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Carbon Finance in Africa

Paper I has been prepared jointly by the United Nations Economic Commission for Africa, the NEPAD Secretariat, and the APF Support Unit, and is drawn from a detailed study undertaken by AfricaPractice, co-managed by the above institutions. Paper II has been prepared by the Overseas Development Institute (ODI). Both papers are intended as background for discussion during Session 3 on "Information-Sharing Issues (Follow-up to the 10th APF – Tokyo, Japan)" at the 11th Meeting of the Africa Partnership Forum in Addis, Ababa on 17-18 November 2008.

Contents

EXECUTIVE SUMMARY

The 10th APF meeting in Tokyo mandated further work on carbon finance issues, following the discussion on climate change at the meeting. This overview covers 2 short further notes.

THE CLEAN DEVELOPMENT MECHANISM (CDM)

2. The CDM has been successful in generating emission reduction projects in many countries. At end 2007, proceeds from the sale of emissions credits from CDM projects amounted to about US$7.4 billion. However, Africa's share of CDM's transactions is still relatively low at around 5%. The attached note is a synthesis of points drawn from a larger study, undertaken by consultants and co-managed by UNECA, the NEPAD Secretariat and the APF Support Unit (available at: http://www.africapartnershipforum.org/dataoecd/40/15/41646964.pdf). It argues that there is potential for significantly increasing the contribution which the CDM can make to Africa's development. Its key recommendations fall into 4 categories:

(i) Actions that can be taken by African governments with Nairobi Framework partners to improve capacity to take advantage of the CDM as it is currently designed;

(ii) Actions than can be taken by the parties to the Kyoto protocol and the CDM Executive Board, to improve the procedures and modalities governing the CDM within the current Kyoto framework;

(iii) Actions which can be taken to broaden its approach and coverage in any new post-2012 framework, in a way which would increase the potential benefits for Africa;

(iv) Actions that can be taken by multilateral organisations and development partners, in order to make core finance for CDM projects in Africa more readily available.

BEYOND THE CDM: NEW PROPOSALS FOR GENERATING ADDITIONAL CARBON-BASED REVENUE

3. The CDM is a relatively small part (about 12-13%) of a much larger carbon finance market, the greater part of which consists of the trading of emission allowances between Annex 1 parties (developed countries). Africa is not part of this market. The second paper takes a broader look at various current proposals for generating additional revenue either from the current carbon finance market, or through broader charges, levies or taxes. It is intended to be a synthesis of the main elements in these proposals, which it groups into 4 categories – it does not attempt to provide a critique of the proposals, or to make any independent assessment of the revenue which they might generate:

(i) Auctions of emissions allowances, either at international or regional/national level;

(ii) Carbon market-based levies (such as extending the current 2% CDM levy to emissions trading more broadly);

(iii) Charges, levies or taxes on emissions, or on specific activities (such as air travel);

(iv) Other proposals, such as the issuing of bonds.

4. A common feature of these proposals is that they would generate revenue through actions in the carbon market, or more broadly through carbon or international travel-related taxes or levies, as distinct from conventional ODA funding sources derived from public expenditure (typically funded from domestic revenue streams, and part of national budgets). These proposals also involve a degree of automaticity.

5. A number of these proposals are currently receiving broad international attention, in the context of the Doha Conference on Financing for Development – which will consider innovative financing mechanisms, and the UNFCCC process leading to the meeting at Poznan later in 2008 and Copenhagen in 2009.

CARBON FINANCE IN AFRICA: THE CLEAN DEVELOPMENT MECHANISM

1. The Clean Development Mechanism[1] (CDM) was established under the Kyoto Protocol to assist non-Annex I Parties[2] to the UN Framework Convention on Climate Change (UNFCCC) in promoting sustainable development and to facilitate Annex I Parties in complying with their emission commitments. As of end-2007, proceeds from the sale of emission credits from CDM projects amounted to US$7.4 billion, a 50% increase in value over 2006, and triple the value in 2005[3]. The overall carbon market has also risen sharply over this period, reaching US$60 billion in 2007 or 6 times its value in 2005 and is set to continue its exponential growth over the coming years.

2. The CDM thus provides developing countries with a significant source of carbon finance to help promote sustainable development. But although the CDM has proven successful in generating emission reduction projects in many developing countries, Africa accounted for only 5% of CDM transactions in 2007. It is therefore imperative that African governments both capitalise on existing carbon market opportunities, and develop a clear African position for post-2012 negotiations, in order to increase the flows of carbon finance needed for Africa to meet the challenges of climate adaptation and sustainable development.

