INNOVATIVE CARBON-BASED FUNDING FOR ADAPTATION

I. Introduction

The carbon market has expanded considerably in recent years. Most transactions in this market are carried out though the trading of unused emission allowances between Annex I parties to the Kyoto protocol (developed countries). In addition, Annex I countries can either purchase credits from emission reduction projects implemented in developing countries (non-Annex I parties) under the Clean Development Mechanism (CDM), or through investing in an emission reduction project in another Annex I country under the mechanism known as Joint Implementation (JI). These 'flexibility mechanisms' help Annex I parties comply with their mitigation commitments under the Kyoto Protocol. While the carbon market has proved to be an innovative financing mechanism for climate change mitigation, it has the potential to provide a similarly innovative financing tool for adaptation.

The expected future costs of adaptation for developing countries are high, estimated in the tens of billions of dollars.[i] Adaptation funds that have been raised or earmarked to date will cover a mere 1% of total projected costs.[ii] Against this background, there have been a number of bi- and multi-lateral proposals to generate additional revenue for adaptation. These proposals aim to generate revenue through action in the carbon market, or more broadly through carbon or international travel-related taxes or levies, rather than from conventional overseas development assistance (ODA) funding sources derived from public expenditure (typically funded from domestic revenue streams, and part of national budgets). At present, most international adaptation funding instruments, with the exception of the Kyoto Protocol's Adaptation Fund, which is financed through a 2% levy on CDM proceeds, rely on the latter – conventional ODA. These proposals are distinct and noteworthy because they involve a degree of automaticity and autonomy. They relate to wider discussions on innovative financing schemes, within the context of the forthcoming Doha Conference on Financing for Development (29 November to 2 December, 2008), as well as to discussions in the context of the United Nations Framework Convention on Climate Change (UNFCCC), on both the implementation of the Bali Action Plan, and on any post-Kyoto framework beyond 2012.

This paper details and distils the various current proposals for adaptation financing. It does not attempt to provide a critique, or assess the robustness of revenue estimates, both of which would need to be the subject of a separate exercise.

The rest of the paper is organised as follows. Section II offers a categorisation of the recent adaptation finance proposals, while section III describes each proposal, using a table to illustrate the key elements of each scheme. The paper concludes with a brief discussion of relevant issues pertaining to the implementation of adaptation funding.

Key Acronyms	
AAUs – Assigned Amount Units	IMERS – International Maritime Emissions Reduction Scheme
CDM – Clean Development Mechanism	JI – Joint Implementation
ETS – Emissions Trading Scheme	MAF – Multilateral Adaptation Fund
GCCA – Global Climate Change Alliance	NCCF – National Climate Change Fund
GCFM – Global Climate Financing Mechanism (EC)	SCCF – Special Climate Change Fund
IATAL – International Air Travel Adaptation Levy	UNFCCC – United Nations Framework Convention on Climate Change
ICI – International Climate Change Initiative (Germany)	WCCF – World Climate Change Fund (Mexico)
IET – International Emissions Trading	

II. Categorising the proposals

The adaptation financing schemes can be grouped into four categories:

1. **Auctions of emissions allowances:** Each of the Annex I countries receive a number of greenhouse gas units to release and/or trade (*Assigned Amount Units,* AAUs) in accordance with the Kyoto Protocol during the 2008-2012 commitment period. The underlying funding principle of this scheme is to auction a certain share of these AAUs to generate revenue, rather than giving them out for free to Annex I countries' domestic firms that have to comply with emission reductions.

   An important distinction needs to be made between auctioning at an international level (as has been recently proposed by Norway in the UNFCCC discussions) and at the national level. Current proposals advocating the auction of emission allowances for adaptation include:

   (A) International level auctioning:
   - The Norwegian proposal to auction AAUs.

   (B) National level auctioning:
   - The EU proposal to use revenues from the EU Emissions Trading Scheme (ETS) Auction for climate related measures, including adaptation (Germany has already implemented such a scheme through its International Climate Initiative); and
   - The US[iii] International Climate Change Adaptation and National Security Fund (under the proposed Lieberman-Warner Bill).

