance the putative global package.

INTRODUCTION

The climate change debate is stuck. The many justifiable projects to mitigate or adapt to climate change are sidelined for lack of money. Sustainable development in general requires extensive expenditures on environmental global public goods, but the prospects for requisite investment are diminished by aversion to risk and the tragedy of the commons. It is imprudent to rely exclusively on an elusive future global agreement on carbon taxes or to expect conventional cap-and-trade schemes to deal with climate change; however, increased global taxation schemes to fund the needed investments are unlikely. The challenge is to address market failures and incorporate social and environmental costs in the regulation and pricing of goods and services. Can assets be created with incentives that increasingly value long-term sustainable development in investment and financial transactions? Is there a global strategy to increase finance for sustainable development, including public and private funding and partnerships to mobilize large volumes of new financing?

The Copenhagen and Cancun climate summits committed to mobilize US$100 billion per year in climate finance for developing countries by 2020; the Durban climate summit agreed on steps to launch the Green Climate Fund (GCF). The 18th session of the Conference of the Parties (COP 18) to the United Nations Framework Convention on Climate Change (UNFCCC) convened in Doha, November 26 to December 7, 2012. For various reasons, "a funding hiatus looms between the end of the 'Fast Start' climate funding

(2010–2012) and the 2020 commitment" (De Nevers, 2012). The legacy of the financial crisis, aside from diverting attention from other issues, has overwhelmed the capacity of governments to invest in needed global public goods. In particular, governments in advanced economies have excessive debt burdens. Fiscally challenged governments — particularly those in crisis — are unlikely to provide resources for global public goods.

Agreement on raising funds should follow consensus on the specific details on how the funds would be spent. The first premise of this paper is that, in order to promote investments in environmental global public goods, major countries must be "bribed." To reach any agreement on the financing of global public goods, a strategy that highlights selfish national interests is required. The debate has not progressed, in large part, because it has focused on raising funds instead of calling attention to the recipients of the expenditures. Proposals have not described the uses of the funds, the expenditure package or the institutional and governance modalities, nor have they identified the many potential beneficiaries. Discussions about how to raise the revenue for global public goods should follow the identification of all the beneficiaries (countries, contractors, firms, universities and research labs) of the expenditure of those resources. It will be easier to raise money if it is obvious how the proposed expenditure package corresponds to the national interests of the major players. It is unlikely that any blank cheques will be written without a convincing picture to show how the proceeds will be disbursed. To advance the file, an explanation must be provided on what, and by what means, the new resources would be managed and spent. Acceptable governance arrangements must be proposed. It is clear that "agreement on any option for collective financing is unlikely, including in the case of the United States, without clarity on what new or existing institutions, under what governance and management arrangements, would deploy the resources" (Birdsall and Leo, 2011).

A second reason the debate has not progressed is that proposed conventional "inside-the-box" solutions cannot deal with the difficulties of long-time horizons, uneven intergenerational benefit streams, uncertainty and lack of shadow prices. Orthodox approaches cannot sufficiently change the incentive structure to generate financing at the scale required. Instead, the second premise of the paper is that what appears to be a "free lunch," that is, an array of subsidy schemes where major countries will agree to a seemingly cost-free approach, analogous to the seigniorage effect of issuing currency, must be devised. Unless countries can "have their cake and eat it too," political obstacles will frustrate any initiative to address various market failures or incorporate social and environmental costs in the regulation and pricing of goods and services. The rules need to be changed.

This paper is organized in an unconventional manner. It starts with a diagnosis of the climate change problem, then presents a putative global package of "expenditure" ideas that will win widespread support from all major countries. The ideas include financing a variety of funds and programs with potentially significant leverage to mobilize powerful constituencies who will lobby for the package. Next, to encourage the reader to "think outside the box," the paper provides a summary of two examples in which rules and norms changed: the creation of the euro and sovereign debt relief. Finally, based on a brief review of the wealth of potential innovative financing mechanisms, the paper suggests a "no loser" initiative that would finance the putative global package.

DIAGNOSING THE CLIMATE CHANGE PROBLEM

Climate change is the environmental public good issue with the most dysfunctional global process. Mobilizing the necessary collective action would ideally entail a range of measures to price carbon emissions, provide accurate credit ratings for countries on unsustainable development paths, tax environmental "bads" and ensure the enforcement of collective agreements. The UNFCCC negotiations are going nowhere. Incompatible bottom lines — especially with China eschewing binding commitments and the United States insisting on them for all countries (see, for example, the Byrd-Hagel US Senate Resolution[1] regarding the conditions for the United States becoming a signatory to any international agreement on greenhouse gas emissions under the United Nations). Negotiations are fruitless despite the growing appreciation of the need for significant investments in new technologies and abatement to respond effectively to the challenge of climate change and to foster sustainable development. Unproductive negotiations continue because the UNFCCC process has become a cottage industry subsidized by taxpayers.

Since the 1989 UN General Assembly resolution mandating the Rio summit to "identify ways and means to provide new and additional financial resources for environmentally sound programmes and ways to effectively monitor the provision of such new and additional resources," there has been little progress on funding mechanisms (UN, 1989). The UN Department of Economic and Social Affairs (UNDESA) report on climate and development (2009: 151–183) reviews methods to "crowd in" private sector financing. It describes cap-and-trade schemes; carbon taxes; sources of green investment and consumer financing; global auctioning of emission permits; a global carbon levy; and revenues from carbon offsetting schemes.

The November 2010 report of the UN Secretary General's High-level Advisory Group on Climate Change Financing

1 See: www.nationalcenter.org/KyotoSenate.html.

concluded that it is challenging but feasible to mobilize US$100 billion a year by 2020 to address the needs of developing countries.[2] The sources analyzed by the group and the annual amounts that can be raised include the auctioning of allowances in domestic emissions trading schemes (US$2 billion–US$70 billion); global offset levies (US$1 billion–US$15 billion); revenues from taxes on international aviation (US$1 billion–US$6 billion); taxes on maritime emissions (US$2 billion–US$19 billion); carbon taxes (US$10 billion); removal and redirection of fossil fuel subsidies (US$3 billion–US$8 billion); redirection of fossil fuel royalties (US$10 billion); financial transactions tax (US$2 billion–US$27 billion); direct budget contributions (reference was made to the proposal of assessed contributions of 0.5 to 1 percent of gross national product, which is US$200 billion–US$400 billion); and net flows of development banks (US$11 billion).

There are three categories of problems that prevent agreement on an appropriate course of action. First, it is difficult to determine where the money will come from. Proposals on potential sources of finance for international development cooperation have been discussed for decades. Agreement on mandatory assessed contributions by developed countries is impossible. Conventional appropriations are unlikely. For example, in the US Congress, which "has raised concerns regarding the cost, purpose, direction, efficiency, and effectiveness of the UNFCCC and existing international institutions of climate financing, the appropriations process" is an intimidating labyrinth (Lattanzio, 2011). Authorizations and appropriations "would rest with several committees, including the US House of Representative Committees on Foreign Affairs (various subcommittees); Financial Services (Subcommittee on International Monetary Policy and Trade); and Appropriations (Subcommittee on State, Foreign Operations, and Related Programs); and the US Senate Committees on Foreign Relations (Subcommittee on International Development and Foreign Assistance, Economic Affairs, and International Environmental Protection); and Appropriations (Subcommittee on State, Foreign Operations, and Related Programs)"(Lattanzio, 2011).

There are severe practical difficulties confronting every innovative suggestion. Internationally concerted taxes are challenging to orchestrate.[3] Ideas for international reserve asset creation, where the International Monetary Fund (IMF) Articles of Agreement would be amended to issue more international liquidity in the form of special drawing rights (SDRs), are generally shelved after two observations. An SDR allocation requires an 85 percent majority (i.e., there is an American veto) and allocations are constrained to be proportional to country quotas.