Challenges and recommendations

3. Based on the above assessment, the 10th APF meeting requested the preparation of a report on barriers to CDM projects and how to make the carbon market more relevant for Africa. There are many reasons why Africa's share of CDM transactions is still relatively low. These include factors not related to CDM itself, such as the small size (and therefore small volume) in relative global terms of emission reductions that could be generated by projects in Africa, as well as perceptions of investment risk, though recent World Bank analysis suggests that there is large potential for clean energy projects in Africa. There are also factors related specifically to the CDM.

(i) At the national level, there are barriers such as institutional capability, lack of awareness about CDM potential or inadequate project finance;

(ii) At the international level, there are barriers related to CDM procedures and modalities which can be addressed within the current Kyoto framework (before 2012);

(iii) There are also barriers related to constraints on the types of projects currently eligible for the CDM, which would need to be addressed within the framework of negotiations on a post-2012 framework, and which would significantly increase Africa's potential share of CDM transactions;

(iv) Finally, lack of financing is an important barrier to project development.

4. The purpose of this paper is to draw together some of the main findings from a longer study on the current status and future potential of CDM activities in Africa, with the objective of developing recommendations that African policymakers, negotiators and experts can use, in concert with development partners, to press for changes including a revised CDM framework that will help to advance CDM project development, and carbon financing in general, in support of Africa's sustainable development. It is supported by a longer analysis which is available as a web link to this paper at: http://www.africapartnershipforum.org/dataoecd/40/15/41646964.pdf.

I. Institutional and Capacity Barriers

5. **The CDM-specific framework within host countries is an important factor** that can help or hinder development of CDM projects. The important considerations can be regrouped under three categories: i) CDM related institutions and capacity; ii) awareness of climate change and the CDM among relevant stakeholders including, in particular, financial intermediaries and the private sector; and iii) clear and consistent policy toward CDM projects and messages to project developers and investors. Some countries devote significant resources to promoting CDM activities in their countries and have created CDM promotion offices that work separately from

the office of the CDM Designated National Authority (DNA). Zambia and Swaziland have established a governmental CDM office/committee to ensure that the CDM is incorporated and integrated within government policies and priorities. Others, such as Egypt and South Africa have organised capacity training and awareness programmes on the CDM within government. Timely and transparent completion of CDM transactions also plays an important role in expediting the approval process.

6. **The Nairobi Framework[4] (NF) has identified five "pillars" in its support to African countries** to enhance participation in the CDM. They are: (1) build and enhance the capacity of DNAs; (2) build capacity in developing CDM project activities; (3) promote investment opportunities for projects; (4) improve information sharing, outreach, education and training; and (5) improve inter-agency coordination. . To ensure effective implementation of the NF, it will be important to address other needs of African countries and involve pan-African and regional African institutions in this dialogue, e.g. AfDB, UNECA and the AU/NEPAD.

MAIN PRIORITIES: African Governments, with Nairobi Framework Partners

- Refine the Nairobi Framework to provide more opportunities for South-South transfer of capacity.
- Provide additional capacity-building for appropriate government officials outside of the DNA itself, e.g. people working in energy, environment, finance and agriculture.
- Establish national regulatory frameworks conducive to the effective implementation of the CDM activities

II. Barriers Related to CDM Procedures and Modalities: pre-2012 changes

7. The international governance structure agreed for the CDM was intentionally set up to involve several steps, actors and checks and includes detailed guidelines on specific methodologies and additionality. While the process is required to ensure the integrity of this market-based mechanism, the working of the CDM approval process has been criticised for being too heavy involving high transaction costs. Two initiatives -- small-scale CDM and programmatic CDM -- have been launched and are designed to allow for more flexible procedures and modalities and reduced transaction costs to CDM project development.

8. ***Small-scale CDM*** allows for a simplified application of the general CDM procedures in order to reduce the development costs for projects with emission reductions below the threshold of 60,000 tons of CO_2 equivalent. A set of "simplified procedures" was developed allowing: i) the use of simplified project design documents; ii) the use of streamlined methodologies; iii) the bundling of similar, small-scale projects in a single set of documents; and iv) reduced registration costs. But their impact has, so far, been minimal. Recent information shows that sub-Saharan Africa only accounted for less than 1% of the small-scale projects listed. Part of the lack of progress is due to the preference of project developers (who come mainly from Annex I countries), brokers and traders to projects with larger potential carbon revenue at the expense of small-scale projects.