2. **Carbon market-based levies:** adaptation funding can be generated by applying a levy to the Kyoto Protocol's tradable units generated from the CDM, JI, or emissions trading (a form of 'climate currency' with each tradable unit representing one metric tonne of CO_2 equivalent).[iv] The 2% CDM levy mechanism used to raise funds for the Kyoto Protocol's Adaptation Fund is an example of a carbon market-based levy. There is interest in extending or increasing the levy to other aspects of the carbon market. Proposals include:
   - Extending the levy to Joint Implementation (JI) and/or International Emissions Trading (IET);[v] and
   - Pakistan: raising CDM levy from 2 to 3-5%.

3. **Charges, levies or taxes on emissions, or on specific activities (such as air travel):** funds are raised by charging individuals and companies, based on their responsibility for climate change and/or their capability to pay. The charges or levies could be applied to air travel, fossil fuel production, or electricity use. Global charge/levy schemes include:

   (A) International:
   - The International Air Travel Adaptation Levy on fuels (IATAL);
   - The International Maritime Emissions Reduction Scheme (IMERS);
   - Tuvalu's Burden Sharing Mechanism (Adaptation Blueprint); and
   - Mexico's proposed World Climate Change Fund (WCCF).

   (B) National:
   - The Swiss Global Carbon Adaptation Tax (while global in scope, this proposal is considered to be national given the tax would be collected domestically, rather than internationally).

4. **Other innovative ways of financing adaptation, such as the issuing of capital bonds:** one proposal sits in this category:
   - The European Commission's Global Climate Financing Mechanism.

III. Descriptions of proposals

AUCTIONS OF EMISSIONS ALLOWANCES

(A) International level auctioning

- **The Norwegian proposal to auction AAUs:** Norway has designed a proposal to finance adaptation through auctioning a portion of emission permits. The auction would occur at the international level before the AAUs are allocated to national registries, and would be auctioned by an appropriate international institution. The resulting revenue would then be placed in a fund to be used for adaptation. This proposal recommends the levy be placed at the point of issuance of allowances rather than on the market *transaction* of allowances.

(B) National level auctioning

- **The EU proposal to use share of auction revenues from EU ETS:** In October 2008, the European Parliament Environment Committee adopted a revised proposal on the ETS Review Directive recommending that in Phase III (2013-2020): (a) auctioning becomes the principal method of allocation, and (b) 25% of overall auction revenue is spent on adaptation in developing countries. Certain member states have already agreed to auction up to 10% of their allowances during Phase II (2008-2012), including Germany, as outlined below. However, there is, at present, no formal requirement to spend auction revenues on climate change mitigation or adaptation for developing countries. Ring-fencing funds for specific spending purposes remains a point of contention for the progression of this scheme. It is likely that 100% auctioning will apply to the electricity sector from 2013, and 15% auctioning has already been secured for aviation from 2012 onwards. Auctioning in other sectors has yet to be determined.

- **Germany's (existing) International Climate Initiative (ICI):** Since early 2008, the German Federal Environment Ministry (BMU) has raised funds by auctioning 9% of its nationally allocated carbon allowances for the second phase (2008-2012) of the ETS. Rather than giving away those permits to industry, the German government is auctioning the permits to generate revenue. Of the €800 million expected annual revenue from the auctions, €400 million will go to climate initiatives, €120 million of which will be allocated internationally to developing countries, and half of this amount will be allocated to adaptation and forest protection. Germany's ICI is in addition to a much larger sum of money already spent bilaterally on adaptation.

- **The US International Climate Change Adaptation and National Security Fund:** This fund was proposed under the Lieberman-Warner Climate Security Act of 2008. The bill would establish a country-wide cap-and-trade system, with 26.5% of emissions allowances auctioned in 2012, steadily ramping up to 69.5% by 2031. A portion of auction revenue (from 1% in 2012, increasing gradually to 7% by 2050) would be directed toward a newly created International Climate Change Adaptation and National Security Fund. The bill highlights the needs of 'most vulnerable developing countries,' although spending would be bound by US security-based priorities. The bill failed to pass the Senate in June 2008, and the proposed fund is not, therefore, going forward under the current arrangement. However, it may serve as a blueprint for future US proposals.

CARBON MARKET-BASED LEVIES

- **Extending the levy to Joint Implementation (JI) and/or International Emissions Trading (IET):** As the current levy on the CDM is used to raise funds for adaptation, a levy on JI or IET could also be applied as a percentage of the relevant Kyoto units. Most assessments of these options assume a 2% levy would be applied to mirror the CDM levy. Some countries, such as Costa Rica and South Africa, are in favour of including a levy on both JI and emissions trading. Other countries, like New Zealand, have stated reservations about applying a levy to JI and IET as it could lead to market distortions.