The second difficulty is that there is no obvious consensus on how a "windfall" or an unconditional "bequest" would be allocated across countries or program categories. Would a prospective "Green Super Fund" (GSF) be allocated proportional to country quotas, proportional to CO_2 emissions or on a per capita basis? Any agreement on a fair and efficient allocation will be elusive. Further, for any given allocation across countries, every expenditure idea has a disadvantage or a perverse unintended consequence. Complications include free riders, administrative provisions to counter the relabelling of activities to allow eligibility, gaming of the programming and unintentional damage to agents offering similar services.

The third difficulty will be reaching an agreement on the day-to-day operation and governance of the GSF. Ban Ki-moon noted that "strong international agreement is needed, along with adequate governance mechanisms, to manage the allocation of additional resources for development and global public goods" (UNDESA, 2012: iii).[4] Even if the world received a windfall from a fabulously wealthy rich uncle, there will be controversy on the process to decide allocations. Who will decide? What are the decision criteria? What are the conditions? The premise of this paper is that it will be easier to gain agreement on raising international resources and on governance mechanisms if agreement on the parameters of the expenditure plan is sought first.

THE GSF ILLUSTRATIVE EXPENDITURE PACKAGE

Suspending disbelief and assuming that (truly new and additional) hundreds of billions of dollars were available for climate change mitigation and adaptation, could the resources be allocated to an effective package of initiatives

2 Of the US$30 billion Fast-Start Finance (FSF) pledged at Copenhagen in 2009, the African Climate Policy Centre found that only US$2.8 billion was "new" funding and only US$2.1 billion has been disbursed. While developed countries' 2010 FSF reports indicated they had collectively generated US$10 billion of the US$30 billion FSF pledge, some developing countries have said that as little as US$2.4 billion has actually been made available. See: http://pdf.wri.org/working_papers/ocn_us_fast-start_finance_contribution.pdf. "According to reported information of the pledged funds, USD 28.06 billion has been requested and/or budgeted by the executive bodies of the countries during the fast-start period. In some cases, the legislative bodies have also approved these requests. The actual delivery and implementation of the finance, however, can be complicated to track, and is generally not documented in countries' fast-start finance reports" (Polycarp et al., 2012).

3 One very optimistic scenario is that over time, a regime of carbon taxes will be established in major countries, followed by a series of border tax adjustments (BTA) to protect domestic industries, perhaps leading to export taxes on carbon content to recapture BTA revenue — eventually leading to a global World Trade Organization (WTO) regime that ultimately prices carbon effectively and resolves the climate change problem. Don't hold your breath.

4 Agreement was reached at COP 18 to host the GCF in Songdo, Korea. FCCC/CP/2012/5. See: http://unfccc.int/resource/docs/2012/cop18/eng/05.pdf. The executive director will be selected in 2013.

in a manner that would generate worldwide support? This section proposes such a package. Subsequent sections give examples of presumably inviolable rules being changed, suggest ideas to raise the money to fund the expenditure package and assess the potential reaction of the major players.

To get over the humps inherent in investing in the environment and global public goods, a series of market failures that prevent appropriate investments must be confronted. Clearly, if there was agreement on international fees, such as a tax on financial transactions, international aviation or shipping,[5] so much the better. But this paper presumes that politics prevents action on taxation or shadow pricing and that the catalyst to change will be expenditure-based. Where upfront costs and barriers to investment justify technical and financial assistance, a putative GSF could cover the cost of infrastructure, policy measures to promote low carbon choices, or investments needed to make economies resilient to the adverse impacts of climate change.[6]

Richard K. Lattanzio's GCF Congressional Research Service Report (2011) outlines the design challenges of a new global instrument. First, there is the question of the relationship with other funds. The GSF should be an umbrella "fund of funds," able to exploit the comparative advantages of the other mechanisms. Then it would become a source of funds for, and not a competitor with, the Global Environment Facility (GEF) or the Adaptation Fund, for example. Second, there is the question of eligibility. All countries, not just developing countries, would be eligible. If the United States is eligible and would, in fact, receive windfall funds, it would not object to allocations to middle-income countries like Brazil, India, South Africa and China. Third, there is the question of balance in allocations between mitigation and adaptation. Obviously, though, it will be easier to gain agreement on the balance in a context of significant additional resources. Fourth, there is the question of how countries would access funds, which agencies and organizations would be allowed to acquire funds to implement projects and whether all funds would be channelled through UN agencies, multilateral development banks (MDBs) or major non-governmental organizations (NGOs). The GSF could allow a recipient country to access financial resources directly or allow it to assign an implementing agency of its own choosing. Finally, there is the question of grant versus debt instruments. The intent should be that resources are sufficient to provide grants when necessary, depending on the country and the nature of the project.

Where appropriate, auctions could be used to produce the largest expected greenhouse gas reduction per dollar of funding. "Incentivizing, informing and nudging, or imposing — some combination of the three is likely to be needed," advises the World Bank (2012b). Imposing a global solution is extraordinarily unlikely, so this paper focuses on measures to incentivize, inform and nudge. Subsidy, insurance and guarantee approaches can be supported by the GSF. It could also encourage all funding vehicles to add an information activity aimed at changing behaviour. Citing Thaler and Sunstein (2008), the World Bank suggests that "[a]nother approach showing promise is tweaking 'choice architectures' to 'nudge' people to make better decisions for the environment…without restricting their freedom of choice. To count as a nudge, the intervention must be easy and cheap, but not constitute a mandate."

A graphic example of a nudge case was reported by CNN — the question: what is the best way of encouraging men to pee more accurately in public urinals? Answer: Give them a target. "That's what a maintenance man working at Amsterdam's Schiphol airport suggested: Etch an image of a house fly on the urinals to give men something to aim at. Overnight, the quantity of misdirected urine fell by about 80 percent, according to the airport. The painted fly is an example of a 'nudge' — a subtle way of influencing behavior without offering material incentives or imposing punishments" (Webster, 2012). One approach is to make consumers more aware of how much energy others are consuming. "Knowing how other people behave is often a potent determinant of our own actions. Energy bills that inform users of how they compare with those on the same street or neighborhood are currently being trialled in parts of the UK" (Webster, 2012). The World Bank notes that "[c]hanging the default options — without changing the options themselves — can be an efficient way to promote greener behaviors" (2012b). They point to a case where the default option offered by the electricity provider was cleaner, but more expensive. In this scenario, fewer than five percent of customers requested a shift to a cheaper, but less green, source of electricity (Picherta and Katsikopoulos, 2008).