9. ***Programmatic CDM*** (pCDM) is a relatively new concept which allows project developers to create programmes involving many project activities of the same kind – e.g. using solar panels to generate hot water for buildings. New project activity fitting the programme can simply be added on, using a simplified documentation and approval process. Programmatic CDM is still in its infancy and so far only one programme of activities has been submitted for validation from an African country. Barriers to the increased use of pCDM include lack of knowledge and experience and concerns around the risk of incorrectly registering individual project activities in a programme, which could dramatically reduce the potential for involvement of African governments and businesses in pCDM.

10. While engaging in the negotiations on a post-Kyoto treaty African countries should press for a number of short-term goals that can be adopted and implemented before 2012, and prepare the way for a more comprehensive post-Kyoto deal.

MAIN PRIORITIES: the Conference of Parties (CoP) to review existing guidelines to:

- Encourage the development of additional simplified methodologies for sectors with high potential in Africa.

- Develop a simpler procedure for allocating risk in programmatic CDM in order to facilitate the use of this concept by smaller African developers.
- Develop an interim financing facility for small-scale projects to provide seed capital and support scoping studies.

And in relation to agriculture, forestry and other land uses (see also section 3 below):

- Expand the scope of forestry under the CDM to include sustainable forest management, sustainable agriculture (including soil carbon enhancement) and wetland management.
- Including avoided deforestation as a CDM activity or under a similar mechanism.
- Abolish the system of temporary credits, a special sort of carbon credits that are temporary and expire after a set number of years to account for uncertainties around the permanence of the sequestered carbon.

III. Barriers related to CDM approach and scope: post-2012 changes

11. ***Sectoral CDM*** is a new approach that is being actively discussed and would allow countries to shift from a project-based to a sector-based approach by establishing sectoral baselines and granting carbon credits for emission reductions relative to these sectoral baselines. In addition to providing an easier path to quantifying emissions reductions, sectoral CDM would also encourage policy interventions aimed at emissions-intensive sectors such as cement, chemicals or transport and allow governments to reward high-achieving companies. By reducing the transaction costs for individual companies, this new approach would provide new financing opportunities for sectors that are presently under-represented under the CDM in Africa such as transport.

12. **A major inhibiting factor to the growth of the CDM in Africa is the limitation on types of projects currently eligible for CDM**. Most African economies depend on agriculture as the primary source of wealth, and therefore, it is the land use sector that holds the greatest potential for carbon finance in these countries. Under the current rules, however, project activities implemented in agricultural, forestry and other land-uses (AFOLU) are limited to narrowly defined afforestation/reforestation activities. The lack of AFOLU projects under the Kyoto Protocol can be attributed to the following facts:

(i) Forest-related activities eligible for crediting under the CDM are limited to afforestation/reforestation (A/R);

(ii) Rules and methodologies for crediting these activities are complex and were late developing; and

(iii) Credits from these activities are not an eligible asset class for the most important market of buyers of carbon credits, the EU Emission Trading Scheme.

13. **On the international level there is an increasing recognition of the importance of the forestry and agricultural sectors for any successful climate policy**. Africa's role in global carbon markets will be greatly enhanced if the carbon storage and emission reduction of the AFOLU sector is fully recognized. The last Conference of Parties in Bali (COP-13) demonstrated that international policy makers have started to respond to the critical role forests play in mitigating climate change, including the importance of halting deforestation and degradation, the latter being of utmost importance for the countries of the Congo Basin. While there is increasing recognition of the importance of the forestry and agricultural sectors in general, including current discussions around "Reducing Emissions from Deforestation and Degradation" (REDD), to ensure that African interests are constructively considered in the negotiations of a post-Kyoto framework, Africa will need to develop and implement its own climate and carbon finance strategy. Such a strategy could be built on the recognition that Africa can contribute to mitigating climate change by promoting sustainable land-use practices. The international community should recognize this potential by rewarding the carbon sequestration of AFOLU activities and supporting to Africa's financing needs.

MAIN PRIORITIES: the Conference of the Parties (CoP) to

- Support the concept of sectoral CDM in post-2012 negotiations both to promote CDM activities and help Africa to achieve emissions reductions more cost-effectively.

- Integrate the reform of CDM approach as well as an emerging REDD agreement into a broader negotiation programme, rewarding all relevant emissions reductions and removals from the agriculture, forestry and land use sectors.