- **Pakistan's proposal to increase CDM levy:** In March 2008 Pakistan submitted a proposal to the UNFCCC to increase the current levy on the issuance of CDM credits from 2 to 3-5%. The proceeds would go to the Kyoto Adaptation Fund to finance developing country adaptation.

CHARGES, LEVIES OR TAXES ON EMISSIONS OR SPECIFIC ACTIVITIES

(A) International

- **International Air Travel Adaptation Levy (IATAL):** This proposal recommends that a levy be placed on international air travel, in the form of either a percentage levy (2% of ticket price) or a set fee (e.g., €5 per ticket). The set fee encourages 'personal responsibility', with all international air travellers paying regardless of their origin. By contrast, a percentage levy based on 'personal capability' would recover, for example, greater revenue from high-price business flights. The potential impacts of IATAL would be two-fold: (a) mitigation of emissions, particularly on demand-elastic short-haul flights, with people not flying as often, and (b) revenue collection to fund adaptation, particularly on demand-inelastic long-haul flights, with people who can afford to fly such routes paying more for the privilege. The main objective, however, is to raise revenue to compensate for the impacts of air travel emissions. IATAL could be designed to raise revenue with minimum impact on demand for air travel, enhancing its political acceptability. This has been demonstrated by the success of an airline tax that is structured in a similar way to finance UNITAID, the international drug purchase facility.

- **International Maritime Emissions Reduction Scheme (IMERS):** This proposal is based on a 'cap-and-charge' system, whereby an emission reduction goal (cap) would be established for all destinations with emission reduction commitments (currently Annex I countries only), and a charge would then be placed on the amount of emissions over the cap, based on market carbon price. The scheme would be operated by a new supranational organisation to collect the revenue, 42% of which would then be dispersed to existing funds that focus on adaptation to developing countries. In addition to a focus on adaptation, the scheme would also use the revenue to fund mitigation and investments in maritime technology transfer. Given that roughly 60% of maritime emissions would be subject to the regime (Annex I's share of worldwide imports), a charge of \$10 per tonne of CO_2 would raise about \$6 billion in 2012, of which \$2.5 billion would go towards adaptation.[vi] IMERS differentiates the emission charges based on responsibilities and respective capabilities, as the charges are effectively paid by end users in Annex I countries, and the charge would vary by destination and type of ship.

- **Tuvalu's Burden Sharing Mechanism (Adaptation Blueprint):** In response to the clear funding gaps that exist in the UNFCCC's established Least Developed Country (LDC) Fund and Special Climate Change Fund (SCCF), Tuvalu proposes a new *Burden Sharing Mechanism* (BSM) where funding would be raised through levies on emissions trading and international

aviation and maritime transport and deposited in the aforementioned funds. Specifically, Tuvalu's BSM proposes:

1. A 0.01% levy on international airfares and maritime transport freight charges operated by Annex II countries (a subset of Annex I countries that are mandated to provide financial resources to developing countries);
2. A 0.001% levy on international airfares and maritime transport freight charges operated by non-Annex I countries;
3. Exemptions to (a) and (b) would apply to all flights and maritime freight to and from LDCs and Small Island Development States (SIDS)

The Blueprint also recommends the establishment of (1) a *special coordination committee under the UN General Assembly* to coordinate a long-term plan for adaptation; and (2) an *International Climate Insurance Pool* to support communities most vulnerable to meeting the costs of post climate-related calamities.

- **Mexico's World Climate Change Fund (WCCF):** Put forward within the framework of the Bali Action Plan, Mexico suggests the creation of a new fund ($10 billion per annum). Although it would focus primarily on mitigation, it recognises adaptation as a key objective and recommends a 2% adaptation levy to be placed on contributions to the Fund (to flow to the Kyoto Adaptation Fund). At this level, the estimated total adaptation revenue in the initial phase would be around $200 million per annum.