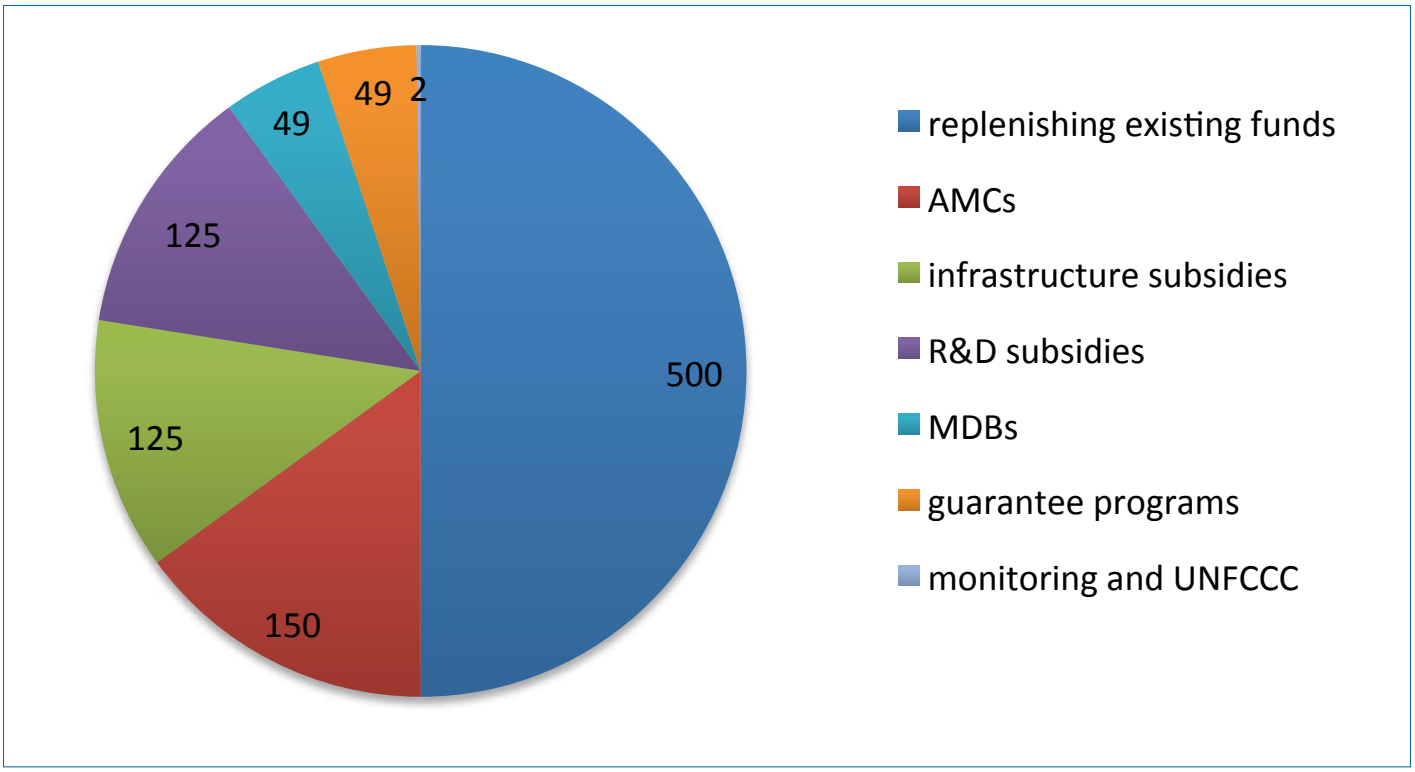
A range of interventions are called for:

- contributions to existing funds;
- advanced market commitments (AMCs);
- guarantee programs;
- infrastructure subsidies;
- research and development (R&D) investments;

5 Proponents point to the precedent for global fee collection that does not go through national tax authorities, the International Oil Pollution Compensation Fund, which provides compensation for oil spills from tankers.

6 For a good review, see www.globaleconomicgovernance.org/wp-content/uploads/Climate-Finance-for-Development_deNevers.pdf.

Figure 1: GSF Expenditure Package (Billions of US Dollars)



Source: Author

- MDBs; and
- monitoring.

Figure 1 pictures a hypothetical bequest of US$1 trillion dollars to be distributed at a rate of US$200 billion per year for a five-year period.[7]

CONTRIBUTIONS TO EXISTING FUNDS

To gain widespread support and to avoid accusations of reinventing the wheel, prudence requires contributing to several current funding vehicles to exploit the existing administrative capacity. Governance and decision rules for allocation are controversial. Noting that no new bureaucracies will be created will avoid controversy and help sell the idea to all countries' electorates. The disadvantage of this approach is that traditional funding sources may withdraw due to the new "replenishment," leading to criticism that the incremental resources are not "new and additional." The Overseas Development Institute and the Heinrich Böll-Stiftung track activity in more than two dozen funds for climate change mitigation and adaptation.[8] Among the existing funds that could be capitalized or replenished are:

- The Global Environment Facility
- The GCF
- The Climate Catalyst Fund LP
- The Climate Public Private Partnership
- World Bank Clean Technology Fund[9]
- World Bank Strategic Climate Fund
- The Adaptation Fund
- The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD)

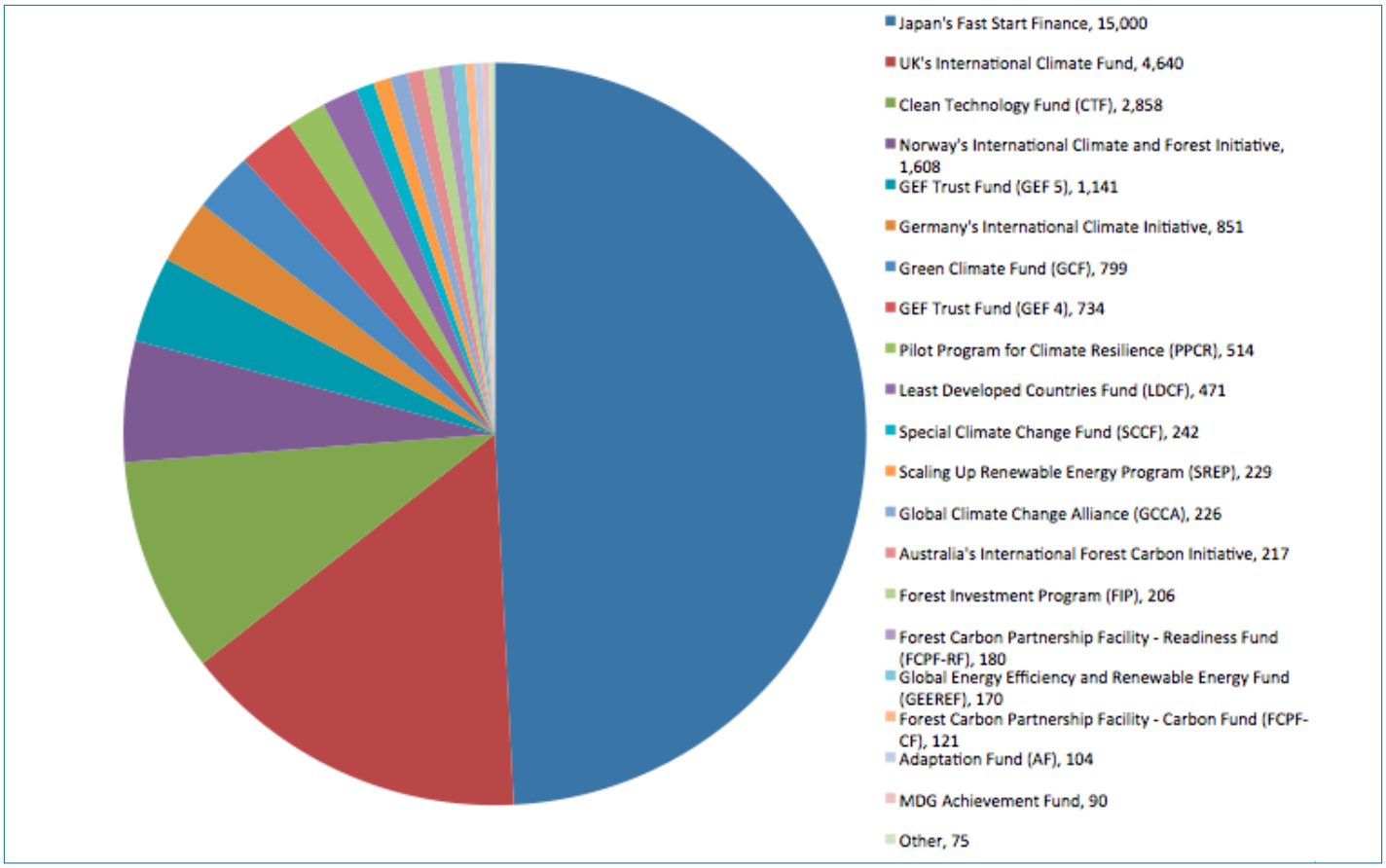
Annex 1 provides brief descriptions of some of these funds. The management and proponents of these existing organizations will strongly support significant financial infusions.

7 The US Federal Reserve announced "quantitative easing," that it would buy US$40 billion of mortgage-backed securities each month (less than the US$75 billion a month it bought in its second round of bond-buying or the more than US$100 billion monthly tab for its first round).

8 See: www.climatefundsupdate.org/listing.

9 See: http://www.climateinvestmentfunds.org/cif/.

Figure 2: Climate Funds, Based on Pledges (Billions of US Dollars)



Source of Data: Climate Funds Update (2012).