IV. Financial Barriers

14. **Lack of financing is a common barrier to project development.** In low-income countries, financing barrier is an even larger handicap to the development of small-scale CDM projects. Other factors that add to the challenge of securing financing for renewable energy projects include the long project lead time and the fact that they are perceived as carrying higher risks than more conventional projects. In addition, transaction costs that include negotiation of purchase agreements, preparation of documents for registration and payments for validation and registration, are incurred at an early stage in the life cycle of a CDM project, while the carbon revenues are only available annually following verification.

15. **There are a number of initiatives to make finance for CDM projects in Africa more readily available**. Buyers of CDM credits, especially large institutional or national carbon funds, have helped CDM developers overcome this barrier by offering different types of advance payments. Regional institutions are also beginning to play an important role. For example, ECOWAS has established an African investment fund that can purchase carbon credits upfront. The Central African States Development Bank has also developed instruments to facilitate access of CDM project developers to funding. The MDG Carbon Facility represents an innovative collaboration between UNDP and an international financial services provider, Fortis Bank, offering prospective emissions reduction projects a comprehensive "one-stop-shop" package of services with UNDP providing project development services and Fortis purchasing and marketing emission offsets.

16. **But the amount is insufficient and other financing mechanisms need to be considered**. There is a need to find ways of helping developers of CDM projects to find the finance they need. These include the use of official development assistance, insurance mechanisms and export credit guarantees. The Marrakech Accord of 2001 stipulates that support for climate change in general and for CDM activities must not result in a diversion of ODA. Investment guarantee agencies have recently started to offer services to mitigate CDM risk in developing countries. For example, the Multilateral Investment Guarantee Agency (MIGA) of the World Bank Group has provided coverage against the risk that a CDM project in El Salvador fails to deliver the agreed upon amounts of CERS. Guarantees by bilateral export credit agencies could provide another form of risk insurance. The ongoing review of the OECD Recommendation on Common Approaches on the Environment and Export Credits will hopefully result in a more favourable treatment of exports of renewable energy equipment by OECD countries.

MAIN PRIORITIES: Development Partners to

- Further develop guarantee products and guidelines.
- Seek private sector organisations to partner in guarantee products.

Endnotes

[1] Under the CDM, buyers from developed countries acquire Certified Emission Reductions (CERs) for each tonne of greenhouse gas that is prevented from entering the atmosphere through the CDM project. The CDM provides companies and governments which have legally binding GHG targets under the Kyoto Protocol the option to buy verified CERs.

[2] Non-Annex I Parties to the UNFCCC are mainly developing countries that, unlike Annex I Parties, are not subject to emission reduction commitments under in the Kyoto Protocol.

[3] China and India together account for two-thirds of expected credits from proposed CDM project activities to 2012. This is not surprising since these two countries are the world's most populous and the largest greenhouse gas emitters and thus have attracted larger levels of emission-reducing activity. However, recent studies have shown that there is significant emissions reduction potential in Africa, especially in the land use sector, despite its low contribution to global emission.

[4] A multi-donor initiative set up under the aegis of the UNFCCC to provide support to Africa in CDM activities.

I. Introduction

1. 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.

2. The expected future costs of adaptation for developing countries are high, estimated in the tens of billions of dollars.[v] Adaptation funds that have been raised or earmarked to date will cover a mere 1% of total projected costs.[vi] 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.

3. 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.

4. 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.

II. Categorising the proposals

5. The adaptation financing schemes can be grouped into four categories:

i. **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[vii] International Climate Change Adaptation and National Security Fund (under the proposed Lieberman-Warner Bill).

ii. **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).[viii] 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);[ix] and
- Pakistan: raising CDM levy from 2 to 3-5%.

iii. **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).

iv. **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 US$10 per tonne of CO_2 would raise about US$6 billion in 2012, of which US$2.5 billion would go towards adaptation.[x] 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 (US$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 US$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 US$ 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 US$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).[xi] 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 (US$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.

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.

Table of proposal attributes[xii]

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

Acronyms

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	

Key references **(others available upon request)**

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Endnotes

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

[vi] Multilateral funding initiatives on adaptation in developing countries are operated through two mechanisms. First, the Kyoto Protocol's Adaptation Fund (AF) expected to reach US$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 US$298m.

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

[viii] 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.

[ix] 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.

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

[xi] 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.

[xii] 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.

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