(B) National

- **The Swiss Global Carbon Adaptation Tax Proposal:** Switzerland has put forward a proposal to finance climate change policy programmes and measures. This proposal would establish a low level financing tax on worldwide emissions from the production and use of fossil fuels. The revenue for this proposal would be raised according to the 'polluter pays' principle through a *uniform* global levy on carbon of $ 2 per tonne of CO_2 on all fossil fuel emissions. This corresponds to a burden of about 0.5 US cents per litre of liquid fuel. A free emission level of 1.5 tons of CO_2 per capita would be applied to all countries, creating an exemption for those with extremely low emissions levels (primarily the least developed countries, LDCs). The revenue generated from this tax, which is expected to be around $48.5 billion per annum, would flow into: (1) National Climate Change Funds (NCCF) established in all countries that contribute payment (all but LDCs), to be used according to domestic priorities; and (2) a Multilateral Adaptation Fund (MAF) where funds would be spent exclusively on adaptation in low-income and middle-income countries (LIC/MICs).[vii] The MAF funds are further divided into two 'pillars'; an insurance pillar and a prevention pillar. The share of MAF revenues generated depends on the economic situation of the countries, with high-income countries (HICs) paying the most.

OTHER

- **The EC's Global Climate Financing Mechanism (GCFM):** This proposal applies the idea of an 'International Financing Facility (IFF)' – a tool that has, to date, been used to address urgent large-scale vaccination funding needs – to fund climate change. To raise funds a bond would be issued on the international markets by an appropriate financial institution, enabling 'frontloading' of adaptation funding for immediate use. Future repayment over a long period (e.g., 20 years) would be financed through revenue of EU Member States derived from the future auctioning of emission rights. The idea has been recommended in the context of the EC's initiated Global Climate Change Alliance (GCCA). The possibility of putting this idea into action is being explored in collaboration with the World Bank (WB) and the European Investment Bank. A fund of €1 billion ($1.3) billion per year for five years would justify the

overhead costs. The funds could be channelled for disbursement to existing initiatives such as the Adaptation Fund, the WB's Climate Investment Funds, or the GCCA.

Table of proposal attributes[viii]

Proposal	Proposed within UNFCCC vs. bilateral	Sources of funds	Adaptation funds for developing countries per year in billions (US $)	Source of annual funding estimate	Revenue flows to newly created vs. existing funds
AUCTIONS OF EMISSIONS ALLOWANCES					
Norway's auctioning of allowances	UNFCCC	Annex I allowances withheld, auctioned by international body	$14 in 2012	Müller (assumes 2% levy)	Unclear where the money would be transferred/held
EU ETS auction of allowances	EU bilateral	25% of revenue from allowance auctions	$13.7-27.5 by 2020	Proposal originator (Eur Parliament) using 40-80 bn/yr revenue	Existing: KP Adaptation Fund, or via national allocation
Germany's Int'l Climate Initiative	Bilateral (existing initiative)	9% of emissions permits auctioned domestically	$0.08 in 2008 for adaptation/forestry	Proposal originator (German Environment Ministry)	Mainly bilateral projects; some to existing funds
US Adaptation & National Security Fund	Bilateral	Portion of revenue from allowance auctions	Estimates range between $1-9	Proposal originator (Lieberman), Müller, WRI	New (USAID) fund; <60% eligible for existing funds
CARBON MARKET-BASED LEVIES					
Extending the levy to JI and/or IET	UNFCCC	Levy on JI and/or IET	2008–2012: $5.5–8.5 2013–2020: $3.5–7.0 (based on unit issuance, AAUs only)	UNFCCC	Existing: KP Adaptation Fund
Pakistan's CDM levy	UNFCCC	3-5% levy on CDM	$0.2–0.5 at levy of 5%	WRI	Existing: KP Adaptation Fund.
CHARGES, LEVIES OR TAXES ON EMISSIONS OR SPECIFIC ACTIVITIES					
IATAL	UNFCCC	$7/€5 per ticket fee or 2% levy on airline travel	Fee: $13.7 Levy: $10.4–26	Proposal originator (Müller), at ticket price $275–685	Existing.
IMERS	UNFCCC	Emission charge, 'cap and charge' for Annex-I	$2.5 in 2012 for adaptation, increasing with time ($1 for LDCs & SIDS)	Proposal originator (Stochniol)	Existing
Tuvalu's Burden Sharing Mechanism	UNFCCC	(1) .01% levy on int'l airfares, maritime transport freight charges operated by Annex II (2) .001% levy on int'l airfares, maritime transport freight charges operated by non-Annex I (LDCs / SIDS exempt)	$0.04 from Annex II; $0.003 from non-Annex I	Müller (based on total UNCTAD 2007 freight costs for 2005)	Existing: SCCF and LDCF
Mexico's World Climate Change Fund	UNFCCC	Levy on disbursement of mitigation funds	$0.2 in 2030 (based on a 2% levy of $10 Bn per annum fund)	Proposal originator (Mexico Secretary of the Environment)	Existing: KP Adaptation Fund
Swiss Global Carbon Adaptation Tax	UNFCCC	Tax ($2/t CO_2) on emissions from fuels ≤1.5 t CO_2/capita exempt	NCCF: $20.7 MAF: $18.4	Proposal originator (Swiss Confederation) based on 2010 data	NCCF: nat'l governance MAF: existing; KP Adaptation Fund
OTHER					
EC GCFM	N/A	High rated bonds, as stopgap until other finance is operable	$1.3 for next five years	Proposal originator (European Commission)	Existing