AMCs FOR LOW CARBON

AMCs are market creation mechanisms that provide the incentives and guarantees needed to ensure sufficient returns on investment by private sector developers. They have been defined as temporary interventions accelerating investment to promote the deployment of existing technologies, or to encourage incremental R&D, by increasing the certainty of revenues from markets. They include a wide number of well-established interventions in the developed world, such as feed-in tariffs and obligations with respect to renewables. Commitments can be defined in terms of price, quantity or revenue. The idea was first proposed as a solution for the development and manufacture of vaccines for diseases prevalent in poor countries,[10] but the idea can be applied to support research, development and deployment of low-carbon technology. AMCs offset risks to first movers by repaying investors upfront investments.

Ten years ago, the Center for Global Development (CGD) promoted the idea of AMCs for vaccines to address the market's failure to sustainably serve poor countries. CGD Visiting Senior Associate Jan von der Goltz (2010) has considered the merits and risks of extending the idea to climate change mitigation, and their takeaway message for extending the concept to climate change issues is that "the specific product, market, industry, and policy context matter!" Von der Goltz's presentation reviews the parameters and questions to ask in assessing the merit and risks of a proposed AMC.

For example, if the AMC is to finance off-grid renewable energy in developing countries, can it be installed, operated and maintained with local capacities? Von der Goltz concludes that the basic conditions for an AMC include a market failure due to uncertainty over recouping investment, knowledge of the demand and cost curve for the product, a high and robust social return high, and knowledge and trust of government policies.

The critical issue is the leveraging of private funds. A Chatham House/UK Department for International Development (DFID) meeting report (2010) explored the use of AMCs to support low-carbon technology deployment. The three conditions for AMCs are proven technology, potential scalability and investor uncertainty. Necessary factors for success include capable producers, a market

10 See www.gavialliance.org/funding/pneumococcal-amc/ for information about its current status.

guarantee and a financing agreement that would price the product once it has been scaled up, since risk will fall with the advance of scale. The concept of AMC interventions has been applied to climate issue in the developed world in the form of feed-in tariffs and renewables obligations.

In theory, AMCs could be used to promote radical breakthrough technologies, but they are better suited to promote the deployment of existing technologies or incremental R&D (Vivid Economics, 2009). AMCs are temporary measures to reduce the costs of deployment, not permanent subsidies. Administrative mechanisms, different support for different technologies or competitive auctions can be applied to minimize the creation of inappropriate rents (Vivid Economics, 2009).

The idea of applying AMCs is not new. In 1991 and 1992, the Swedish Energy Agency successfully arranged for a group of public sector buyers to commit to the procurement of energy-efficient lighting. Sweden has also used an AMC approach to successfully accelerate the market for heat pumps.

In 1998, the US Department of Energy (DoE) accelerated the introduction of appropriately sized, energy-efficient (compact fluorescent) light bulbs by coordinating private procurement. Targets were achieved and the AMC was swiftly withdrawn. By 2009, energy-efficient light bulbs provided over 90 percent of the lighting needs in commercial and industrial buildings.[11]

Germany has used feed-in tariff regulation (a fixed-priced AMC) to support renewable energy production since the early 1990s. Public electricity suppliers were required to buy power supplied by renewable generators at a fixed but reasonable price.[12] The volume of wind turbines installed led to a lucrative market for the manufacturing of wind turbines.

One option is to establish a corporate entity to sit between private renewable power plant developers and utility and industrial electricity customers, buying and reselling power, paying suppliers tariffs that are adequate to justify projects. In any case, dedicating significant incremental resources should be enthusiastically welcomed, especially if overseen by a new subsidiary jointly owned by the World Bank and the United Nations.

INSURANCE AND LOAN GUARANTEE PROGRAMS

It has been argued that, given that banks and institutional investors are sitting on tens of trillions of dollars of investible cash, the question ought to ask how to attract those funds to new low-carbon technologies and climate action investments in developing countries (de Nevers, 2011). Trevor Houser and Jason Selfe (2011) suggest that "Washington's best hope is to use limited public funds to leverage private sector investment through bilateral credit agencies and [MDBs]." Ideally, public money would catalyze large multiples of private investment. De Nevers (2011) concludes that there is no silver bullet — leveraging public funds to mobilize private finance "will require developing deal flow: identifying well designed projects with good underlying economic and financial parameters, that conform to investment grade standards in countries with attractive regulatory regimes; reducing real and perceived risks; enhancing returns; and supporting the creation of new investment vehicles." It would be difficult to ensure that public funds would not overcompensate rent-seeking private investors by reducing risks and enhancing returns. Well-designed insurance schemes must offer some prospect of success.

Any scheme must anticipate opposition, based on the Solyndra debacle in the United States, so named for the solar panel manufacturer that declared bankruptcy in 2011, shortly after receiving a US$535 million loan guarantee from the Obama administration. The US House of Representatives recently passed the "No More Solyndras Act."[13]

Major countries can exploit the experience of their export credit agencies (ECAs) and MDBs to provide investment guarantees or co-investment. The World Bank offers partial risk guarantees in low-income countries to private lenders against country risks that are beyond the control of investors, and where official agencies and private markets currently offer insufficient insurance coverage. These guarantees can cover up to 100 percent of the principal and interest of a private debt tranche for defaults arising from specified sovereign risks, including government breach of contract, foreign currency convertibility, expropriation and political violence. The World Bank provides guarantees that cover export-oriented foreign-exchange-generating commercial projects operating in low-income countries that would not normally be eligible for market-based lending.[14] This kind of instrument may

11 The barrier to widespread installation of energy-efficient light bulbs (also known as compact fluorescent lamps) was that they did not fit into standard light fittings. The DoE coordinated with private institutional buyers, such as housing developers, to devise a detailed specification for energy-efficient light bulbs, then offered a tender call, providing the requisite demand to ensure that the small innovation costs were covered (Vivid Economics, 2009).

12 That is, 90 percent of the average price of electricity as charged to final consumers in the previous year.

13 Opponents of the bill said it would take government out of innovation and unfairly preserved loan guarantees for nuclear and fossil fuel projects. See: http://thecaucus.blogs.nytimes.com/2012/09/14/house-passes-solyndra-act-aimed-at-obama/.

14 See: http://siteresources.worldbank.org/INTGUARANTEES/Resources/IBRDEnclavePRG.pdf.

be relevant for renewable energy projects in very low income countries, for example, large hydropower projects such as the Nam Thuen 2 project in Laos, where most of the power will be exported; this type of guarantee might also be relevant for hydropower projects in Africa. As a recent Leading Group conference agenda (2012) suggests, an innovative financing mechanism that contributes to resource development would include "[p]ull mechanisms which make it possible to secure massive guaranteed prefinancing based on loans, such as the International Finance Facility for Immunisation."

If the GSF provides billions of dollars as seed capital to establish new dedicated facilities in existing ECAs and MDBs, those institutions should be able to leverage very significant investments in desired activities that are currently not undertaken for want of insurance or appropriate guarantees.

INFRASTRUCTURE

Many national governments have recent experience in the accelerated funding of infrastructure as part of their stimulus package responding to the financial crisis. An allocation process could be devised for a global infrastructure fund that would channel resources directly to national governments as 100 percent forgivable loans to fund projects selected on the basis of their merit vis-à-vis adaptation imperatives or on the case for reducing future carbon emissions. Sign-off could be required by the Group of Twenty (G20).

R&D

We need significant advances in science and technology to meet the challenges of climate change. Incremental funding for R&D create the necessary technologies and knowledge that will help decrease reliance on fossil fuels. There are two approaches, which are not mutually exclusive. One is a royalty-free, global R&D collaborative to focus on low carbon energy R&D, with royalty-free technology transfer. There are many examples of collaboratives: ITER (formerly International Thermonuclear Experimental Reactor); the Consultative Group for International Agricultural Research; the China Greentech Initiative; and the Asia Pacific Partnership on Clean Development and Climate. A new institute — with research facilities in several countries (to help garner support for the overall SDR-funded GSF concept) — would receive the financial resources for an order of magnitude increase in low-carbon research efforts. The institute could house an international adjudication committee of international experts to assess submissions and award funding to the best proposals. Research outputs would be put in the public domain so they could be deployed in projects and for practical use.