IV. Issues for consideration

UNFCCC CRITERIA

In order to ensure the proposals are internationally acceptable, they must satisfy the UNFCCC's criteria of being adequate, sustainable, predictable, additional, and based on the 'polluter-pays principle'. These criteria were further emphasised in the Bali Action Plan. As such, an assessment of the proposals against these criteria is essential. The proposals should also be examined bearing in mind the impact on the carbon market, governance and absorptive capacity, mentioned below.

CARBON MARKET IMPACTS

Each proposal that focuses on generating funds from the carbon market should be evaluated against its expected impact on the market, with an eye towards avoiding distortion and inefficiency. For example, a levy placed on international trading may act as a deterrent to market activities and have the potential to reduce overall liquidity in the carbon market. Some proposals may have an impact on overall demand and on traded quantities, depending on who bears the cost of the levy.

GOVERNANCE

While this report focuses on the way in which adaptation finance can be *generated*, it has not highlighted how an international funding mechanism might be *governed*. This is an important issue to flag as the ownership, oversight and decision-making structure have strong equity implications. Given that many view the collection of revenues for adaptation as compensation or 'debt collection', rather than aid or charity, the importance of recipient oversight of the funds is a sensitive issue.

ABSORPTIVE CAPACITY

Within the context of 'scaling up' financial flows for adaptation, a critical issue is one of the recipient country's 'absorptive capacity' – the ability to use these new funds effectively. Even when adequate funds are raised and properly allocated to the countries most in need, institutional, technical, or managerial capacity constraints can prevent the successful implementation of these financial flows. This should be taken into account in the design and implementation of any new adaptation framework of the post-2012 regime.

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[i] UNDP World Development Report (2008) approximates $86 billion per year by 2015. Other estimates include $50 billion per year (Oxfam International, 2007) and the UNFCCC Fourth Assessment Report estimate of $28-67 billion per year in 2030.

[ii] Multilateral funding initiatives on adaptation in developing countries are operated through two mechanisms. First, the Kyoto Protocol's Adaptation Fund (AF) expected to reach $80-300m by 2012 (Globe International, 2008). Second, three adaptation funds are housed within the Global Environmental Facility (GEF): the Special Climate Change Fund (SCCF), Strategic Priority on Adaptation (SPA) Fund and the Least Developed Country (LDC) Fund. As of March 2008, resources pledged to these totalled $298m.

[iii] The USA has not ratified the Kyoto Protocol, but a nationwide Emission Trading Scheme is under consideration independent of that.

[iv] A carbon market-based levy can be applied to the Kyoto Protocol's tradable units either at the point of issuance or transaction, but this distinction is not necessary at this level of analysis.

[v] IET forms one part of the three emission trading schemes allowed under the Kyoto Protocol – the other two mechanisms are the CDM and JI -- through which Annex I countries can exchange carbon credits.

[vi] This charge would increase shipping costs to Annex I Parties by roughly 3%, equivalent to an extra $1 for every $1,000 of goods imported. There is no impact on imports to non-Annex I Parties.

[vii] The Swiss MAF is proposed to become part of the financial architecture developed under the Bali Action Plan, and would be able to operate complementarily to other similar facilities. It would be governed by the already existing structure under the KP Adaptation Fund, at least in the start-up phase.

[viii] It is important to note that each proposal uses its own unique set of assumptions (e.g., carbon price, carbon cap, etc.) when estimating revenue figures. While streamlining the assumptions can create a truer comparison, the current figures provide a general idea of the sheer scale of funds likely to be generated from each proposal.