The second approach would be a notional allocation by country, distributed through national competitions. Universities, government laboratories, non-profit organizations and the private sector would be eligible to submit research proposals. Several countries have programs for promoting R&D at the national level and there is extensive experience worldwide with granting agencies administering competitive bidding processes. Care would be taken that funding would not displace investment that would take place anyway, in the absence of the initiative.

MDBs

The World Bank recommends that international financial institutions help by changing risk-return profiles and giving investors more confidence in the long-term viability of their projects, especially in developing countries that lack well-developed capital markets or banking institutions able to transform short-term deposits into long-term products and refinancing tool options. Their diagnoses are that:

- "Energy efficiency suffers from the fact that most local banks rely on balance sheet financing, rather than project-based financing that is based on the cash flow generated by the investments."
- "Developing-country governments are often reluctant to borrow to prepare uncertain projects, while private investors are unwilling to invest in preparing a project they may have to bid for and not win."
- Vacillating and unreliable government support. "Spain's retroactive reductions in solar feed-in tariffs, and Germany's and France's decisions to reduce the amount of support for future projects, plus the lack of progress on a US energy bill all combined to depress the private sector's appetite for renewable energy investments" (World Bank, 2012a).

In sum, private financing of green infrastructure is handicapped by:

- The scarcity of resources to prepare projects and bring them to the "bankable" stage.[15]
- The mismatch between the nature of the funds available (given the preference of investors for short-term funds) and the needs of capital intensive infrastructure for renewable energy with a long payback period of 15–25 years.
- The challenge of cost recovery, while ensuring affordability for low-income households.

15 The Seed Capital Assistance Facility (SCAF) helps energy investment funds in Asia and Africa to provide seed financing to early-stage clean energy enterprises and projects. The SCAF is implemented through the United Nations Environment Programme, the Asian Development Bank (ADB) and the African Development Bank. See: www.scaf-energy.org/about/introduction.html.

- The profitability of green investments, which is often dependent on public policies, such as feed-in tariffs (World Bank, 2012a).

To maximize leverage, the World Bank prescribes:

- Credit lines or guaranteed instruments to engage private banks.
- "Fund of funds," under which governments invest a relatively small amount of long-term capital in a range of private, professionally managed funds that then invest in clean energy or energy efficiency.[16]
- Public funds to reduce interest rates for consumer financing, typically through financial institutions or utilities.
- Energy service companies can pay for environmental services.

With respect to credit lines, the World Bank (2012b) reports that "the experience of the International Finance Corporation [IFC] is telling: between 1997 and 2011 some US$65 million in concessional funding, primarily for risk-sharing facilities, generated US$680 million in sustainable energy finance investments." The IFC would be given the resources to scale up by orders of magnitude. Each regional development bank could be endowed with resources to establish a "fund of funds" and challenged to invest amounts of long-term capital in selected private, professionally managed "green" funds. Budget support would be provided to governments to support funding programs to utilities to reduce interest rates for consumer financing. Energy service companies could be subsidized to support energy savings measures by farmers and landowners such as regulation of water flows, water purification and control of soil erosion.

Concessional resources for climate finance are nothing new for the regional development banks.[17] The Clean Energy Financing Partnership Facility is an ADB mechanism "to coordinate existing and new resources to promote the deployment of new, more efficient and less polluting supply and end-use technologies…The facility's resources also finance policy and institutional reforms, as well as regulatory frameworks that encourage clean energy development" (ADB, 2012).

The ADB has partnered with the Australian chapter of the Global Carbon Capture and Storage (CCS) Institute to assist in preparing demonstration projects that will lead to commercial-scale deployment of CCS. Another initiative the ADB is proposing is "an assisted broker model that will proactively identify partnerships between willing buyers and sellers of low-carbon technologies in order to facilitate their rapid transfer and diffusion in Asia and the Pacific" (ADB, 2012). The ADB reports that the Asia Climate Change and Clean Energy Venture Capital Initiative supported an equity infusion to several venture capital funds to accelerate private-sector-based innovation, transfer and diffusion of climate change technologies. In addition to the mainstream vehicles, the ADB is involved with the Climate Change Fund (CCF), the GEF, the Climate Investment Funds (CIFs), the Water Financing Partnership Facility and administers the Poverty and Environment Fund.

The African Development Bank just announced the Sustainable Energy Fund for Africa, a joint initiative with the Danish government. It approved its first grant of US$825,000 to finance the concept phase of the Green Tech Financial Facility, a vehicle for investments in private-sector-driven green technology projects including market scoping and positioning studies, fund conceptualization and fund manager selection.

The World Bank and the regional development banks are already in the business. The question that remains is by how much and over what time period can they effectively scale up, if the funds were available?

MONITORING

An independent organization would have to be set up to monitor allocations, progress and outcomes for activities funded by the GSF, and transparency will be essential. Individuals of unquestioned integrity and ability will have to be selected for this group, as there will be unprecedented scrutiny of both the fund and its allocations; any hint of corruption or incompetence would be highlighted. Without complete transparency and the possibility of "naming and shaming" to provide some accountability, the idea will founder.

MISCELLANEOUS IDEAS

Room would have to be provided for ideas that do not fit into any of the boxes described above. For example, it is likely that the most significant factor in reducing emissions would be the leverage exercised by national regulators and fiscal authorities. They set the ground rules and incentives that influence investments. Perhaps a highly publicized, prestigious prize could be established for the regulatory or fiscal actions that are most effective or ingenious, along the lines of a Nobel Prize, with a significant financial award to be provided to the charity of the winner's choice. The jury awarding the prize could be selected by the G20.

16 The ADB reports it recently selected five funds that will invest for long-term capital appreciation in private companies and projects that are active in the renewable energy and energy efficiency sector in Asia.

17 See www.adb.org/sectors/energy/overview for details.

THINKING OUTSIDE THE BOX

We all suffer from the presumption that the status quo will not change. Despite overwhelming historical evidence to the contrary, it is difficult to foresee that some political entities will die, some unions will dissolve, and new federations, communities and unions will be formed. Despite the manifest history of business cycles and innovation, we find it difficult to anticipate the disappearance of powerful multinational corporations and the decline of formerly important economic sectors.

Despite the accepted fact that we are living in an environment of constant and accelerating change, we cannot envision how certain desirable (in the sense of the global interest) economic and political changes will come. There are cases when we should suspend disbelief. Necessary, but not necessarily sufficient, ingredients to catalyze change include a coherent vision of a better option, a champion to articulate and promote the vision, and a process of scheduled meetings to develop and nurture strategy to realize the vision. Perhaps the most necessary condition for radical change is "incrementality" — the process of change accomplished by a series of small steps towards the vision. Two examples are the euro currency and policy on sovereign debt relief.

In 1961, Canadian economist Robert Mundell raised the then bizarre question: "When would it be advantageous for nations to give up monetary sovereignty in favour of a common currency?"[18] The founders of the European Community (EC) realized as long as 50 years ago that the creation of a common market would one day necessitate a common economic and monetary policy. In 1969 the heads of state officially launched the initiative for economic and monetary union (EMU). Luxembourg's Prime Minister and Finance Minister Pierre Werner chaired a committee that mapped out a timetable for the project, outlining a three-stage plan that would fuse national instruments for economic and monetary control into EC instruments to be used for common ends by 1980. The oil crisis, divergence in national economic policies and a weak US dollar scuttled the second stage of the Werner plan in 1974.

In 1979, the European Monetary System (EMS) was created, involving an unprecedented transfer of monetary autonomy. The EMS created a stable, adjustable mechanism for exchange rates by defining central rates in relation to a new "basket" currency — the European currency unit. Exchange rate fluctuations were greatly reduced, ushering in a new era of economic stability between member states. As inflation rates fell and converged in the mid-1980s, it became clear that the time was right for a new push toward EMU.

In 1988, a committee was established under the then President of the European Commission, Jacques Delors, to make the proposals for the legal and economic arrangements required for the completion of the EMU. Mr. Delors recommended a three-stage plan for greater coordination of economic and monetary policies with the intention of creating a single European currency under the stewardship of a European central bank. The first stage of the Delors plan began in 1990, and the European Council was convened at Maastricht in 1991. It was there that the heads of state signed the Maastricht Treaty, setting out the tough economic convergence criteria that had to be met to qualify for the single currency. The third and final stage of EMU started January 1, 1999, and the new single currency was born. Who, even as late as 1985, would have believed that the German mark, the French franc and the Italian lira would disappear? It happened only 25 years after Mundell raised the question, generated by an articulate vision, effective champions, a host organization where the principals met repeatedly and a series of calibrated steps.

By the end of the 1980s, sovereign debt repayments were crippling many developing countries, impeding poverty reduction and economic development. These countries were spending more on servicing debt payments than on health and education. Debtor countries arranged new loans to service interest payments on their old loans to donors and international institutions. The response to observations that these loans should be written off — carrying them as assets was a fiction — was countered at the time by the axiom that: "All sovereign debt is collectible." Over the next 20 years, however, there was a gradual shift in this norm. By the end of 2010, donors and international financial institutions (IFIs) approved more than US$76 billion in debt reduction packages for 36 countries, 30 of them in Africa (IMF, 2012).

One of the first debt initiatives was the Special Program of Assistance for Africa (SPA) in 1987. The SPA was a voluntary group of donors who started to provide bilateral debt relief. The SPA was followed by the highly contentious Brady Plan of 1989, launched by the US treasury secretary at the IMF meetings to promote relief for countries heavily indebted to commercial banks. Similar initiatives intensified in the 1990s, with bilateral donors moving away from concessional loans toward grants and simultaneously negotiating formal programs of official debt relief with the multilateral lenders. By the mid-1990s, an increasing proportion of the debt of the poorest countries was owed to the IMF and the World Bank.

The 1995 Group of Eight (G8) summit agreed to pursue the development of a comprehensive approach to address the special problems of the poorest heavily indebted countries. The World Bank and IMF encourage flexible

18 Mundell's Nobel Prize was awarded for a body of work that includes the 1973 chapter "A Plan for a European Currency" in *The Economics of Common Currencies*, edited by H. Johnson and A. Swoboda, (London: George Allen & Unwin Ltd., 1973).

application of existing instruments and the creation of new mechanisms for debt relief to help those poorest heavily indebted countries that have demonstrated a track record of sustained good policy performance. The IMF and World Bank launched the Heavily Indebted Poor Countries (HIPC) Initiative in 1996, "with the aim of ensuring that no poor country faces a debt burden it cannot manage" (IMF, 2012). In 1999, the Fund reviewed the HIPC Initiative and began a more comprehensive relief program, linking debt relief to poverty reduction and social policies.

In 2005, the Multilateral Debt Relief Initiative (MDRI) supplemented the HIPC Initiative to facilitate progress towards the Millennium Development Goals. Under the MDRI, once countries complete the HIPC Initiative process, the IMF, World Bank and African Development Bank provide 100 percent relief on eligible debts (IMF, 2012).

In 20 years, the IFIs transformed the norm that sovereign debts will always be collected. The norm began to change because of key states and NGOs advocating for debt relief. They were able to persuade others, including the World Bank and the Group of Seven, to allow the emergence of a new norm of sovereign debt forgiveness for developing countries.

FINANCING THE GSF: HOW TO GET THE MONEY

The UNDESA report *World Economic and Social Survey 2012: In Search of New Development Finance* is the latest comprehensive study reviewing new approaches to raise funds for public goods. The survey canvasses innovative sources including new issuance of SDRs; carbon taxes; means to leverage SDRs; taxes on financial transactions, billionaires and currency transactions; as well as emissions trading and an air passenger levy. It also reviewed mechanisms to manage risk, such as insurance pools (UNDESA, 2012).[19] Among the ideas promoted for innovative financing mechanisms to raising new resources, several categories are unlikely to be finalized and operational in the near future. Four approaches are prohibitive long shots:

- coordinated international taxes on globalized activities with management of their usage being pooled (for example, air tickets or the financial transaction tax);
- global carbon emissions trading;
- debt management mechanisms, for example "debt to health" and "debt to nature"; and
- international lotteries.

New taxes are highly unlikely, given the extensive political opposition. For example, a scheme based on the extraction of resources from the global commons through the taxation of seabed mining in international waters is a problematic long shot. Instead, the solution must be an apparent "free lunch" — the only such vehicle is the innovative use of SDRs. The most likely of the unlikely alternatives is innovative use of SDR allocations. As the IMF fact sheet on SDRs says, "The SDR is an international reserve asset, created by the IMF in 1969 to supplement its member countries' official reserves. Its value is based on a basket of four key international currencies, and SDRs can be exchanged for freely usable currencies. With a general SDR allocation that took effect on August 28 and a special allocation on September 9, 2009, the amount of SDRs increased from SDR 21.4 billion to around SDR 204 billion

19 Useful surveys include the World Bank Report, Innovative Financing for Development (http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1110315015165/%5Bebook%5DInnovative_Financing_for_Development.pdf); the Landau report (www.cttcampaigns.info/Members/mikael/docs040415); A. B. Atkinson's "Innovative Sources for Development Finance: Over-Arching Issues" (http://www.cbd.int/doc/external/unu/unu-dp2003-088-en.pdf) ; William Jack's 2001 article "Social Investment Funds: An Organizational Approach to Improved Development Assistance," exploring the efficacy of social investment funds in projects in Armenia, Zambia and Honduras (http://wbro.oxfordjournals.org/content/16/1/109.abstract?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=1&title=Social+Investment+Funds&andorexacttitle=phrase&andorexacttitleabs=and&andorexactfulltext=and&searchid=1126040033061_51&stored_search=&FIRSTINDEX=0&sortspec=relevance&journalcode=wbro); the World Bank's Pilot Programme for Climate Resilience (http://siteresources.worldbank.org/INTCC/Resources/progressreportPPCR.pdf); Stephen Spratt's report detailing the Global Capital Fund Mechanism, where money is frontloaded by issuing bonds on the international capital markets (www.stampoutpoverty.org/download.php?id=381); and the BioCarbon Fund, a public-private initiative administered by the World Bank. See, particularly, the call for project proposal for Tranche Two, with a total capital of US$36.6 million (http://wbcarbonfinance.org/Router.cfm?Page=BioCF).

(equivalent to about [US]$310 billion, converted using the rate of August 20, 2012)" (IMF, 2012).[20]

In 2009, the IMF established a framework for issuing securities. The notes are denominated in SDRs, with a maximum maturity of five years. The notes, which pay interest, are not traded on private markets, but are tradable within the official sector. IMF securities are an attractive element in the portfolio of some countries' reserves.[21] But under the current legal arrangement, a source has to be found to raise the notes' interest. Current arrangements to raise revenue are limited to apply the resources from the sale of IMF gold or applying the income from conventional IMF loans (IMF, 2009). This approach will not work for the scale required; thus, a method must be devised that does not require interest to be paid.

The IMF's Bredenkamp and Pattillo propose a green fund based on an initial capital injection by developed countries in the form of reserve assets to leverage resources from private and official investors by issuing low-cost green bonds in global capital markets (2010). They suggest that "Contributors could agree to scale their equity stakes in proportion to their IMF quota shares, making these the 'key' for burden sharing among the contributing countries" (Bredenkamp and Pattillo, 2010: 4). (The allusion to "burden sharing" dooms this idea.) They suggest the fund would mobilize subsidy resources from contributors, sourced by carbon taxes and expanded carbon-trading schemes, bond proceeds, interest income on its reserve asset capital base and revenues from other innovative international tax schemes. In sum, the idea is a political non-starter.

In a similar scheme, Birdsall and Leo (2011):

> recommend that willing governments utilize a modest portion of their existing SDR allocations to capitalize a third-party financing entity. This entity would offer bonds on international capital markets backed by its SDR reserves. The proceeds would back private investment in climate-mitigation projects in developing countries that might otherwise lack adequate financing. This approach could mobilize up to [US]$75 billion at little or no budgetary cost for contributing governments. Any limited budgetary costs could be offset by using excess proceeds from recent IMF gold sales. In our view, capitalizing a small portion of existing global assets — SDRs with a small back-up reserve of the income from gold already sold — to finance programs that deal with global public goods and bads makes eminent sense.

What Birdsall and Leo propose is not to directly spend SDRs, but rather to float bonds backed by SDRs.[22] In one proposal, a GCF would issue US$1 trillion in bonds backed by US$100 billion in SDR equity in a leverage ratio of 10 to 1. In another proposal, idle SDRs would be used to purchase bonds directly from MDBs. The GCF (or global fund to fight climate change) could collect market-based interest payments from at least some borrowers, which it would then use to pay its bondholders. As low-income countries may not be able to afford such loans, the fund would also receive additional annual contributions from donors to enable it to underwrite its concessional activities. The main concept underlying the proposal entails using SDRs to purchase long-term assets. The attraction resides in the ability to tap the large pool of "unused" SDRs, in order to invest them either for development purposes or, as in the above proposal, in equity shares in a GCF.

Another idea, suggested by the Beijing Group, is "that the SDRs' role be expanded through new issues and by increasing their use in IMF lending" (Beijing Group, 2011). They argue that "doing so would build on the enlightened suggestion made at the G20's London meeting in April 2009 to issue SDRs equivalent to $250bn," as a means of increasing liquidity to counter recessionary trends arising from the global financial crisis (Beijing Group, 2011). But as the 2009 issuance was to countries in accordance with the IMF quotas, developing countries obtained only a small share of the allocation. For future issues (the Beijing Group suggests an annual issue of SDR 150–250 billion, approximately US$240–US$390 billion at current exchange rates), countries' unused SDRs could be held as "deposits" by the IMF, which the Fund could then use to finance its lending programs. The Beijing Group argues that it would have the associated effect of modestly reducing "the recessionary bias in the world economy" and "would also facilitate some reduction of global imbalances" (Beijing Group, 2011).

The UNDESA suggests a general SDR allocation, with two-thirds dedicated to developing countries (2012). The argument is that "SDRs remain a reserve asset, but

20 As the IMF states, "The SDR is neither a currency, nor a claim on the IMF. Rather, it is a potential claim on the freely usable currencies of IMF members. Holders of SDRs can obtain these currencies in exchange for their SDRs in two ways: first, through the arrangement of voluntary exchanges between members; and second, by the IMF designating members with strong external positions to purchase SDRs from members with weak external positions. SDRs represent a potential claim on the freely usable currencies of IMF members, which may be exchanged in times of need. Currently, the value of the SDR is determined by a basket of four currencies (euro, yen, pound sterling, and US dollar)." See IMF Fact Sheet: Special Drawing Rights, available at: http://www.imf.org/external/np/exr/facts/sdr.htm.

21 John Williamson argues that the SDR will become an attractive asset if, and only if, they provide reserve holders a higher interest rate — which involves a cost to the entity paying the interest.

22 A similar scheme is proposed by Bredenkamp and Pattillo (2010).

their additional availability" would "reduce the need for individual developing countries to set aside foreign-exchange earnings in reserve holdings of their own as a form of self-insurance against global market shocks" (UNDESA, 2012). This idea was "dead on arrival," because allocating SDRs in a proportion different from country quotas requires amending the IMF Articles of Agreement and, like decisions for a general SDR allocation, requires an 85 percent approval of member votes, giving the United States an effective veto. There is no realistic scenario where the United States would agree to this proposal.

As ingenious and politically courageous as they are, all the proposals to date for the innovative use of SDRs — which include monetizing existing SDRs (either through SDR on-lending or in freely usable currencies following conversion);[23] committing existing SDRs to support the capitalization of a third-party entity; or holding unused SDRs as "deposits" by the IMF, which the Fund could then use to finance its lending programs — remain unambitious because they are working within existing legal constraints.[24] A more radical option is required, relaxing some axiomatic assumptions. Counterintuitively, the more radical option is more likely to prove acceptable.

Imagine if the IMF Articles of Agreement were amended to allow for a new issue that was provided entirely as an endowment to the GSF.[25] The new fund would be restricted to spending the endowment according to a formula based on quota shares and adjusted to provide proportionately larger shares to large emitters. Where necessary, countries could amend legislation to accord with the interpretation that allocations to the GSF are grants and not loans, hence, they do not involve any liability to any individual country. The key points are, first, that countries would perceive the "free lunch" elements in the resulting expenditures in their countries, and second, that this action is unlikely to be inflationary in the current world macroeconomic context. Holdings of foreign exchange reserves are excessive — the current level is more than US$10 trillion. Central banks and monetary authorities could be convinced to increase the proportion of SDRs in their reserve holdings in exchange for reserve currencies, even if SDRs did not pay interest.

The likely criticisms of "quantitative easing" for SDRs will relate to the degrees of centralization, ambition and scale, the sanctity of SDRs for the purpose of reserve, potential crowding out, inflationary trigger issues and the lack of transparency. Potential criticisms include:

- the danger of a world central bank, leading to the eventual loss of national sovereignty;
- the excessiveness of the sums involved;
- that reserve assets are intended to be reserves and should not be diverted for other purposes;
- that inflation will result;
- the scheme creates "off-balance sheet" liabilities for contributing governments, in a non-transparent fashion;
- Americans may argue that the scheme is an opaque attack on the US dollar's role as premier reserve currency; and
- success would unleash a flood of unlimited requests to use "SDR quantitative easing" for development purposes in general.

The size of the GSF capital base should be set at the apparently outrageous sum of US$1 trillion (10 percent of total international reserves, disbursed over a period of years). The scheme will not deplete the reserve holdings of any country — they will simply be exchanging currency reserves for SDRs. In any event, the IMF Articles of Agreement can be amended to deem the new allocation dedicated to the GSF as equivalent to seigniorage, disbursed to avoid major disruption to global activity. Inflationary pressure is unlikely in the next few years, given the extensive unemployment in OECD countries and slowdowns occurring in BRICS countries (Brazil, Russia, India, China, South Africa). Pressure will ease on sovereign bond issues. Currently, SDRs are entered on both the asset and liability sides of the balance sheet when issued, but this accounting convention can be changed by amending the Articles of Agreement. The issue is political. For proponents of funding global public goods to counter climate change, the question remains, "Is the apprehended danger severe enough, and is the GSF attractive enough, to generate agreement of countries holding 85 percent of quota?"

23 Several countries have agreed to lend a portion of their SDRs to the Poverty Reduction and Growth Facility, which provides concessional loans to low-income members.

24 See also the January 2011 IMF paper, "Enhancing International Monetary Stability — A Role for the SDR?" The focus of this paper was limited to exploring other ways of creating new reserve assets, denominated in SDRs. It explores how SDRs might help serve several objectives, among them, to reduce the extent and costs of international reserve accumulation; to augment the supply of safe global assets and facilitate diversification; and to reduce the impact of exchange rate volatility among major currencies. The paper concludes that: "In order to make a difference in any of these areas, the role played by the SDR would need to be enhanced considerably from its current insignificant level. Very significant practical, political, and legal hurdles would need to be overcome in the process" (IMF, 2011: 1). The paper concludes there might be a helpful role to play for the SDR.

25 As Birdsall and Leo (2011) point out, given that "climate change poses a direct and indirect threat to financial and geopolitical stability — particularly given its unpredictable risk profile over time and across countries," it is not a stretch to conclude that "minimizing the resulting uncertainty and risks using SDRs would contribute to global stability."

REACTIONS OF MAJOR PLAYERS

The GSF idea will be dead unless the United States, China and the European Union support it. If approval is elicited from these three major players, backing will also be required from the rest of the G20. Proponents of the idea would have to lobby extensively, highlighting the financial resources to flow to organizations in their own countries and the increased activity and employment to be generated. There may be a window of opportunity to do something about climate change in the United States, with US President Obama's recent re-election. The likelihood for a US endorsement will depend on the stipulation that major American institutions and businesses receive incremental resources. Potentially, bipartisan support could be arranged if it is clear that significant funds would flow to institutions in the states of key congressmen and senators. The visibility of the fund's competitive processes and auctions will be important.

China and India both worry about their vulnerability to climate change and may give serious attention to a potentially effective proposal. Global warming may "cause a 5 to 10 percent reduction in Chinese agricultural output by 2030; more droughts, floods, typhoons, and sandstorms; and a 40 percent increase in populations threatened by the plague" (Huang, Baipai and Mahbubani, 2012).[26] The Chinese will like the idea in that it will diminish the proportion of reserves held in US dollars.[27] As reported in *The Economist*, "According to the Peterson Institute for International Economics, India's agriculture will suffer more than any other country's…[B]y 2080, India's agricultural output is projected to fall by 30–40%" ("Melting Asia," 2008).

The European Union, to date the champion of moving on climate change, will be hard pressed to oppose an effective proposal to fund a public good. Even German economists and politicians, allergic to anything that smacks of debasing the currency, would applaud the fund of funds concept and the replenishment of the MDBs. They would be mollified if a worthy German, like Horst Köhler, was tasked to lead the process establishing the GSF.

CONCLUSION

If the rules do not allow for a solution to an existential problem, we have to change the rules. Can we imagine an articulate vision, effective champions, a host organization where the principals meet repeatedly and a series of calibrated steps to provide for dramatic change?

The idea of a GSF can be framed as a positive sum game, with a win-win-win allocation that would garner widespread global support and ultimately be accepted by all the major players, meeting the 85 percent approval threshold of member votes at the IMF. Once the expenditure plan is devised, creating many influential constituencies to support it, an acceptable process can be devised to govern the Fund's allocation decisions. An effective accountability regime can be devised. Major players in the G20 can be effective champions, as they account for the bulk of emissions and are the principal economic powers. As the G20 president in 2014, Australia is a good candidate. A series of incremental steps can be developed to prove the concept and win universal support.

26 The authors further state that: "The Himalayan glaciers, feeding the great rivers of China, India, and Southeast Asia, are melting. Chinese experts predict that by 2050 the icy area on their side of the Himalayas will shrink by more than a quarter. Indian glaciologist Syed Iqbal Hasnain estimates that in 20 to 30 years the Himalayan glaciers will have receded completely, leaving many rivers dependent on seasonal rainfall. The Intergovernmental Panel on Climate Change suggests that the Indus, Ganges, and Brahmaputra may come to depend on seasonal rainfall by 2035" (Huang, Bajpai and Mahbubani, 2012).

27 See Global Finance's exchange reserves data, available at: www.gfmag.com/tools/global-database/economic-data/11858-foreign-exchange-reserves.html#ixzz24IcYNdAK.

ANNEX 1

THE GEF

As the financial mechanism of the UNFCCC, the GEF allocates and disburses about US$250 million dollars per year in projects in energy efficiency, renewable energies, and sustainable transportation. It provides grants for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer and persistent organic pollutants. Since 1991, the GEF has provided US$10.5 billion in grants and leveraged US$51 billion in co-financing for over 2,700 projects in over 165 countries.[28]

The GEF manages two special funds, the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF), and has a small grants program (SGP). The LDCF addresses the special needs of the 48 least developed countries (LDCs). This includes preparing and implementing National Adaptation Programmes of Action to identify urgent and immediate needs of LDCs to adapt to climate change. The SCCF was established to support adaptation and technology transfer. The SCCF supports both long-term and short-term adaptation activities in water resources management, land management, agriculture, health, infrastructure development, fragile ecosystems (including mountainous ecosystems) and integrated coastal zone management. There are two active funding windows under SCCF: one for adaptation and another for technology transfer. So far, the GEF has mobilized voluntary contributions of about US$537 million for the LDCF and US$242 million for the SCCF. Through its SGP, the GEF has also made more than 14,000 small grants directly to civil society and community-based organizations, totalling US$634 million.

THE GCF

The GCF is an operating entity of the financial mechanism of the UNFCCC with an independent secretariat.[29] The purpose of the Fund is to "promote the paradigm shift towards low-emission and climate-resilient development pathways by providing support to developing countries to limit or reduce their greenhouse gas emissions and to adapt to the impacts of climate change, taking into account the needs of those developing countries particularly vulnerable to the adverse effects of climate change" (GCF, 2012). As of August 2012, less than US$1million has been provided to the Fund.[30]

THE CLIMATE CATALYST FUND LP

The Climate Catalyst Fund LP is an instrument of the IFC. It is a private equity fund of funds focused on providing growth capital for companies delivering resource efficiency and low-emission products and services in emerging markets. (It was originally established with US$75 million seed money).

THE CLIMATE PUBLIC PRIVATE PARTNERSHIP (CP3)

According to the DFID project page, "CP3 aims to demonstrate that climate friendly investments in developing countries, including in renewable energy, water, energy efficiency and forestry are not only ethically right but also commercially viable. It aims to attract new forms of finance such as pension funds and sovereign wealth funds by creating two commercial private equity funds of funds which will invest in sub-funds and projects in developing countries, creating track records of investment performance that should, in turn, encourage further investments and accelerate the growth of investment in climate" (DFID, 2012).

THE CIFs

The Climate Fund Info website describes climate investment funds (CIFs). "CIFs, including the Clean Technology Fund (CTF) and the Strategic Climate Fund (SCF), were approved by the board of directors of the World Bank on July 1, 2008 and endorsed by the G8 nations in the G8 Hokkaido Toyako Summit Leaders Declaration of July 8, 2008. G8 members have, thus far, pledged approximately US$5.7 billion to the funds, which gives the CIFs a real possibility to become the most important international financial tools to combat climate change [they are trust funds for developing countries for low-carbon, climate resilient development]. The most significant financial pledges have so far been made by the United States (US$2 billion), Japan (US$1.2 billion), the United Kingdom (approximately US$1.1 billion), Germany (approximately US$710 million) and France (approximately US$260 million). The other pledges are in the order of US$100 million or less" (Climate Fund Info, 2012).

"The CTF is a climate fund that will aim to promote low-carbon economies by helping to finance deployment in developing countries of commercially available cleaner energy technologies through investments in support of credible national mitigation plans that include low-carbon objectives" (Climate Fund Info, 2012). The fund leverages US$7.7 billion from other sources, such as domestic public and private finance, carbon finance and private finance. "The SCF will help more vulnerable countries develop climate-resilient economies and take actions to prevent deforestation" (Climate Fund Info, 2012).

28 For details, see: www.thegef.org/gef/whatisgef.

29 See: http://gcfund.net/secretariat/interim-secretariat.html.

30 See: http://gcfund.net/fileadmin/00_customer/documents/pdf/B.01-12.Inf.3_Financial_statement_FINAL.pdf.

"Developed and developing country governments gave an important signal for action on adaptation on January 30, 2009 by deciding which countries will be offered funding under a pilot program within the CIFs. Bangladesh, Bolivia, Cambodia, Mozambique, Nepal, Niger, Tajikistan and Zambia have been invited to take part in the Pilot Program for Climate Resilience, which will provide about US$500 million for scaled-up action and transformational change in integrating climate resilience in national planning. It should be noted that these funds operate mainly with loans, not grants…It is unclear how the developing countries are expected to pay the loans back some day" (Climate Fund Info, 2012).

THE ADAPTATION FUND

The Climate Fund Info page also provides an overview on the Adaptation Fund. "The Adaptation Fund has been established by the parties to the UNFCCC Kyoto Protocol to finance concrete adaptation projects and programmes in developing countries. In mid-August, it reported a balance of available funds as US$116 million" (World Bank, 2012c).

OTHER FUNDS

A proposed Green Venture Fund to Finance Clean Technology in Developing Countries includes a technical assistance component to develop deal flow. The CIF overall leverage is 1:7.7 of which private finance is 1:2.7. The Pilot Program for Climate Resilience (adaptation) leverage ratio is 1:2.7.

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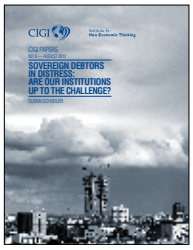

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